The Mariana Islands Training and Testing

Vol. 3

Environmental Impact Statement (EIS)/Overseas Environmental Impact Statement (OEIS)
United States Department of the Navy

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NAVSEA
NAVAL SEA SYSTEMS COMMAND

Mariana Islands
Training and Testing Activities
Final Environmental Impact Statement/
Overseas Environmental Impact Statement

Volume 3

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MITT EIS/OEIS Project Manager
Naval Facilities Engineering Command, Pacific
258 Makalapa Dr., Ste 100
Pearl Harbor, HI 96860-3134

Appendix E: Public Participation

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APPENDIX E PUBLIC PARTICIPATION

This appendix includes information about the public's participation in the development of the Mariana Islands Training and Testing Activities (MITT) Environmental Impact Statement (EIS)/Overseas EIS (OEIS).

E.1 PROJECT WEBSITE

A public website was established specifically for this project: http://www.MITT-EIS.com/. This website address was published in the *Notice of Intent to Prepare an Environmental Impact Statement and Overseas Environmental Impact Statement* (Notice of Intent) and has subsequently been re-printed in all newspaper advertisements, agency letters, and public postcards. The fact sheets, posters, and various other materials were made available on the project website throughout the course of the project. The public website was also presented in the Draft EIS/OEIS Notice of Availability and Notice of Public Meetings for the Draft EIS/OEIS.

E.2 GENERAL SUMMARY OF THE SCOPING PERIOD

The public scoping period began with the issuance of the Notice of Intent in the *Federal Register* on 8 September 2011. This notice included a project description and scoping meeting dates and locations. A correction to the Notice of Intent was published in the *Federal Register* on 16 September 2011 to correct the date of the scoping meeting on Rota. The scoping period lasted 60 days, concluding on 7 November 2011. Section E.2.1 describes the United States (U.S.) Department of the Navy's (Navy's) notification efforts during scoping. The scoping period allowed a variety of opportunities for the public to comment on the scope of the EIS/OEIS.

E.2.1 PUBLIC SCOPING NOTIFICATION

The Navy made significant efforts at notifying the public to ensure maximum public participation during the scoping process. A summary of these efforts follows.

E.2.1.1 Notification Letters

A personalized notification letter was mailed on 9 September 2011 to 129 federal and local elected officials and government agencies. This letter provided information about the Proposed Action; the MITT Study Area; the scoping process; and the locations, dates and times of the scoping meetings. Information about submitting comments was also provided.

Recipients of stakeholder notification letters included:

Elected Officials:
U.S. Congressional Delegate, Washington D.C. Office
Guam Office of the Governor
31st Guam Legislature
Village of Agana Heights
Village of Agat
Village of Asan-Maina
Village of Barrigada
Village of Chalan Pago-Ordot
Village of Dededo
Village of Hagåtña
Village of Inarajan
Village of Mangilao

Village of Merizo
Village of MongMong-Toto-Maite
Village of Piti
Village of Santa Rita
Village of Sinajana
Village of Talofofo
Village of Tamuning-Tumon-Harmon
Village of Umatac
Village of Yigo
Village of Yona
13th Rota Municipal Council
Rota Mayor's Office
Saipan Mayor's Office
Tinian Mayor's Office
CNMI House of Representatives
CNMI Public Information and Protocol Office
CNMI Senate

Government Agencies – Federal:
Federal Aviation Administration
National Park Service, War in the Pacific National Historic Park
National Marine Fisheries Service Habitat Division, Guam Office
National Marine Fisheries Service, CNMI Office
U.S. Army Corps of Engineers, Honolulu District
U.S. Coast Guard Sector Guam – Officer in Charge Marine Inspections
U.S. Department of Agriculture, Natural Resource Conservation Service, West Area Office
U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services
U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, Institute of Pacific Islands Forestry
U.S. Department of Agriculture, Natural Resources Conservation Service, Saipan Service Center
U.S. Department of the Interior, Office of Insular Affairs
U.S. Environmental Protection Agency, Region 9
U.S. Environmental Protection Agency, Region 9, Pacific Islands Contact Office, Honolulu
U.S. Fish & Wildlife Service
U.S. Fish & Wildlife Service, Guam
U.S. Fish & Wildlife Service, Guam National Wildlife Refuge
U.S. Fish & Wildlife Service, Pacific Islands Fish and Wildlife Office

Government Agencies – Local:
A.B. Won Pat International Airport, Guam
Department of Military Affairs/Guam Air National Guard
Guam Bureau of Statistics and Plans, Coastal Management Program
Guam Chamorro Land Trust Commission
Guam Department of Agriculture
Guam Department of Agriculture, Division of Aquatics and Wildlife Resources
Guam Department of Parks and Recreation, Historic Preservation Office
Guam Environmental Protection Agency
Guam Environmental Protection Agency, Water Resources Management Program

Guam Homeland Security, Office of Civil Defense
Guam Visitors Bureau
Guam Waterworks Authority
CNMI Coastal Resources Management Program
CNMI Department of Community and Cultural Affairs, Historic Preservation Office
CNMI Department of Lands and Natural Resources, Division of Agriculture
CNMI Department of Lands and Natural Resources, Division of Fish and Wildlife
CNMI Department of Lands and Natural Resources, Division of Parks and Recreation
CNMI Department of Public Lands
CNMI Department of Public Safety, Office of the Commissioner
CNMI Department of Public Safety, Tinian Fire Division
CNMI Division of Environmental Quality

Other:
CNMI Northern Marianas College Cooperative, Research, Extension and Education Service
Saipan Chamber of Commerce
Guam Community College
University of Guam
University of Guam Water and Environmental Research Institute

An additional nine stakeholders received a personalized notification letter that offered a briefing, and the eight members of the Military Integration Management Committee (MIMC) received a letter notifying them of the MIMC group briefing. These letters were mailed on 9 September 2011.

Congressional Delegate Guam District Office
Congressional Delegate Saipan District Office
Guam Office of the Governor
31st Guam Legislature
Mayors' Council of Guam
Military Integration Management Committee
CNMI Department of Commerce
Guam Chamber of Commerce
Saipan Chamber of Commerce
Tinian Chamber of Commerce

E.2.1.2 Postcard Mailers

On 12 September 2011, postcards announcing the Notice of Intent and providing the scoping meeting dates, locations, and times were mailed to 475 organizations and individuals on the project mailing list, which was compiled from the previous Mariana Islands Range Complex (MIRC) EIS/OEIS project mailing lists.

E.2.1.3 Press Releases

Press releases to announce the Notice of Intent were distributed on 9 September 2011.

E.2.1.4 Newspaper Display Advertisements

Advertisements were made to announce the scoping meetings in the following newspapers on the dates indicated below:

Marianas Variety	*Pacific Daily News*	*Saipan Tribune*
9 September 2011	9 September 2011	9 September 2011
21 September 2011	16 September 2011	19 September 2011
27 September 2011	21 September 2011	23 September 2011
28 September 2011	22 September 2011	24 September 2011
29 September 2011	23 September 2011	26 September 2011

E.2.2 SCOPING MEETINGS

Five scoping meetings were held on September 22, 23, 26, 27, and 29 in the villages of Mangilao, Guam; Santa Rita, Guam; Susupe, Saipan; San Jose Village, Tinian; and Sinapalo I, Songsong Village, Rota, respectively. At each scoping meeting, staffers at the welcome station greeted guests and encouraged them to sign in to be added to the project mailing list to receive future notifications. In total, 229 people signed in at the welcome table. The meetings were held in an open house format, presenting informational posters and written information, with Navy staff and project experts available to answer participants' questions. Additionally, a digital voice recorder was available to record participants' oral comments. The interaction during the information sessions was productive and helpful to the Navy.

What is a scoping meeting?

The scoping period determines the extent of the EIS in terms of significant issues. Scoping meetings allow the face-to-face exchange of information and ideas to ensure relevant topics are identified and properly studied and that the Draft EIS/OEIS is thorough and balanced.

E.2.3 PUBLIC SCOPING COMMENTS

Scoping participants submitted comments in five ways:

- Oral statements at the public meetings (as recorded by the digital voice recorder)
- Written comments at the public meetings
- Written letters (received any time during the public comment period)
- Electronic mail (received any time during the public comment period)
- Comments submitted directly on the project website (received any time during the public comment period)

In total, the Navy received comments from 34 individuals and groups. Because many of the comments addressed more than one issue, 135 total comments resulted. Table E.2-1 provides a breakdown of areas of concern based on comments received during scoping. The summary following Table E.2-1 provides an overview of comments and is organized by area of concern.

Table E.2-1: Public Scoping Comment Summary

Area of Concern	Count	Percent of Total
Proposed Action/Alternatives	9	7
Study Area	7	5
Marine Mammals/Sea Turtles	7	5
Marine Mammal Monitoring	5	4
Fish/Marine Habitat	8	6
Terrestrial/Birds	10	7
Water Quality	5	4
Air Quality	1	1
Noise	2	1
Cultural Resources	5	4
Reefs	3	2
Land Use	5	4
Commercial/Recreational Fishing	6	4
Regional Economy	9	7
Public Health & Safety	6	4
SONAR/Underwater Explosions	6	4
Marianas Trench National Monument/Piti Marine Preserve Area	3	2
Mitigation	8	6
Cumulative	8	6
Other	21	16
TOTAL	**134**	**99**

E.2.3.1 Proposed Action/Alternatives

Comments in this category included whether NEPA applies in the open ocean, if other training sites were options, and whether some proposed sites in the Study Area could be avoided.

E.2.3.2 Study Area

Participants expressed concerned regarding the larger size of the Study Area. Participants expressed confusion between the MIRC Study Area and the new MITT Study Area and why the boundaries have changed.

E.2.3.3 Marine Mammals/Sea Turtles

Participants expressed concern that military activity would drive marine mammals to other locations. Participants expressed concern over impacts from Sound Navigation and Ranging (sonar) and underwater explosives.

E.2.3.4 Marine Mammal Monitoring

Respondents inquired as to whether monitoring was taking place and if it would continue, and generally requested the results of any monitoring that had taken place to date.

E.2.3.5 Fish/Marine Habitat

Concerns in this area were related to potential harm to fish and habitat during military training and testing activities.

E.2.3.6 Terrestrial/Birds

Comments in this category included concerns regarding military training impacts on seabirds on Farallon de Medinilla, general injury of wildlife, monitoring of the Mariana fruit bats/swiftlets/common moorhen, and bird aircraft strike hazards.

E.2.3.7 Water Quality

Water quality comments included general concerns regarding potential contaminants in the water.

E.2.3.8 Air Quality

One respondent noted a general concern regarding the impact of military training on air quality.

E.2.3.9 Noise

Respondents commented on the potential impact of noise on the public, wildlife, and areas outside of military installation boundaries.

E.2.3.10 Cultural Resources

One respondent was concerned about impacts on and access to historical medicinal plants. Other respondents made comments related to the historical resources of the region.

E.2.3.11 Reefs

Participant expressed concern regarding the impact of military training on reefs.

E.2.3.12 Land Use

Land use comments ranged from respondents not wanting the military to use the land at all to concerns regarding overall cumulative effects on land-based resources.

E.2.3.13 Commercial/Recreational Fishing

Comments concerned the limitations placed on fishermen as a result of military activity. One participant suggested that additional military personnel brought to the region should be given a special orientation regarding the local population and resources. Additional comments included concern regarding restrictions to prime fishing areas.

E.2.3.14 Regional Economy

There were several comments regarding regional economic concerns, including questions about the effects on commercial shipping and commercial fishing.

E.2.3.15 Public Health and Safety

Respondents commented on the overall potential cumulative impacts related to public health and safety.

E.2.3.16 Sonar and Other Active Acoustic Sources/Underwater Explosives

Concerns were expressed regarding the impact of sonar and underwater explosives on marine mammals and sea turtles.

E.2.3.17 Marianas Trench National Monument/Piti Marine Preserve

One participant questioned whether the Marianas Trench National Monument was included in the Study Area and, if it was, whether special environmental precautions would be taken in the vicinity of the monument.

E.2.3.18 Mitigation

Participants wanted to ensure that mitigations were discussed in the Draft EIS/OEIS and asked for reports of the effectiveness of mitigations put in place as a result of the MIRC Record of Decision. A suggestion was made that a communication line be established between the military and the office of the Mayor of Rota for notification of military exercises at least two weeks ahead of time.

E.2.3.19 Cumulative

Comments in this category expressed concern about the overall impact of military activity in Guam and in overall MITT Study Area.

E.2.3.20 Other

This category of comments includes the desire for the military activities to take place somewhere other than the Mariana Islands, that the documents were not available at the library that had been publicized (documents were available on the MITT EIS/OEIS website), issues with use of the project website, concern regarding the way information was conveyed to the public, concern regarding termination of public leases as a result of the Proposed Action, a desire for reporting of the adequacy of Notices to Mariners and Notices to Airmen, excitement regarding their ability to be involved in the NEPA process, and praise to the Navy presenters at the public meetings.

E.3 Public Comment Period for the Draft Environmental Impact Statement/Overseas Environmental Impact Statement

The 90-day public comment period on the Draft EIS/OEIS began with the issuance of the Notice of Availability and a Notice of Public Meetings in the Federal Register on 13 September 2013 (Appendix B, Federal Register Notices). (Due to the federal government shutdown on 1 October 2013, subsequent notices were published in the Federal Register on 31 October 2013, and 1 November 2013, to notify the public of the rescheduled public meetings and extension of comment period.) The public comment period began on 13 September 2013 and concluded on 12 December 2013.

The Notice of Public Meetings included a project description and dates and locations of the four public meetings. The public comment period allowed a variety of opportunities for the public to comment on the Draft EIS/OEIS (Appendix B, Federal Register Notices). Public notification materials directed the public to the project website, www.MITT-EIS.com, to learn about the project and provide comments on the Draft EIS/OEIS. The project website, which has been live since the NOI was published in September 2011, provides project information and materials for download, such as the Draft EIS/OEIS, project fact sheet booklet, informational posters, and past notifications. Navy representatives were available during the open house public meetings to provide information and answer questions one-on-one. Comment sheets were made available to attendees.

Commenters provided their input on the Draft EIS/OEIS in letters submitted through mail, written or oral comments received at the public meetings, and via the project website.

E.3.1 PUBLIC NOTIFICATION

The Navy made significant efforts to notify the public to ensure maximum public participation during the Draft EIS/OEIS public review and comment period, including using letters, postcards, press releases, and newspaper display advertisements. All public notifications included information about the Proposed Action, availability of the Draft EIS/OEIS, comment period, and public meetings. A summary of these efforts follows.

E.3.1.1 Notification Letters

A personalized notification letter was mailed on 9 September 2013 to 242 federal and local elected officials, government agencies, community and business groups, fishing/recreation groups and marinas, and aviation groups on the project mailing list.

E.3.1.2 Postcard Mailers

A postcard was mailed to 622 individuals on the project mailing list on 9 September 2013. Due to the federal government shutdown, a second postcard announcing the rescheduled public meetings and extended comment period was mailed on 28 October 2013. The postcards also included information on the availability of the Draft EIS/OEIS, Proposed Action and alternatives, and how to submit comments.

E.3.1.3 Press Releases

Three news releases were distributed by Joint Region Marianas Public Affairs Office to media outlets and other interested parties in support of the public review and comment period for the Draft EIS/OEIS and the public meetings. The first news release was distributed on 16 September 2013 and announced the availability of the Draft EIS/OEIS for public review. A second news release was distributed on 4 October 2013 and announced the postponement of the public meetings. The release included information about future notifications for rescheduled public meetings and stated that the public could still submit comments during the federal government shutdown. A third news release was distributed on 28 October 2013 and included information about the rescheduled public meetings and extended comment period.

E.3.1.4 Newspaper Display Advertisements

Five series of display advertisements were placed in the *Marianas Variety, Pacific Daily News*, and *Saipan Tribune*. As listed below, the first series of newspaper advertisements was published on the Monday following the opening date of the comment period. The second series of advertisements was published on the week prior to the originally scheduled public meetings. The first and second series announced the availability of the Draft EIS/OEIS, opportunity for public comment, and project and public meeting information.

The third series of advertisements was published on the date of what would have been the first public meeting (7 October 2013) and announced the postponement of the public meetings due to the federal government shutdown. The fourth series of display advertisements was published 2 weeks prior to the rescheduled public meetings and announced the rescheduled public meeting dates and extended comment period. The final series of display advertisements was published on the 3 consecutive days prior to the rescheduled public meeting dates, including the day of the rescheduled public meeting.

Advertisements were made to announce the public meetings in the following newspapers on the dates indicated below:

Marianas Variety	*Pacific Daily News*	*Saipan Tribune*
16 September 2013	16 September 2013	16 September 2013
2 October 2013	30 September 2013	1 October 2013
7 October 2013	7 October 2013	4 October 2013
28 October 2013	28 October 2013	7 October 2013
13 November 2013	10 November 2013	28 October 2013
14 November 2013	11 November 2013	11 November 2013
15 November 2013	12 November 2013	12 November 2013
		13 November 2013

E.3.2 PUBLIC MEETINGS

Four public meetings were held on 12, 13, 14, and 15 November 2013 at the University of Guam, Guam; Susupe, Saipan; Tinian High School, Tinian; and Sinapalo Elementary School, Rota, respectively. A total of 13 meetings with local officials and agencies were held in addition to the public meetings (Table E.3-1).

Table E.3-1: Draft EIS/OEIS Stakeholder Briefings

Location	Stakeholders	Briefing Date
Guam	Congresswoman Bordallo's Office	Nov. 7, 2013
Guam	Guam Chamber of Commerce	Nov. 7, 2013
Guam	32nd Guam Legislature	Nov. 7, 2013
Guam	Mayor's Council of Guam	Nov. 7, 2013
Guam	JRM/USDR (RDML Payne)	Nov. 8, 2013
Guam	Governor of Guam	Nov. 8, 2013
Saipan	Congressman Sablan's Office	Nov. 13, 2013
Saipan	CNMI Governor/Lt Governor	Nov. 13, 2013
Saipan	Military Integration Management Committee (MIMC)	Nov. 13, 2013
Saipan	Saipan Chamber of Commerce	Nov. 13, 2013
Tinian	Tinian Mayor's Office	Nov. 14, 2013
Tinian	Tinian Chamber of Commerce	Nov. 14, 2013
Rota	Rota Mayor's Office	Nov. 15, 2013

The public meetings were held in an informal open-house style information session format where members of the public could arrive at any time during the 3-hour event. Staffers at the welcome station greeted guests, provided them with informational materials, and encouraged meeting attendees to sign in to receive future notifications. Comment forms, fact sheet booklets, and one-page fact sheets in

English, Chamorro, and Carolinian were distributed to attendees, along with verbal direction on the organization and flow of the poster stations arranged around the room.

The fact sheet booklet included the following topics:

(1) military training in the MITT Study Area
(2) need for realistic training
(3) overview of the Draft EIS/OEIS (Proposed Action and alternatives)
(4) summary of Draft EIS/OEIS impact analysis
(5) public access and safety in ocean areas
(6) the Navy's ongoing mitigation measures at sea
(7) protection of natural and cultural resources
(8) NEPA process and public involvement

Subject matter experts from the military services and consultants staffed each poster station to answer questions and provide project information. Poster stations covered the following topics:

(1) welcome and sign-in
(2) MITT Study Area
(3) military training in the MITT Study Area
(4) importance of training and testing with active sonar
(5) Proposed Action, purpose and need, and alternatives
(6) public access and safety
(7) Draft EIS/OEIS findings
(8) environmental protection and stewardship
(9) marine species research and monitoring

A comment collection station, which included tables, chairs, pens, comment forms, and a court reporter for oral comments, was also set up to facilitate the submission of written and oral comments from the public. A Chamorro-language interpreter was available to assist with two-way dialogue at poster stations and facilitating the submission of oral comments. Attendees were encouraged to provide comments for consideration in the development of the Final EIS/OEIS. Individuals could submit comments at the meeting, mail them to the address provided, or submit them online at www.MITT-EIS.com.

A local advocacy group staged a respectful demonstration at the public meeting on Guam. Members of the "Our Islands Are Sacred" campaign set up a table outside of the meeting room and provided information to interested parties. Near the end of the public meeting, members of the campaign entered the meeting room and temporarily interrupted the meeting by singing the Chamorro national anthem.

E.3.3 PUBLIC COMMENTS ON DRAFT ENVIRONMENTAL IMPACT STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT

During the 90-day public comment period, comments were received from 8 federal agencies, 13 state/local/regional agencies, 3 non-governmental organizations, and approximately 230 private individuals (approximation due to duplicate comments received).

Tables E.3-2, E.3-3, and E.3-4 provide a listing of all comments received on the Draft EIS/OEIS from agencies, organizations, and private individuals, respectively, and the Navy's response. Each row in

these tables presents the identification of the commenter, the comment, and the Navy's response to the comment. Because many commenters touched on more than one topic, the commenter's topics were separated into individual comments, assigned a number, and responded to separately. The commenter's name is abbreviated when the comment is broken into more than one topic. The comment numbering system also captures whether the comment was received electronically via www.MITTEIS.com, in written form by mail or during a public meeting, or orally during public testimony at a public meeting. For example, the first of the agency comments is by Bureau of Statistics and Plans (BOSP). Since their comments cover several topics, these are separated into subsequent comments named BOSP - 2, BOSP - 3, etc.

Responses to all comments were prepared and reviewed for scientific and technical accuracy and completeness. Comments appear as they were submitted and have not been altered with the exception that attachments and personal information were removed, as necessary.

Table E.3-2 contains comments from federal, state, and local agencies received during the public comment period and the Navy's response.

Table E.3-2: Responses to Comments from Agencies

Agency	Comment	Response
Bureau of Statistics and Plans (BOSP) - 1	HafaAdai: The Bureau of Statistics and Plans is once again submitting the following comments in response to the request for comment regarding the Department of Defense (DOD) preparation of an Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS), for the proposed Mariana Islands Training and Testing (MITT) activities. It was indicated that the MITT EIS is the reevaluation and reauthorization of training and testing activities reviewed in the Mariana Islands Range Complex EIS/OEIS, which was completed by the Navy with input from the community in 2010. Accordingly, the proposed Action is to continue to conduct training and testing activities, which may include the use of active sonar and explosives, primarily in established operating and military warning areas of the MITT Study Area. It may also include pierside sonar maintenance and testing alongside navy piers in Inner Apra Harbor, and land-based training activities at existing ranges and other training locations on Guam and the Commonwealth of the Northern Mariana Islands (CNMI). We understand that the "purpose of the Proposed Action is to ensure the Navy accomplishes its mission to maintain, train and equip combat-ready military forces capable of winning wars, deterring aggression and maintaining freedom of the seas."	Thank you for your participation in the NEPA process. Your comment has been broken down into component parts to ensure that all comments provided in your letter are addressed. As a result, this portion of the comment does not contain a specific question or inquiry related to the EIS/OEIS. Therefore, no response is provided.
BOSP - 2	**Federal Consistency Requirements:** We want to reiterate the need for the Department of the Navy to follow the Federal Consistency requirements under the Coastal Zone Management Act (CZMA) of 1972, 16 USC § 1456©(1) and the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) Public Law 101-508, mandate that any action proposed by a Federal agency - regardless of	The Navy has submitted a Coastal Consistency Determination to the Bureau of Statistics and Plans for Guam and to the Coastal Resources Management Office for the CNMI for proposed military training and testing activities. For Guam, the consistency determination was prepared in accordance with Guam's *Procedures Guide for Achieving Federal Consistency with the Guam Coastal Management Program* (Bureau of Statistics and Plans

Agency	Comment	Response
	the location of that activity -that will have a reasonably foreseeable effect on any land or water use or natural resource of a State's coastal zone must be consistent to the maximum extent practicable with the enforceable policies of State's federallyapproved CZMA programs, Section 307©(1)(A), 15 CFR Part 930.37. ***Federal consistency obligations under the CZMA are independent of those required under the National Environmental Protection Act and are not necessarily fulfilled by the submission of a NEPA document, 15 CFR Part 930.37.*** As provided in the Federal consistency rules and regulations approved by NOAA/OCRM, all Federal and State agencies should mutually agree on how to best coordinate the requirements of NEPA and the CZM Act. Since the BSP has a Cooperative Agreement with NOAA to implement CZMA and CZARA, the BSP must either concur or object to the proposed activity; once a determination has been submitted as stated on our previous response for comment date, November 7, 2011.	May 2011). For the CNMI, the consistency determination was prepared in accordance with the CNMI Coastal Resources Management Act (CRMA) and based on the applicability of enforceable policy elements to the Proposed Action. Based on the analysis for Guam and CNMI, the Navy determined that the Proposed Action is consistent to the maximum extent practicable with the enforceable policies of the Guam and CNMI Coastal Resources Management Programs. The Bureau of Statistics and Plans letter of concurrence was provided to the Navy on 29 August 2014.
BOSP - 3	**Comments and/or Concerns:** **Section 2.** An overarching concern with the MITT DEIS is one we expressed in our comments for the Mariana Islands Range Complex DEIS and FEIS, primarily that this DEIS lacks a range of reasonable alternatives. The proposed action alternatives are nearly identical, with the main differences between Alternative 1 and Alternative 2 being primarily related to the level of activity rather than, for example, different site locations for individual activities. The Navy's Environmental and Natural Resources Program Manual provides examples of the types of alternatives that should be included in an EIS, including 1) taking no action, 2) postponing action, and 3) selecting actions of a significantly different nature that would meet mission and project objectives with different environmental impacts. We believe that Alternative 1 and Alternative 2 are not sufficiently different, leaving reviewers with essentially one action alternative (which, then, is not an	The Alternatives carried forward meet the Navy's purpose and need (see Section 1.4, Purpose and Need for Proposed Military Readiness Training and Testing Activities) to ensure that it can fulfill its obligation under Title 10. See Section 2.5 (Alternatives Development) for more detailed information on the development of alternatives. The Navy complied with NEPA requirements in the development and consideration of alternatives. This EIS/OEIS analyzes all alternatives in Section 2.5.2 (Alternatives Carried Forward) and explains why the Navy has eliminated other alternatives in Section 2.5.1 (Alternatives Eliminated from Further Consideration). The differences between Alternatives 1 and 2 are detailed in Sections 2.7 (Alternative 1: Expansion of Study Area Plus Adjustments to the Baseline and Additional Weapons, Platforms, and Systems) and 2.8 (Alternative 2: Includes Alternative 1 Plus Increased Adjustments to the Type and Tempo of Training and Testing Activities) of the Final EIS/OEIS. The selection of an alternative by the decision-maker will be based on a review of all relevant facts, impact analyses, comments received via the EIS/OEIS public participation process, and

Agency	Comment	Response
	"alternative" at all), and thus a range of reasonable alternatives is not offered for evaluation of environmental impacts. Alternatives should address alternate designs, site locations, etc. when establishing the selection criteria. In addition, the rationale behind the decision to evaluate the Alternative 2 as presented in this DEIS is not clear. The document states that "this alternative allows for potential budget increases, strategic necessity, and future training and testing requirements'', but this vague statement, and the designation of Alternative 1 as the Preferred Alternative, suggests that the additional activities and increased level of Alternative 1 activities under Alternative 2 were not actually required to meet the stated Purpose and Need, or that they were unrealistic given current budget constraints. Thus, the inclusion of Alternative 2 has the appearance of being a highballing tactic, where the impacts of the Preferred Alternative (Alternative 1) are compared against the greater impacts of another alternative (Alternative 2) that the action proponent had no intention in pursuing.	the requirements of the Navy in order to fulfill its mission.
BOSP - 4	**3.1.3.** The authors of the MITT DEIS indicate that an analysis of the potential water quality impacts of amphibious landings was not pursued in this document because a 1999 study of the impacts of this activity on corals at a site in Tinian concluded that observed sediment plumes were localized, dissipated within minutes, and "were not qualitatively different from episodes of sediment resuspension during periods of storm-driven waves that occur routinely on Tinian." While we are concerned with statements such as this, which ignore the potential impacts of increasing the frequency of disturbance events beyond a normal condition as a result of human activity, even if when an individual human-caused disturbance may be similar to an individual natural disturbance, we are primarily concerned with the reliance of a single study in Tinian to preclude further analysis of potential impacts to current or planned amphibious landing sites, such as Dry Dock Island and Dadi. The sediment characteristics are considerably	The discussion of water quality impacts associated with amphibious landing activities has been improved in the Final EIS/OEIS. The Navy agrees that use of amphibious landing vehicles may cause temporary resuspension events during amphibious training activities. The Navy's planning of amphibious landing activities must be vetted through Joint Region Marianas environmental staff and MIRC Operations staff; these decisions on which location to use and when training should occur are informed by ongoing coral monitoring efforts within Apra Harbor to minimize to the maximum extent practical impacts on corals within Apra Harbor. The language regarding Standard Operating Procedures for Amphibious Landings has been updated in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS (as well as cited in relevant biological subsections of Chapter 3). The information now states:

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	different between the Tinian and Guam sites, with the Tinian site is dominated primarily by large-grained, bioclastic sediments, while the Guam sites would have a significantly greater proportion of fine-grained clays and other sediments of terrestrial origin. The larger-grained bioclastic sediments would be expected to settle relatively quickly after resuspension, but the fine-grained sediments would remain suspended for a longer period of time. The fine-grained sediments are also known to be more harmful to corals and other benthic organisms. Both Guam sites are also far less exposed to storm-driven waves than the Tinian site, which would lead us to conclude that the resuspension of sediments by amphibious landing activity would likely occur at levels that would not occur naturally. The concentration of suspended sediments may indeed increase at these sites after significant rain events, but it is not clear how Total Suspended Sediment loads resulting from amphibious landing activities would compare with major rainfall events - hence the need to evaluate the potential impacts further. We expressed concerns regarding the potential impacts of amphibious landing activities on water quality and nearby marine communities in our comments on the MIRC DEIS and FEIS. In our comments we noted that Government of Guam biologists have witnessed highly turbid water apparently related to nearby Landing Craft Air Cushion (LCAC) activity while snorkeling at Jade Shoals on February 2, 2009. A sediment plume was visible in the immediate vicinity of the craft near relatively shallow areas, and the water quality appeared to diminish as one approached the landing beach, indicating that the shallow water near the landing beach was the main source of the suspended solids. While temporary, these impacts should not be considered insignificant, especially if the intensity of these activities were to increase. While the poor water quality observed at Jade Shoals may not directly cause the mortality of corals and other reef organisms directly, it does place upon the reef community a level of stress that would not otherwise occur but for the activity of the LCACs.	Prior to any amphibious over-the-beach training activity conducted with larger amphibious vehicles such as LCACs or Amphibious Assault Vehicles (AAVs) (e.g., Amphibious Assaults), a hydrographic survey and a beach survey would be required. The surveys would be conducted to identify and designate boat lanes and beach landing areas that are clear of coral, hard bottom substrate, and obstructions. LCAC landing and departure activities would be scheduled at high tide. In addition, LCACs would stay fully on cushion or hover when over shallow reef to avoid corals and hard bottom substrate. This is a standard operating procedure for safe operation of LCACs, and in addition to minimizing the likelihood of direct strikes on corals, would also minimize resuspension of sediments and increased turbidity by requiring landings to be conducted at high tide. While resuspension and temporary increases in turbidity would occur during landing activities, analysis presented in Section 3.8 (Marine Invertebrates) in the EIS/OEIS concludes that no long-term or population level impacts are anticipated. The impact of landing craft (e.g., LCACs) on corals would not be significant because: (1) the relatively small area that would be impacted (i.e., impacts would be localized); (2) the frequency of activities (up to 12 per year in any of three locations); and (3) effects would cease within minutes to hours of the conclusion of the activity (depending on the characteristics of the site, such as sediment type). Landing activities are not expected to result in lasting effects on the survival, growth, recruitment, or reproduction of coral species at the population level.

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	Corals, for example, would have to expend additional energy removing sediment that would not otherwise occur, potentially resulting in reduced fecundity, reduced growth rates, and increased susceptibility to pathogens. Many of the reefs of Guam are subject to intense anthropogenic impacts, and as such many are in poor to fair condition. Additional impacts to corals and other reef organisms should be considered within this context, especially within the larger context of climate change and the expected impacts to reefs; the cumulative impacts of the myriad of impacts caused by human activity should be considered in this analysis. Our comments on the MIRC EIS documents regarding the consideration of climate change impacts are even more relevant now, as Guam's reefs have recently experience the most significant coral bleaching event on record. At the very least, the potential impact of amphibious landing activities on paled and bleached corals should be evaluated, and mitigation options should include potentially altering the location and timing of amphibious landing activities during coral bleaching events and mass coral spawning events.	
BOSP - 5	**3.3.3.** We are concerned about the impact of landing craft exercises that would occur at Dadi Beach on the dolphins that reside in Agat Bay. LCAC's, for example, are very loud and have a high potential to disturb the natural behavior of the dolphin pod that resides in Agat Bay. There is also the chance of injury or death resulting from vessel strikes. Repeated temporary disturbances may result in long term impacts, such as abandonment of that area. The apparently high potential for disturbance/injury to cetaceans as a result of increased intensity of exercises involving amphibious vehicle suggests that there will be unavoidable impacts.	The Navy recognizes the common occurrence of spinner dolphins within Agat Bay and has developed mitigation measures in consultation with NMFS under provisions of the MMPA. Beachmasters are used during these activities as shore-based observers with binoculars whose sole purpose is to ensure safety of craft, including avoidance of marine and terrestrial animals. Spinner dolphin groups are relatively easy to detect because of the size of the group and surface behaviors. Details on mitigation measures, specifically Lookout measures, and standard operating procedures for vessel movements and the use of explosives is described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring). Observing for marine mammals prior to and during activities minimizes the potential for impacts on dolphins from underwater sound and ship strikes.
BOSP - 6	**3.4.5.** We are also concerned about the impacts of underwater mine detonation activities on dolphins and other	Activities using underwater explosives, including mine countermeasures activities at the Agat Bay and Apra Harbor sites, were modeled to

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	cetaceans at the Agat and Outer Apra Harbor sites, especially considering the size of the explosives would double under the preferred action alternative. We would like to see specific mitigation measures for avoiding impacts to these populations as a result of this particular activity.	estimate impacts on marine mammals from explosives. Modeling analysis predicts up to 18 behavioral exposures, 6 TTS exposures, and 1 PTS exposure as a result of training and testing activities using explosives for all marine mammals in the Study Area, including areas were mine countermeasure activities are conducted. No mortalities of any marine mammals are predicted. Mitigation measures specifically for mine countermeasure activities are presented in Chapter 5, Standard Operating Procedures, Mitigation, and Monitoring, Sections 5.3.1.2.2.4 and 5.3.1.2.2.5. The Navy is formally consulting with the NMFS concerning potential impacts of the proposed training and testing activities on all marine mammals protected under the MMPA and known to occur in the MITT Study Area. The Navy has updated the Final EIS/OEIS based on Section 7 consultation and will incorporate all reasonable and prudent measures, and terms and conditions that are set forth in the Biological Opinion, in the Record of Decision. In response to consultation with NMFS on the Essential Fish Habitat Analysis (EFHA) and potential impacts on coral reefs, the Navy has revised underwater detonations at the Outer Apra Harbor Underwater Detonation Site from 20 lb. net explosive weight (NEW) to 10 lb.
BOSP - 7	**3.3.3.2.** Related to our concerns regarding the impacts of amphibious landing activities on marine water quality and the potential for indirect impacts to benthic communities, we are also concerned about the potential for direct physical impacts of this activity on benthic habitat. Impacts that alter the structure of the reef, whether covered with living coral, crustose coralline algae, turf algae, macroalgae, etc. can be considered impacts to Essential Fish Habitat. For example, the repeated use of amphibious landing craft in the shallow waters at any of the current or proposed sites could alter the reef structure, possibly reducing rugosity and thus affecting its suitability to certain fish species. Even with amphibious landing craft such as the LCAC, which operate on a cushion of air, have the potential to directly impact benthic habitat	As described in the Physical Disturbance and Strike Stressor section of 3.8 (Marine Invertebrates), prior to any amphibious over-the-beach training activity conducted with larger amphibious vehicles such as LCACs or AAVs (e.g., Amphibious Assaults), a hydrographic survey and a beach survey would be required. The surveys would be conducted to identify and designate boat lanes and beach landing areas that are clear of coral, hard bottom substrate, and obstructions. LCAC landing and departure activities would be scheduled at high tide. In addition, LCACs would stay fully on cushion or hover when over shallow reef to avoid corals and hard bottom substrate. This is a standard operating procedure for safe operation of LCACs. Over-the-beach amphibious activity would only occur within designated areas based on the hydrographic and beach surveys. Similarly, AAV activities would only be scheduled within designated boat lanes and beach landing areas and

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	through improper use (which might be expected during training exercises). For example, anecdotal reports from a past LCAC demonstration at Dadi Beach indicate that large coral colonies were disturbed (e.g., detached from substrate) when an LCAC was brought down in the shallow water just beyond the beach, and then raised again to bring the craft upon the beach. What measures will be implemented so that this type of impact does not occur? And what type of mitigation will occur if this impact does occur?	would conduct their beach landings and departures at high tide one vehicle at a time within their designated boat lane (COMNAVMAR Instruction 3500.4A). Based on the surveys, if the beach landing area and boat lane is clear, the activity could be conducted, and crews would follow procedures to avoid obstructions to navigation, including coral reefs; however, if there is any potential for impacts to occur on corals or hard bottom substrate, the Navy will coordinate with applicable resource agencies before conducting the activity. Hydrographic and beach surveys would not be necessary for beach landings with small boats, such as Rigid Hull Inflatable Boats (RHIBs).
BOSP - 8	**Table 3.0.5** lists Source classes excluded from further study Marine species have "inconsequential responses" to the source classes What do they mean by "inconsequential response"? Define that more specifically.	As indicated by the discussion in Appendix H Section H.1 (Conceptual Framework for Assessing Effects from Sound-Producing Activities), an animal is considered “exposed” to a sound if the received sound level at the animal’s location is above the background ambient noise level. Exposures from *de minimis* sources are unlikely in general (as described in Section 3.0.4.1.6.1, *De Minimis* Sources) but if they occur they are considered inconsequential because it is assumed that any reaction to the exposure would be minor and not be biologically significant. As described in Section 3.0.4.1.6.1 (*De Minimis* Sources), the characteristics of *de minimis* sources (that may include low sources levels, frequencies at or above the limits of marine species hearing, and very short durations) indicate that exposures would not likely result in costs to the animal (e.g., expended energy or missed breeding, feeding, or communication opportunity) outside the normal variation experienced in an animal’s daily life history. While the information provided in this response was already contained within the EIS/OEIS, new language has been added to Section 3.0.4.1.6.2 (*De Minimis* Source Classes) putting inconsequential responses in context to better define the term and its usage in the Final EIS/OEIS document.
BOSP - 9	**3.9.3.1.1** States - "Fish have been exposed to short-duration, high-intensity signals such as those that might be found near high-frequency sonar, pile driving, or a seismic airgun survey. Such studies examined short-term effects that could result in death to the exposed fish, as well as hearing loss and long-term consequences. Recent experimental studies have	The Final EIS/OEIS states that direct injury is unlikely from non-impulse sound sources. The Final EIS/OEIS discusses the results of two studies (Jorgensen et al. 2005 and Kvadsheim and Sevaldsen 2005) which state that the impacts from sonar are difficult to determine. The Final EIS/OEIS also defines the different levels of sonar (high, mid, low), including what those levels are. Refer to Section 2.3.1 (Sonar and Other

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	provided additional insight into the issues (e.g., Govoni et al. 2003; McCauley et al. 2003; Popper et al. 2005; Popper et al. 2007; Doksaeter et al. 2009; Kane et al. 2010)." The very next paragraph 3.9.3.1.2, states "direct injury is unlikely from non-impulse sound sources, such as sonar." Above states that fish may die, have hearing loss and long-term consequences - from sources with "high-frequency sonar." Further explanation is needed distinguishing "sonar" vs. "high-frequency sonar."	Acoustic Sources of the EIS/OEIS) for an explanation of sonar.
BOSP - 10	**3.3.9.3.1.2.1** Explosions and other Acoustic Sources (Fish) States the shad species are the only species affected by high-frequency sonar, but "Behavioral reactions and auditory masking if they occurred for some shad species are expected to be transient. Long-term consequences for the population would not be expected." As stated above, some consequences to highfrequency sonar are more severe - death, hearing loss, etc. Further clarification is needed.	The Final EIS/OEIS states that only a few species of shad are known to be able to detect high-frequency sound sources. However, the Proposed Action is not likely to impact these fish based on the duration and frequency of the high-frequency activities. Additionally, if impacts were to occur they would be temporary in nature, such as behavioral reactions and auditory masking.
BOSP - 11	**4.4.10** Fish (Cumulative Effects) - "Actions discussed in Section 4.3 (Other Actions Analyzed in the Cumulative Impacts Analysis) and Table 4.3-1 are expected to result in injury and mortality that could inhibit species recovery." But right after such statement, another contradicts it: "Most potential impacts would be short-term behavioral and physiological responses. Any impacts from the Proposed Action resulting injury or mortality would be to a relatively small number of individuals. No population-level impacts are anticipated." Actions that could cause mortality and inhibit species recovery are not short term, nor affect small numbers nor affect population levels.	The analysis presented in Section 4.4.9 (Fish) of the Final EIS/OEIS discusses the impacts on fish from past, present, and reasonably foreseeable future actions in the Study Area. While these other actions (not part of the Proposed Action) are expected to result in injury and mortality that could inhibit species recovery, the Proposed Action is not expected to have similar impacts. The Final EIS/OEIS states that "…the relative contribution of Alternatives 1 and 2 to the overall injury and mortality would be low compared to the other actions for the following reasons: Most potential impacts from Alternatives 1 or 2 would be short term behavioral and physiological responses, any impacts from Alternatives 1 or 2 resulting in injury or mortality would be to a relatively small number of individuals, and no population-level impacts are anticipated."
BOSP - 12	**5.4.1** Mitigation - Most mitigation protection efforts focused on marine mammals and sea turtles, with a few focused on shallow reef habitat. Based on the conclusions for the fishes -	The Final EIS/OEIS states that impacts on fish from training and testing activities may injure or kill a few individuals but are unlikely to have measurable impacts on overall stocks or populations. The training and

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	there is no need to mitigate for potential losses. The concerns raised about fishes being injured, killed, or behavior patterns disturbed are not specifically addressed. The EIS states that any damage to fish species would be negligible, short term or only to a few specimens - even though some of the supporting research seems to suggest otherwise. Also, when there is not a lot of available research, the conclusion is made that potential effects to the fish species would be negligible as well.	testing activities are spread out throughout the Study Area, which would reduce the chances of individuals to be exposed multiple times. The Final EIS/OEIS states that if activities occurred in areas of high fish density more fish would be impacted; however, the probability of this occurring is low based on the patchy distribution of dense schooling fish. A detailed analysis of the impacts on fish from each of the stressors is provided in Section 3.9.3 (Environmental Consequences).
BOSP - 13	**Additional Comments:** 1) ES-8. Preferred Alternative. Since the "Transit Corridor" was not previously considered in the open ocean, what was the reason for including this activity now? Further explanation is needed.	The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur including the transit corridor.
BOSP - 14	2) ES-9. Net Explosive Weight Increase. We are concerned with the impact as it relates to the marine environment, specifically the "underwater explosives." Regardless of how the activity is to be performed in order to minimize the impacts to the marine environment, there will be "effects" as a result of noise and physical disturbance.	Effects from military training and testing activities (including underwater explosives) were analyzed in Chapter 3 of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities to minimize potential impacts on the environment. In response to consultation with NMFS on the MITT EFHA and potential impacts to coral reefs, the Navy has revised the Proposed Action in the Final EIS/OEIS for underwater detonations at the Outer Apra Harbor Underwater Detonation Site from 20 lb. net explosive weight (NEW) to 10 lb.
BOSP - 15	2) See ES-26. Mitigation Identification and Implementation. Does the officer who is conducting the training for those individuals that will be trained as "Standing Watch and Serving as Lookouts," have the expertise as to what to look for and how to address any impacts?	The Navy implements the Marine Species Awareness Training for watch personnel and Lookouts. Details on the specialized training is included in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring), Section 5.3.1.1 (Specialized Training) of the EIS/OEIS.
BOSP - 16	3) Greater need for coordination and consultation between the Government of Guam agencies, i.e. respective local and	The Navy recognizes the importance of continued communication with stakeholders and works cooperatively with federal, Guam, and CNMI

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	federal natural resource agencies, is highly recommended in order to address all impacts from this activity specifically if the mitigation measures to be used are acceptable.	government agencies, elected officials, and others. The Navy sent more than 200 letters to federal and local agencies and elected officials to notify them of the availability of the Draft EIS/OEIS and public comment period, and provided in-person briefings to the Governor of Guam, the Guam legislature, the Mayors' Council of Guam, and CNMI elected officials. The Navy welcomes agency comments on the EIS/OEIS and will continue to coordinate with federal and local resource agencies during the development of the Final EIS/OEIS.
BOSP - 17	4) Ensure that the Dept. of the Navy coordinated with the office of the Bureau of Statistics and Plans' Guam Coastal Management Program (GCMP) for a Federal Consistency review in order for GCMP thoroughly review all types of activities associated with the proposed development.	The Navy has submitted a Coastal Consistency Determination to the Bureau of Statistics and Plans for Guam for proposed military training and testing activities. For Guam, the consistency determination was prepared in accordance with Guam's *Procedures Guide for Achieving Federal Consistency with the Guam Coastal Management Program* (Bureau of Statistics and Plans May 2011). The Bureau of Statistics and Plans letter of concurrence was provided to the Navy on 29 August 2014.
BOSP - 18	**Cumulative and Secondary Impacts:** Resources Analyzed and Impact Summary states: (Page 11, John Van Name, COMPACFLT) presentation. **Section 3.2** Despite increases in criteria air pollutants, changes to air quality would be considered minor and localized; changes to air quality from hazardous air pollutants are not expected to be detectable. However, we are concerned that if hazardous air pollutants can't be detected, then the Navy should find ways to detect all levels of hazardous pollutants, no matter how minor and localized it is, and make everybody know about it. Furthermore, the Mariana Island Range Complex activities are on-going, however, no feedbacks and or data are being shared with the Government of Guam agencies with regards to the impacts of the activities comparing the expected vs. the	Section 3.2 of the Final EIS/OEIS provides much greater detail regarding the current air quality, current regulations, *de minimis* thresholds, and attainment status of Guam and CNMI. Additionally, each action alternative subsection in the EIS/OEIS (No Action Alternative, Alternative 1, and Alternative 2) provides a breakdown of the estimated annual criteria pollutant emissions from training and testing and compares them to the existing air quality environment (which includes the MIRC training as estimated in the MIRC Final EIS/OEIS). Calculation details are presented in spreadsheets in Appendix D (Air Quality Calculations and Record of Non-Applicability). Totals include emissions from aircraft, vessels, ordnance, and ground-based vehicles and equipment that are anticipated to be involved in training and testing activities. Based on the analysis in the MITT Final EIS/OEIS, under all action alternatives, criteria air pollutants emitted in the Study Area within territorial waters could be transported ashore but would not affect the attainment status of the relevant air quality control regions. The amounts of air pollutants emitted in the Study Area and

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	current, real and existing status of the environment and its resources. We appreciate the opportunity to share our comments in response to the request for comment for the Mariana Islands Training and Testing (MITT) Draft EIS/OEIS. Please contact Ms. Amelia F. De Leon GCMP Planner at (671) 475-9669 or myself at Telephone No. (671) 472-4201, if you have any questions regarding our comments.	subsequently transported ashore would be minor because (1) the pollutants are emitted over large areas (i.e., the Study Area is an area source), (2) the distances the air pollutants would be transported are often large, and (3) the pollutants would be substantially dispersed during transport. The criteria air pollutants emitted over non-territorial waters within the Study Area would be dispersed over vast areas of open ocean and thus would not cause significant harm to environmental resources in those areas. The Navy has been implementing a marine species monitoring plan since 2009 which is comprised of marine mammal and sea turtle monitoring throughout the MITT Study area. In addition, marine species monitoring reports are posted on www.navymarinespeciesmonitoring.us and www.mitt-eis.com. In addition, in an effort to share Navy-funded studies on installations and ranges with interested stakeholders, the Navy will periodically post natural resource technical reports on project/program websites.
CNMI Division of Historic Preservation Department of Community and Cultural Affairs (CNMIDoHPD) - 1	Dear Sir/Madam: We have reviewed the Cultural Resources section of the MITT DEIS/OEIS and have the following comments. Most generally, the CNMI's historic and cultural resources are inadequately considered and/or accounted for in the MITT DEIS/OEIS and additional historical and archaeological survey work should be undertaken to preserve and protect these resources. In addition, the additional testing and training activities proposed under the MITT DEIS/OEIS are as acknowledged simply an extension of the military's activities (both on-going and planned) under the Guam-CNMI Relocation and the MIRC Projects and therefore the "accumulated effects" of the military's activities are inadequately considered and/or accounted for in the MITT DEIS/OEIS.	No additional historical or archaeological surveys will be required as a result of the Proposed Action. However, in accordance with stipulation III.B (Training Program Revisions) of the MIRC Programmatic Agreement (PA), if any introduction of forces or maneuvers that do not comply with the general or area specific stipulations of the PA occur, the DoD representative, the 36th Wing, and any other DoD unit training within the MIRC will notify, coordinate, and consult with the appropriate HPOs and the NPS (if an NHL is involved) on a case by case basis. The actions in the EIS/OEIS have been evaluated for cumulative actions. Chapter 4 (Cumulative Impacts) provides an extensive discussion of the assessment of cumulative impacts (or cumulative effects). The MIRC PA also addresses cumulative effects in stipulation V (Field Monitoring and Report Submission) and specifically for the Tinian National Landmark in stipulation IV.B.4.d.

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	Moreover, the piecemeal and segmented approach to the military's proposed activities in and near locations registered as National Historical Landmarks as embodied in the DEIS/OEIS are inappropriate and must be properly addressed in the Final Environmental Impact Statement before any Record of Decision is made.	
CNMIDoHPD - 2	Specifically, on page 3.11-1 under Preferred Alternative (Alternative 1), third to the last paragraph, the DEIS/OEIS mentions conservation measures and procedures identified and described in 2009 Mariana Islands Range Complex Programmatic Agreement. These conservation measures and procedures should be indicated in this paragraph since it is repeatedly mentioned in this document and is important for the readers to have them readily available. Third line in the third paragraph under the introduction should read; archaeological resources also include human remains which are sacred and can be viewed as traditional cultural resources. On page 3.11-2, under Identification, Evaluation, and Treatment of Cultural Resources, numerous laws, acts, and regulations are referenced which is good. However, what these laws, acts, and regulations require of the federal agencies for protection and preservation of cultural resources should be summarized in this section. The third paragraph that briefly states what Section 106 requires of the federal agencies is good. Beginning in the last sentence of page 3.11-2 to 3.11-3 it talks about regulations and guidelines for submerged historic resources such as Sunken Military Craft Act and Archaeological Research Permit Application on Ships and Aircraft Wrecks,	The Final EIS/OEIS was revised to list the 2009 PA conservation measures. The Final EIS/OEIS was also revised to note that human remains may be considered sacred. While the Sunken Military Craft Act and Archaeological Research Permit Application on Ships and Aircraft Wrecks are not applicable to the analysis, the following is a summary with a link that includes more detail. The Sunken Military Craft Act (Public Law 108-375, 10 U.S.C. 113 Note and 118 Stat. 2094-2098) became law on October 28, 2004, and establishes the protection of sunken U.S. military ship and aircraft wherever located, provides for the protection for the graves of lost military personnel and sensitive archaeological artifacts and historical information, codifies existing case law (which supports Federal ownership of sunken U.S. military ship and aircraft wrecks), provides a mechanism for permitting and civil enforcement to prevent unauthorized disturbance, and encourages the Secretary of State, in consultation with the Secretary of Defense, to enter into bilateral and multilateral agreements with foreign countries for the protection of sunken military craft. This Act does not affect salvage of commercial merchant shipwrecks or recreational diving, does not impact commercial fishing or the laying of submarine cables, and does not relate to the routine operation of ships. Section 1402(C)(1) indicates that the Sunken Military Craft Act doesn't apply to actions undertaken by the United States. (http://www.history.navy.mil/branches/org12-12a.htm). Department of Navy (DoN) ship and aircraft wrecks will be left in place unless artifact removal or site disturbance is justified and necessary to protect DoN ship aircraft wrecks, to conduct research, or provide public education and information. While the Naval History & Heritage Command (NHHC) prefers non-destructive, in situ research on DoN ship and aircraft wrecks, it recognizes that site disturbance or artifact recovery is

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	however, they do not indicate what they mean or require.	sometimes necessary and may be permitted, subject to conditions specified by NHHC (http://www.history.navy.mil/branches/org2-a4.htm).
CNMIDoHPD - 3	Some Conventions applicable to submerged cultural resources such as 1982 Convention of the Law of the Sea and 2001 Convention on the Protection of Underwater Cultural Heritage do not provide what they require or mandate. These should be at least briefly summarized like what is stated for NEPA and the National Historic Preservation Act on page 3.11-4 in which an EIS must consider the adverse and beneficial effects of a proposed federal action on historical and cultural resources and Section 106 which requires federal agencies to take into account the effects of an undertaking on historic properties listed or eligible for inclusion to the National Register of Historic Places. On page 3.11-4 under Data Sources mentions information on cultural resources were derived from a variety of management plans, archaeological and architectural surveys, archaeological testing reports, etc. These documents need citations. On page 3.11-17 under Saipan, states that the leased pier space consisting about 100 acres is highly developed and any previously existed cultural resources have been disturbed or destroyed and no cultural resources are likely to occur. This may be true to some extent however, there have been many instances in Guam and CNMI where certain places have been disturbed numerous times, but, each time a project takes place in those areas, portions of intact soil layers containing cultural properties are discovered. Therefore, this area should not be totally free of archaeological attention.	The 1982 United Nations Convention of the Law of the Sea and 2001 Convention on the Protection of Underwater Cultural Heritage have not been ratified by the United States and are not applicable to this NEPA analysis. However, the following information and links are provided: The 1982 United Nations Convention of the Law of the Sea is the comprehensive international treaty for coastal state regulation of all uses and areas of the sea, including the air space above and the seabed below (coastal nations are referred to as "states" for purposes of this discussion). It provides the legal framework for determining the authority, rights, and responsibilities regarding activities in the marine environment. Certain provisions may be relevant to the protection and management of submerged cultural resources. These include (1) the jurisdiction and authority of nations in different marine areas, (2) the limits on coastal state jurisdiction, (3) the rights of passage and access, and (4) the obligations and duties of coastal states to protect and preserve submerged cultural resources and other resources in the marine environment. (http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf.) The 2001 Convention on the Protection of the Underwater Cultural Heritage defines procedures for notification and protection of underwater resources in territorial waters, contiguous zones, Exclusive Economic Zones and the continental shelf, and the open ocean. Article 13 specifically allows that warships and other government ships or military aircraft with sovereign immunity, operating for non-commercial purposes, undertaking their normal mode of operations and not engaging in activities directed at underwater cultural heritage, shall not be obliged to report discoveries of underwater cultural heritage. (http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/2001-convention/official-text/) The data sources used for the information on cultural resources are cited in Tables 3.11-1 and 3.11-2, and references are provided at the end of Section 3.11. Leasing the pier

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		does not affect historic properties, therefore no surveys are required. In addition, the Proposed Action at the pier has no ground disturbance and therefore do not affect historic properties.
CNMIDoHPD - 4	Under Known Wrecks, Obstructions, or occurrences (within United States Territorial Waters) on page 3.11-16 previous archival research and literature review indicate that at least 19 submerged historic resources exist within Tinian waters, however only locations of 9 are known leaving 10 locations yet to be determined. For Saipan, at least 51 submerged cultural resources exist around Saipan waters but only the locations of 36 have been determined. That leaves 15 submerged historic resources locations within Saipan waters undetermined. For Rota, at least 12 submerged cultural resources exist within waters around Rota but only locations of 7 have been identified. That leaves 5 locations undetermined.	No additional historical or archaeological surveys will be required as a result of the Proposed Action. However, in accordance with stipulation III.B (Training Program Revisions) of the MIRC Programmatic Agreement (PA), if any introduction of forces or maneuvers that do not comply with the general or area specific stipulations of the PA occur, the DoD representative, the 36th Wing, and any other DoD unit training within the MIRC will notify, coordinate, and consult with the appropriate HPOs and the NPS (if an NHL is involved) on a case-by-case basis. The actions looked at within this EIS/OEIS have been evaluated for cumulative actions. Chapter 4 (Cumulative Impacts) provides an extensive discussion of the assessment of cumulative impacts (or cumulative effects). The MIRC PA also addresses cumulative effects in stipulation V (Field Monitoring and Report Submission) and specifically for the Tinian National Landmark in stipulation IV.B.4.d.
CNMIDoHPD - 5	Throughout the document it is repeatedly stating that the Navy will routinely avoid locations of known obstructions which include submerged historic resources. The main concern is the locations of submerged cultural resources that have not been determined which trainings and testing may be conducted. Therefore underwater archaeological survey must be implemented within the waters around Tinian, Saipan, and Rota in an effort to determine the locations of these submerged cultural resources. The results of this underwater survey along with the already known locations of submerged cultural resources will be very important tools for determining safe areas for training and testing programs. If you have any questions, please call John Palacios at CNMI Historic Preservation Office at (670) 664-2121 or 2125	No additional historical or archaeological surveys will be required as a result of the Proposed Action. However, in accordance with stipulation III.B (Training Program Revisions) of the MIRC Programmatic Agreement (PA), if any introduction of forces or maneuvers that do not comply with the general or area specific stipulations of the PA occur, the DoD representative, the 36th Wing, and any other DoD unit training within the MIRC will notify, coordinate, and consult with the appropriate HPOs and the NPS (if an NHL is involved) on a case by case basis. The actions looked at within this EIS/OEIS have been evaluated for cumulative actions. Chapter 4 (Cumulative Impacts) provides an extensive discussion of the assessment of cumulative impacts (or cumulative effects). The MIRC PA also addresses cumulative effects in stipulation V (Field Monitoring and Report Submission) and specifically for the Tinian National Landmark in stipulation IV.B.4.d.

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Commonwealth of the Northern Mariana Islands Coastal Resources Management (CNMICRM) – 1	Hafa Adai, The Commonwealth of the Northern Mariana Island's (CNMI) Coastal Resources Management Office (CRM) has received and reviewed the Mariana Islands Training and Testing Draft Environmental Impact Statement/Overseas Environmental Impact Statement (DEIS/OEIS). CNMI's Public Law 15-34 entitled the "Coastal Resources Management Act" grants CRM regulatory authority towards activities within its jurisdictional territory that can impact the coastal resources of the CNMI. It is the CRM Program's mission to maintain each resident's constitutional right to a clean and healthful environment by providing effective interagency collaboration, permitting and enforcement, monitoring, outreach and education, and restoration. CRM is concerned with the environmental impacts of the proposed training and testing activities on coastal resources. These impacts include: mass wasting and sedimentation as a result of bombing activities on Farallon de Medinilla and the secondary impacts on endangered species, nesting seabirds and nearshore reefs; impacts from military expended materials on water quality, physical and chemical impacts on marine habitats; effects of sonar and torpedo testing on marine mammals; the effects of amphibious landing activities on sea turtle nesting on the beaches of Tinian; impacts of bombing activities on Farallon de Medinilla on seabird nesting colonies; effects of activities on marine vegetation including seagrasses; numerous impacts on coral reefs; impacts on fish populations; impacts on terrestrial species; effects on cultural resources on Farallon de Medinilla that have been ignored; the impacts of restricted areas on recreational and commercial fishing, transport between islands, and tourism;	Thank you for your participation in the NEPA process. Your comment has been broken down into component parts to ensure that all comments provided in your letter are addressed. The EIS analyzed the following resources using best available data: sediment and water quality, air quality, marine habitats, marine vegetation, marine invertebrates, marine mammals, sea turtles, marine birds, terrestrial species and habitats, cultural resources, socioeconomics, and public health and safety.

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	and the lack of a true cumulative impacts analysis. CRM has identified serious deficiencies in the DEIS/EIS that need to be addressed. First, there are numerous factual errors and contradictions in the document. Second, the document often fails to draw on the "best available data and information" to support its findings. Third, the military proposes to drastically increase the ordinance used on Farallon de Medinilla; however, the document does not address the near-certain environmental effects of the increase in bombing activities: mass wasting, erosion, sedimentation, and secondary impacts on marine birds and nearshore marine biota. Fourth, claims made about "no effects" in this document contradict claims about similar activities in previous military EIS documents. Finally, the DEIS/EIS repeatedly concludes that military activities in the study area will have "no effects" on the environment, but the DEIS/EIS often fails to support its conclusions with data. The CRM submits the attached general and specific comments in response to the request for review of the DEIS/OEIS.	
CNMICRM – 2	The CRM has a Coastal Zone Management Act (CZMA) program approved by NOAA. A Federal Consistency Determination (FCD) with respect to the activities outlined in this DEIS/OEIS must be submitted to the CRM for review as mandated by the Coastal Zone Management Act, Section 307 of the CZMA (16 USC § 1456). Any activity by a federal agency that will have reasonably foreseeable coastal effects on any land or water use or natural resource of the coastal zone of the CNMI (the coastal zone meaning every island of the CNMI in their entirety) must be consistent to the maximum extent practicable with the enforceable policies of the CRM's coastal management program, Section 307 (c) (1) (a), 15 CFR Part 930. CRM expects the DOD to submit a federal consistency determination for the proposed activities included in the DEIS/OEIS at least 90 days prior to the action.	The Navy has submitted a Coastal Consistency Determination to CNMI Coastal Resources Management Office for the proposed military training and testing activities. The consistency determination was prepared in accordance with the CNMI Coastal Resources Management Act (CRMA) and based on the applicability of enforceable policy elements to the Proposed Action. Based on the analysis for the CNMI, the Navy determined that the Proposed Action is consistent to the maximum extent practicable with the applicable enforceable policy elements of the CNMI CRMA.

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CNMICRM – 3	CNMI Coastal Resources Management Office Comments on MITT DEIS/OEIS **General comments:** The CNMI is now sovereign over all submerged lands three miles from the mean high tide mark of each of its islands. See Public Law 113–34 (113th Congress). Please analyze how the proposed activities will impact the submerged lands belonging to the CNMI.	The MITT EIS/OEIS analyzes impacts from the proposed training and testing activities on marine resources from shore to 3 nm and beyond to the boundaries of the MITT Study Area which includes submerged lands under the jurisdiction of the Government of the CNMI. Based on the consistency determination, the Navy determined that the Proposed Action is consistent to the maximum extent practicable with the applicable enforceable policy elements of the CNMI CRMA. On 20 January 2015, the CNMI CRM Office issued a Conditional Concurrence.
CNMICRM – 4	With respect to the vessel transit corridor, in Section 2.1 of the DEIS/OEIS it is stated that *"The route depicted in Figure 2.1-1 is a direct route between the MIRC and the HRC, making it a quick and fuel-efficient transit. The depicted transit corridor is notional and may not represent actual routes used. Actual routes navigated are based on a number of factors including, but not limited to, weather, training, and operational requirements; however, the corridor represents the environment potentially impacted by the Proposed Action"*. The DEIS/OEIS needs to include the entire area (not a notional line) that could potentially impacted by activities within this corridor which covers any potential route that ships may take. Section 2.1.2 states that the military may *"conduct basic and routine unit level training such as gunnery and sonar training as long as the training does not interfere with the primary objective of reaching their intended destination. Ships also conduct sonar maintenance, which includes active sonar transmissions"*. In order to address potential environmental impacts within the transit corridor as a result of these activities, the DEIS/OEIS must include the actual area that could be impacted.	The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) including the transit corridor where training and testing activities historically occur. Effects from military training and testing activities within the MITT Study Area (including the transit corridor) were analyzed in Chapter 3 of the EIS/OEIS. As quoted in the comment, the transit corridor described in the EIS is representative of the open-ocean, deepwater environment extending between the MIRC and the HRC. The biological resources occurring in that environment along the transit corridor are expected to be consistent with limited variation such that a representative analysis provides a reasonable estimate of potential impacts. Furthermore, as quoted in the comment, military vessels transiting between MIRC and HRC would choose the most direct route (i.e., a route within the transit corridor) to minimize transit time and fuel costs. Any deviation from the most direct route would be minimized to limit additional fuel costs and transit time; however, specific routes cannot be predicted, because those factors that might result in a deviation from the route are not predictable (e.g., the weather). This approach to analyzing potential effects on the environment between two range complexes using a transit corridor was applied in the HSTT EIS/OEIS, and the approach has been approved by NMFS.
CNMICRM – 5	Table 2.8-1 of the DEIS/OEIS gives ordinance use on Farallon de Medinilla (FDM), summarized in Table 1 below.	The Navy explored a variety of alternatives and concluded that the three alternatives presented in the EIS/OEIS were the only reasonable

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	Table1. Summary of proposed ordinance use on FDM per year (adapted from Table 2.8-1). Range activity No action Alternative 1 Alternative 2 Grenade/mortar 100 600 600 Small caliber 2900 18000 18000 Naval surface fire – NEPM rounds 0 1800 1800 Naval surface fire – explosive rounds 800 1000 1000 Explosive missiles 60 85 85 Explosive rockets 0 2000 2000 Gunnery – small caliber 0 24000 24000 Gunnery – medium caliber 0 94150 94150 Gunnery – explosive medium caliber 21500 17350 17350 Gunnery – explosive large caliber 200 200 200 Bomb – NEPM 2800 2670 2922 Bomb - explosive 2150 6242 6821 Apart from relatively minor differences in numbers for NEPM and explosive bombs, the numbers given for alternative 1 and 2 are identical (Table 1). The DEIS/OEIS needs to provide and consider two true alternatives for activities on FDM. There are numerous significant errors throughout the document. Some are noted here: • Several NEPM (non-explosive practice munitions) are shaded in Table 2.8-1, which according to the note in the title indicates they are explosive. Please edit this table to make clear what is explosive and what is not. • Table 2.8-1 makes it clear that numbers of ordinance given are per year. However elsewhere in the document (eg Table 3.0-22) it is not made clear that figures of ordinance use increases are per year. No mention of time periods is given elsewhere. Please edit the document so that these figures are not misleading by clearly indicating that these figures are per year, not total.	alternatives that met training and testing requirements. The development of alternatives and discussion of alternatives eliminated from further consideration is presented in Section 2.5 (Alternatives Development). In the development of the alternatives, required training and testing activities were taken into account and in some cases for some training activities, there are no differences between Alternative 1 and Alternative 2 in terms of annual activities. In Tables 2.8-1, 2.8-2, and 2.8-3, the grayed boxes have been edited to clarify for the reader what is explosive and what is non-explosive. Table 3.0-22 has been modified to clarify that ordnance numbers are for annual activity.

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CNMICRM – 6	• In comparison to Table 2.8-1, Table 3.0-22 has different names for the different categories of ordinance, and groups some together, making it hard to compare. This deficiency occurs elsewhere throughout the document and needs to be corrected. It would make the DEIS/OEIS less confusing and much easier for review purposes to keep the names the same throughout the document. There is conflicting information between the two tables on what is classed as "explosive" and these mistakes must be corrected. • The depth at which ship hulks are to be sunk varies from "greater than 6000 ft" (Section 3.3.3.2.2) to "greater than 9842.7 ft" (Section 3.7.3.2.2) to "approximately 10000 ft" (Section 3.8.3.3.2.2). These are greatly different numbers and CRM needs accurate and consistent data in order to comment on potential effects.	The Navy understands that it can be difficult to understand the differences between the various tables. For example, some tables provide information by type, stressor, or activity. The Final EIS/OEIS has been revised to correct discrepancies in conflicting information. For example, sinking exercises occur greater than 12 nm from shore and at depths greater than 6,000 feet.
CNMICRM – 7	• Section 3.6.3.1.2.4 describing Alternative 1 states: *"At FDM, the use of explosive munitions in bombs would increase by a factor of three"* However, in Section 3.10.3.1.1.2, it is stated that for Alternative 1: *"At FDM, the use of explosive munitions in bombs would increase by 98 percent"*. This claim of an increase in explosive munitions in bombs of 98% contradicts Table 2.8-1 and Table 3.0-22, which state that explosive bombs would increase from 2150 to 6242 in Alternative 1, as well as Section 3.6.3.1.2.4 which states they would increase by a *"factor of three"*. Please correct this error and check the DEIS/OEIS for other misleading statements.	The text has been corrected to be consistent with Table 2.8-1.
CNMICRM – 8	It is exceptionally alarming how many times throughout the DEIS/OEIS that identical effects statements for the no action, alternative 1 and alternative 2 impacts are presented, with little to no analysis or supporting data. It is simply unacceptable that the massive increases in proposed activities will have no additional environmental effects. The DEIS/OEIS does not adequately assess the potentially significant environmental impacts of the proposal. Examples of these	There are valid reasons why after a thorough analysis, using the best available science, similar or even identical effects would be expected across three different alternatives. Primarily, many activities have little or no effect on particular resources. There are a number of activities proposed by the military that would have little or no effect to a given resource. So it would make sense that even significant increases in these activities would result in a similar conclusion of no or little impact. For example, the military is proposing to increase Air Intercept Control (AIC)

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	failures to recognize environmental effects are given in the "Specific Comments" section below. Section 3.0-2 states that the DEIS/OEIS used the *"best available data and information in order to compile the environmental baseline and environmental consequences evaluated in Chapter 3"*. This is repeatedly shown to be untrue:	activities from 320 annual events in the No Action Alternative to 5,300 in Alternative 2, an increase of more than 1,500 %. Because this activity involves aircraft flying at high altitudes (well above 3,000 ft. with no ordnance, no sound or expended materials in the water), it makes sense that this activity would have no impact on marine species analyzed. Also, the effects statements or conclusion statements used in the EIS/OEIS can be broad in their coverage. For example, as described in the EIS/OEIS for impacts on corals in Section 3.8.3.1 (Acoustic Stressors), because "Non-impulse sounds may impact individual marine invertebrates and groups of marine invertebrates close to a sound source, but they are unlikely to impact populations or subpopulations," the ESA conclusions for the No Action Alternative stated that "sonar and other active acoustic sources associated with training activities as described under the No Action Alternative may affect, but are not likely to adversely affect, any of the coral species." For Alternative 2, although sonar use is proposed to increase, and more individual marine invertebrates might be impacted, the conclusion would still be true that sonar is unlikely to impact populations or subpopulations. Therefore, the Alternative 2 conclusion of "may affect, but are not likely to adversely affect, any of the coral species" remains the same, as it would be the same for a wide range of sonar activities, so long as the effects didn't rise to the level of impacting populations or subpopulations of invertebrates.
CNMICRM – 9	• The DEIS/OEIS includes a map of FDM (Figure 3.6-6) that shows impact areas and seabird colonies, from Lusk et al. (2000). This paper was based on data collected during a 5.5 hour site visit completed in 1996. Seventeen years has since passed since this site visit was made, and the island has been under constant heavy bombardment, as well as other factors which may impact seabird colonies including tropical storms. More recent information is available (helicopter surveys of seabird colonies were completed monthly by the military until 2009, then quarterly since). Therefore the DEIS/OEIS is not based upon the "best information available" and does not adequately assess	The rookery locations observed by Lusk in 1996 and reported in Lusk et al. (2000) appear to be similar to updates made based on the 17 years of data collection conducted by the Navy. The Navy has updated the rookery map based on field observations by biologists during the periodic surveys (previously monthly, now quarterly surveys) of FDM. In response to this comment, the following changes have been made to the document: (1) revision of the base map used in the rookery map figure of FDM by using a high-resolution recent aerial photograph, (2) update on this map of the rookery locations, (3) update of Table 3.0-1 to properly reference the new data. It should be noted that great frigatebird nesting has not been reported during any of the Navy

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	the potentially significant environmental impacts of the proposal. • Table 3.0-1 states that Figure 3.10-2 shows "vegetation type" sourced from "Google Earth 5.1". However Figure 3.10-2 actually only shows a map of critical habitat for the Rota White-eye and Mariana Crow on Rota. It does not show vegetation types on Rota or anywhere else in the CNMI.	monitoring surveys conducted since 1999. Table 3.0-1 has been corrected in the Final EIS/OEIS. It should be noted that the majority of land based training will occur on Guam, and the greatest impacts on terrestrial environments would occur on FDM due to strike warfare activities. On Rota, Saipan, and Tinian, no vegetation impacts are anticipated from the proposed action. Therefore, there was no need to map vegetation communities that the military would not impact. The habitats are adequately described in the EIS/OEIS to characterize the general affected environment.
CNMICRM – 10	• Furthermore, Google Earth is not the "best available data" on vegetation, even if the satellite imagery had been included for islands of the CNMI. The US Forest Service has available recent vegetation maps of Saipan, Tinian and Rota. Figure 3.10-3 shows vegetation types and uses this information to assess effects in Guam. Thus the DEIS/OEIS is deficient and fails to adequately assess the potentially significant environmental impacts of the proposal. • Figure 3.10-4 has a crude comparison of vegetation on FDM using a black and white aerial photograph taken in 1944 with a color satellite image taken more recently. The figure states the more recent image is from 2012. This does not appear to be true. The image is identical to the one that appears in Google Earth and that image dated is 10/10/2003, not 2012. This is 9 years earlier than what is claimed in the figure caption. The Department of Defence (DoD) have been using the island as a firing range for decades, and furthermore have been conducting surveys and monitoring at this location. In the 1999 Final EIS for the Military Training in the Marianas, it is stated in response to the Marianas Audubon Society's comments that *"Photo documentation during the (seabird) surveys will be used by comparison to detect significant changes that may occur in vegetation habitat"*. However this analysis, to the best of our knowledge, has not been	The Navy included the historical aerial photograph to show the loss of canopy over the decades prior to and during use of the island as a military range. The figure has been updated with a more recent aerial image supplied by Joint Region Marianas to demonstrate the loss of forest canopy with the historical aerial image. It should be noted that there is no discernable difference between 2003 and 2012. On Rota, Saipan, and Tinian, no additional vegetation impacts are anticipated from the proposed action. Therefore, there was no need to map vegetation communities that the military would not impact. In addition, the Navy has completed Section 7 ESA consultation with the U.S. Fish and Wildlife Service (USFWS) to adequately address impacts on ESA-listed species and habitats in these locations. It should be noted that the Navy has conducted surveys at FDM for the past 17 years, and a statistical analysis of these surveys is now included in the Final EIS/OEIS.

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	performed, nor has the "photo documentation" even been presented here. CRM maintains that DoD has not used the "best available data and information" available to describe vegetation change over the years of bombing activities and that the DEIS/OEIS must analyze and present the data and information that it has available.	
CNMICRM – 11	• There are no benthic habitat maps provided and analyzed for effects on FDM in the DEIS/OEIS, yet such maps are given in other DoD publications such as DoN (2005) (see Figure 3 in the "Marine invertebrates" section below) • The document does not address impacts on migratory shorebirds. For example. Bristle-thighed Curlews have been observed on FDM (DoD 1999) but these are not mentioned in the current document.	More detailed habitat maps have been provided is Section 3.3 (Marine Habitats), Section 3.7 (Marine Vegetation), and Section 3.8 (Marine Invertebrates) of the Final EIS/OEIS. Migratory shore birds are included in the analysis. Section 3.6.2.12 (Major Marine Bird Group Descriptions) includes numerous family groups with representative examples of each species. For example, Section 3.6.2.12.4.7 (Scolopacacidae [Sandpipers and Curlews]) includes a group level description of curlews. Please see Section 3.6.4.3 (Migratory Bird Treaty Act Determinations) for the Navy's overall impact assessment that proposed military training and testing activities would not adversely impact populations of birds. This includes all bird species protected under the MBTA, including migratory shorebirds.
CNMICRM – 12	The DEIS/OEIS does not provide any kind of indication on the scheduling of the proposed activities on Saipan, Rota, Tinian and FDM. Accurate information about how often the training exercised are planned for or envisioned, when will they occur, and over what period of time the activities will take place, are essential for properly gauging environmental impacts. It is impossible to evaluate the effects of the proposed activities without having these critical details. For example, Table 2.8-1 gives the number of activities per year of each range activity, but the CNMI Costal Resource Management Office needs to know if these are separate or simultaneous activities for each location (ie what is the total number of activities per location), and the length of time for each activity in each location in order to assess the effects. Section 3.10.2.1.5 states that bombing on FDM has changed the vegetation from brush and tree canopy cover, especially in	Tables 2.8-1, 2.8-2, 2.8-3, and 2.8-4 provide a summary of baseline and proposed training and testing activities. Each table includes information on the location or locations where the activity may occur within the Study Area. Most activities could occur during any time of the year based on training and testing requirements. The analysis of potential impacts presented in the EIS accounts for this possibility. For example, if a sonar event could occur at any time during the year, as opposed to occurring in just one season, a scenario for this event is analyzed in Naval Acoustic Effects Model for each season. Tables 2.8-1 through 2.8-4 also indicate the number of times an activity would occur annually and in many cases the distance from shore that an activity would occur. For example, the Amphibious Warfare activity, Noncombatant Evacuation Operation, would occur up to five times per year on, potentially, Tinian, Rota, or Guam. The exact location or time of year when the activity would occur cannot be predicted, but the analysis conservatively considers that the activity could occur five times at each location. Additional details describing these activities in support of the analysis

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	the areas where higher levels of bombing activities have occurred. CRM requests that surveys or the data that these conclusions are drawn from be identified and made available for review.	are provided in Appendix A (Training and Testing Activities Descriptions), including the typical duration of the activity. The statements in the EIS/OEIS regarding canopy cover changes have been made based on aerial image comparisons. No quantitative studies are available for vegetation succession on FDM. A report with the aerial imagery will be made available to the public when final on the MITT website (www.mitt-eis.com).
CNMICRM – 13	It was concluded in the Military Training in the Marianas FEIS (DoD 1999) that Unai Dankulo and Unai Chulu were not suitable for AAV landings, after evaluation of hydrographic and marine biological surveys conducted by the Navy in 1994 and 1996 determined *"potential impacts to nearshore and barrier reef coral and possible impact damage to the vehicle itself"* (Section 4.2.1.4). Only Unai Babui was deemed suitable for such activities due to environmental concerns. However both Unai Dankulo and Unai Chulu are included in this DEIS/OEIS for AAV landing exercises. CRM questions why these two beaches were ruled out in previous documents but are considered for the same activities here. CRM also questions why the DoD needs to use three different beaches for these landing activities – why they cannot just choose one single beach that would suffer the least amount of environmental impact.	The MITT Final EIS/OEIS carries forward without change the programmatic analysis for amphibious landings in the MIRC EIS/OEIS. Prior to any amphibious over-the-beach training activity conducted with larger amphibious vehicles such as Landing Craft Air Cushions (LCACs) or Amphibious Assault Vehicles (AAVs) (e.g., Amphibious Assaults), a hydrographic survey and a beach survey would be required. The surveys would be conducted to identify and designate boat lanes and beach landing areas that are clear of coral, hard bottom substrate, and obstructions. LCAC landing and departure activities would be scheduled at high tide. In addition, LCACs would stay fully on cushion or hover when over shallow reef to avoid corals and hard bottom substrate. See Section 3.8.3.3.1 (Impacts from Vessels and In-Water Devices) for additional details.
CNMICRM – 14	CRM would like to know if all of the "conservation measures specific to Farallon de Medinilla" outlined in the DoD Record of Decision for the Mariana Islands Training Complex have been carried out. For example, has rat eradication taken place? Have Has the Navy conducted density and abundance surveys of the Micronesian Megapode every five years? Has the Navy undertaken any kind of range maintenance on FDM?	The Navy reinitiated Section 7 consultation with the USFWS in 2012 regarding conservation measure implementation on FDM. The outcome of the consultation was an amendment that covered the following: Eradication of rats on FDM was determined to not be feasible given the terrain of the island. Furthermore, it was determined that it would also not provide the conservation benefit to the megapode originally thought. Therefore, USFWS and the Navy agreed that this conservation measure would be replaced by ungulate removal on Anatahan, providing a conservation benefit to the overall population of megapodes. This replacement project was completed in 2013. FDM was surveyed for megapodes using playbacks in 2013. 11 megapodes were

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		detected. The Navy conducted range clearance in 2011 and 2013. Megapode surveys were conducted after those clearance activities and no adverse effects were noted. Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the Final EIS/OEIS lists and describes conservation measures included in the USFWS Biological Opinion.
CNMICRM – 15	**Specific comments** **Effects of proposed bombing activities on FDM mass wasting, erosion, and sedimentation** FDM is divided into zones: the section to the north of the "no fire line" is designated the "no drop zone". The rest of the island south of the "no fire line" is divided into the "impact zone 1" (inert ordnance only), "impact zone 2" (live/inert ordnance) and "impact zone 3" (live/inert ordnance). The draft DEIS/OEIS states that the no-fire line, firing direction and live fire and inert range boundaries would remain the same as before. Both Alternative 1 and Alternative 2 (Table 2 of this document) include near-identical massive increases in explosive detonations on FDM over the current level of activities (the no action alternative). CRM is especially concerned with the effects of proposed ordinance use on FDM on mass wasting, vegetation loss, erosion and sedimentation. The DEIS/OEIS describes pollution effects (chemical) but not the physical effects of sedimentation as a result of military activities in the study area. There is no mention of effects of sedimentation on near-shore coral reefs as a result of training activities on land. These effects were mentioned in the Mariana Islands Range Complex Final Environmental Impact Statement/Overseas Environmental Impact Statement (MIRC FEIS/OEIS). These coastal effects must be included in the MITT FEIS/OEIS.	It is correct that both Alternative 1 and Alternative 2 include near-identical increases in explosive detonations on FDM over current activities. The Final EIS/OEIS description of target areas and ordnance use has been improved, based on a revised COMNAVMARIANAS 3500.4A (Marianas Training Manual, dated October 2013) and the MIRC Operational Range Clearance Plan (June 2013). The Final EIS/OEIS has been updated and includes analysis of mass wasting and erosion on FDM. Historical photographs and direct observations during dive surveys conducted since 1999 off of FDM are considered in the analysis. The report information has been added to Section 3.1 (Sediments and Water Quality), with specific new text in Section 3.1.3.1.5.3 (Farallon de Medinilla Specific Impacts) in the Final EIS/OEIS. Information regarding potential sediment runoff from military use of FDM has been added to the sediments and water quality section of the MITT Final EIS/OEIS. Information regarding how erosion from FDM may impact specific resources has been added to particular resource sections (e.g., marine communities, marine invertebrates, fish, sea turtles, and marine mammals). Further, the Final EIS/OEIS Section 3.1.3.2 (Metals) (and elsewhere in specific resource sections) now cites the Mariana Islands Range Complex Operational Range Clearance Plan, dated June 2013. This plan outlines specific procedures and schedules for range clearance on FDM. The siting of targets and impact areas consider protections to relatively higher quality habitat in the northern portion of the island, the narrow land bridge, and various limestone cave features along the coast. In other words, the Navy believes that the location of the impact areas offer the least impacts to fulfill military mission

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	Satellite imagery and oblique photographs show there have been significant changes to the morphology of FDM, apparently through mass wasting along the eastern cliff lines. The land bridge (Figure 1) shows significant signs of mass wasting on the eastern side. The southern end of FDM also shows a recent sea cave collapse (Figure 2). The total loss of land mass on FDM since bombing commenced must be presented. Ordinance use can cause erosion both directly by creating large holes and indirectly through the destruction of vegetation. Erosion caused by diminished vegetation can potentially have long lasting effects. Once erosion starts occurring, it is very difficult for vegetation to re-establish and curb the effects. Mass wasting and erosion together can introduce massive amounts of sediments into the surrounding waters. If pushed passed natural thresholds of stress, reef systems can be irreversibly altered by sedimentation. Mass wasting is causing irreversible changes to the size and shape of the island itself. It will have negative consequences for the seabird rookeries that are found on the cliff faces and cliff tops, forcing them further and further into the live fire ranges. There are no ongoing monitoring data to assess the effects of current and planned bombing activities on erosion, sedimentation and mass wasting on FDM mentioned in the DEIS/OEIS. This needs to be addressed in the Final EIS/OEIS.	requirements of the range. In addition, Section 3.1.3.1.5.3 (Farallon de Medinilla Specific Impacts) has been added to the MITT FEIS/OEIS to report direct observations for 13 years' worth of dive survey information. An additional figure (Figure 3.1-1) has also been added to the FEIS/OEIS that shows the location of survey transects that include areas mentioned in the comment (e.g. areas near the land bridge, eastern clifflines of FDM, southern end of FDM including an apparent sea cave collapse). Based on these direct observations of damage off the coast of FDM, the majority of disturbances to the seafloor sediments, substrates, and mass wasting of FDM can be attributed to typhoons and storm surges. Further, damage attributed to military training activities recovered within 2 to 3 years at the same rate of damage associated with natural phenomenon. The 2012 dive report is available on the project website located at http://www.MITT-EIS.com.
CNMICRM – 16	*Section 3.1.2.3 of the Mariana Islands Range Complex Final Environmental Impact Statement (2010) states that "clear evidence of ordnance impacts exists on cliff tops and faces on certain sections of the island that may contribute to erosion, runoff, and sediment pluming (DoN 2008). Shore bombardment of barren cliffs on the west side of the island may have weakened the exposed limestone and contributed to erosion of the cliffside. The eastern cliffs near Zone 2 (land*	Please see response to CNMICRM-15.

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	bridge) are avoided during shore bombardment activities (DoN 2008). Shore bombardment targets involving use of ordnance are located on the cliffs along the western side of the island. The use of explosive material on the surface of the cliffs is subject to control that avoids known seabird rookeries. Areas subject to ordnance use are restricted to prevent disturbance and impacts to new areas. Erosion on the western cliffside is controlled by conservation measures and targeting restrictions that are in effect for ongoing training activities.	
CNMICRM – 17	*Typhoons are a natural threat to geologic formations on FDM, because they can produce extremely strong winds, torrential rain, high waves, and storm surges, which in turn can cause extensive flooding. Weathering of soils and coastal formations on FDM has resulted from typhoons. The northern two-thirds of the island are nearly separated from the southern third where the island narrows dramatically (Oceandots 2008)."* The DoN (2008) document is listed in the Reference section of the MIRC FEIS/OEIS as the following: *"Department of the Navy (DoN). 2009. 2006, 2007, and 2008 assessment of nearshore marine resources at Farallon de Medinilla, Commonwealth of the Northern Mariana Islands. Prepared by S.H. Smith and D.E. Marx, Naval Facilities Engineering Command, Pearl Harbor, Hawaii. February."* These reports and/or the data used to make these statements must be included in the Final EIS/OEIS. CRM does not have these reports and we request that these be made available to us to evaluate whether the claim that the mass wasting on FDM is actually a result of typhoon damage. Furthermore we request that a study on the effects of explosives munitions use on mass wasting, erosion and sedimentation on FDM be initiated, with CRM's involvement.	The Final EIS/OEIS has been updated with the most recent dive reports (released in 2013, with dives occurring in 2012), and includes information discussed below. It should be noted that the Navy's analysis of mass wasting and erosion on FDM includes historical photograph analyses and direct observations during dive surveys conducted since 1999 off of FDM. The report information has been added to Section 3.1 (Sediments and Water Quality), with specific new text in Section 3.1.3.1.5.3 (Farallon de Medinilla Specific Impacts) in the FEIS/OEIS. The 1999–2004 surveys were completed by a Navy contractor and a representative from the USFWS, the NMFS and the CNMI. All surveys since 2004 have been performed by the NAVFAC and Expeditionary Warfare Center's Scientific Diving Services (SDS). Direct ordnance impacts upon the submerged physical environment, which were clearly attributable to training activities, were detected in dive surveys conducted in 2007, 2008, 2010, and 2012. Indirect impacts, such as ordnance that skipped or eroded off the island and rock and ordnance fragments blasted off the island, were detected every year. However, natural phenomena such as typhoons, tropical storms, large wave events, tsunamis/micro-tsunamis and earthquakes are the primary disturbances, which shape and modify FDM's physical environment between the intertidal zone and depths of 30 m. During the 2004 survey the dive survey team (which included representatives of stakeholder agencies cited above and a Navy contractor) noted changes to the submerged lands relative to observations made between 1999 and 2003. These physical changes

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		included: (1) fresh boulder/rock slides, (2) submerged rock areas off the southern tip of FDM, that appeared to have been peeled back to expose bright yellow-orange patches of underlying rock, and (3) cracked and broken coral colonies. The 2004 report (released in 2005), stated: "Examination of photographs from 1944 indicate that changes in the geologic structure of the island by erosion and mass wasting…have been going on for decades." No newly submerged cliff blocks were observed between 2005 and 2012. The detonation of live ordnance, and the impact of inert ordnance both act to fracture rock and make the island more susceptible to the impacts of earthquakes, typhoons, and other natural erosional forces. Small to moderate sized (generally < 30 cm) fresh rock fragments have been observed yearly. Many, if not most of these, are clearly the result of training activities. However, the number and size of these items and the locations in which they occur have not resulted in any significant changes to the topography or significant adverse impacts on marine biological resources.
CNMICRM – 18 CNMICRM – 19	The comments by the Environmental Protection Agency (EPA) to the MIRC DEIS/OEIS also addressed the issue of mass wasting, erosion and sedimentation in comment Fed 6.4: *"The DEIS well documents the substantial erosion that is occurring on FDM and acknowledges that bombing is contributing to this impact. It states that most of the existing training location have soil conditions that are degraded from ongoing military use (p. 3.1-23), and that many years of live fire training at the Tarague Beach small arms range has resulted in "severely degraded" geological resources (p.3.1-22). The DEIS concludes that surface soil changes would be minimal (p. ES-16) and that impacts to geological resources would not be significant (p. e.1-23) despite the impact assessment criteria that impacts would be significant if the action had the potential to increase erosion by training activities (p. 3.1-1)."* The response to the EPA comment given by the DOD in the MIRC FEIS/OEIS is as follows *"Monthly surveys at FDM have*	Information regarding potential sediment runoff from military use of FDM has been added to the sediments and water quality section of the MITT Final EIS/OEIS. Information regarding how erosion from FDM may impact specific resources has been added to particular resource sections (e.g., marine communities, marine invertebrates, fish, sea turtles, and marine mammals). Further, the Final EIS/OEIS now cites the Mariana Islands Range Complex Operational Range Clearance Plan, dated June 2013. This plan outlines specific procedures and schedules for range clearance on FDM. The siting of targets and impact areas consider protections to relatively higher quality habitat in the northern portion of the island, the narrow land bridge, and various limestone cave features along the coast. The Navy believes that the location of the impact areas offer the least impacts to fulfill military mission requirements of the range. The Navy has conducted aerial photograph assessments of the island using historical photographs dating back to 1944. This effort has supported the 13 years' worth of dive surveys conducted by the Navy with stakeholders and explosive ordnance experts to identify ordnance in the water, document impacts of ordnance deposition and misses of

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	shown that increased erosion is the result of natural causes; storm and wave erosion. Operational changes on FDM, as described in Chapter 2, including reduction of live fire targeting area has reduced the potential for any erosion caused by military activities. Live fire impact area has been reduced from over 100 acres to less than 35 acres, a reduction of approximately two thirds. The discussion in Subchapter 3.1.3.2 for Alternatives 1 and 2 have been revised." There are no studies mentioned in the DEIS/OEIS of the effects of bombing activities on erosion and sedimentation of surrounding waters. The "monthly surveys" of erosion on FDM mentioned in the military response to comment FED6-4 in the MIRC FEIS/OEIS are not mentioned anywhere in this current DEIS/OEIS. CRM requests that the "monthly survey" results mentioned in the response to comment FED6-4 (above) should be made available to CRM, to allow us to analyze whether the operational changes that were referred to in the comments response above are effective in minimizing the effects of mass wasting, erosion and sedimentation and bombing on FDM. The MITT FEIS/OEIS must include the results and conclusions of these monthly surveys. The DEIS/OEIS is deficient without this information included and must be revised. Figure 1. Neck between northern and southern sections of FDM, showing severe cliffline damage. Photo by Shelly Kremer, 2004. Figure 2. Left: Photo of southern end of FDM in May 1994 (from NOAA data) Right: Photo of southern end of FDM October 2003 (from Google Earth), showing massive changes in island morphology on east side of island.	FDM, and discern impacts from natural processes (e.g., typhoons, storm surge, tsunamis) with military activities. The dive surveys at FDM, along with the aerial photograph analysis effort to support the dive surveys provide the best information regarding erosion and mass wasting of FDM. This information has been added to Section 3.1.3.1.5 of the Final EIS/OEIS. The land bridge is not targeted and is clearly delineated in COMNAVMARINST 3500.4A as a special use area. Section 3.10.3.1.1 (Impacts from Explosives and Weapons Firing Noise) in the Final EIS/OEIS discusses the impact areas and shows what activities are allowed in specific impact areas on Figure 3.10-9. The information added to Section 3.1.3.1.5 shows the survey dive tracks which include in-water areas on both sides of the land bridge. Figure 3.1-1 has been added to show the dive tracks. It should be noted that 2004 (the date of the photograph provided as Figure 1 in the CRM comment letter) appears to be after the 2004 Typhoon Ting Ting, one of the few typhoons that have had a direct track across FDM. In-water surveys conducted after Typhoon Ting Ting concluded that cliffline damage (evidenced by rock falls and exposed substrates) were fresh damage and clearly attributable to Typhoon Ting Ting. It should also be noted that complete recovery of the damaged areas were seen within 2 to 3 years from the typhoon event (no visible difference between damaged areas and undamaged areas). The eastern cliff faces are not targeted, as delineated in the COMNAVMARINST 3500.4A.
CNMICRM – 20	**Effects on water quality** The DEIS/OEIS appears to rely on dilution and settling of	Please see response to CNMICRM-15. The Navy applies water quality standards wherever they are applicable.

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	contaminants to keep water quality impacts within federal water quality standards. However, the localized effects of such contaminants could adversely affect many forms of marine biota, potentially harming resources utilized by local stakeholders. Furthermore, the DEIS/OEIS continually mentions that effects to water quality would be short in duration, yet there is no in-depth discussion about possible long-term effects as a results of secondary impacts to the environment, such as sedimentation and bio-accumulation. CRM requests that baseline data and ongoing monitoring be provided in order to assess the localized and long-term effects of water quality contamination on marine biota. For section 3.1.1.1.1.7 *"Other Contributions to Sediments"*, please refer to studies by Denton et al (2010) that show bio-accumulation of toxins such as mercury, arsenic and PCBs in fish caught in the Saipan Lagoon.	In general, there are no applicable standards for the types of potential water quality impacts analyzed in this EIS/OEIS. Residual concentrations are provided when it is possible to calculate them. In the previous MIRC EIS/OEIS, it was noted that "The CNMI Senate requested the Agency for Toxic Substances and Disease Registry (ATSDR) on 19 February 2008 to conduct a public health assessment on FDM of toxic substances released by bombs and the "bioaccumulation of these toxins in consumable pelagic fish." The Agency, in its letter to the CNMI Senate on 24 September 2008 concluded that "pelagic fish caught in the open water are not likely to contain high levels of explosive residues from the neighboring FDM bombing range and will not pose a public hazard to people who eat them." The conclusion is supported by the Agency's "Preliminary Assessment of Pelagic Fish Caught in the Open Pacific" (ATSDR 2008)." Additional information regarding sediment contamination specific to Saipan has been added to the Final EIS/OEIS. References include Morrison et al. (2013) and Denton et al. (2011). The information has been added to Section 3.1.1.1.1.7 (Other Contributions to Sediments) and notes that mercury levels declined in certain fish species after a medical waste incinerator was shut down (based on a USEPA order).
CNMICRM – 21	In Section 3.1.3.1.5.2 *"Unexploded Ordnance"*, it is expected that biological processes would degrade broken munitions. The DEIS/OEIS does not address the concern of accumulation of bio-toxins up the food chain and is therefore inadequately considers potential environmental impacts of the proposed activities. . The DEIS/OEIS cites several studies of marine dump sites and the effects of unexploded ordinance on these environments, but none of the studies are located within the waters surrounding the CNMI. There are a number of marine dump sites within the CNMI. Denton et al. (2010) highlights the need for testing of possible contamination of nearshore fisheries from freshwater runoff originating from formerly-used defense sites. CRM requests that these studies be undertaken	Section 3.1.3.1.5.2 (Unexploded Ordnance) addresses the impacts of unexploded ordnance on water quality and sediments. It is a general discussion about the degradation of munitions from chemical (not biological processes) processes (e.g., corrosion) and its impacts on sediments and the quality of the receiving water. The uptake of chemicals by marine resources from the degradation of ordnance is a secondary impact that is addressed in the various marine resources sections (Marine Habitats, Marine Vegetation, Marine Invertebrates, Fish, Sea Turtles, Marine Mammals). Although there are few specific studies on bioaccumulation in the CNMI, there are other studies cited concerning metals deposition in the marine environment in waters off of military training ranges. For example, Section 3.1.3.2.3 (Impacts from Metals) of the Final EIS/OEIS discusses multiple studies off of Vieques Island in Puerto Rico, Pamlico Sound in

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	to assess the effects of past and proposed military activities on fish and other marine biota.	North Carolina and a Canadian military site (Canadian Forces Maritime Experimental and Test Ranges near Nanoose Bay, British Columbia) for lead and lithium. The studies discussed in new text added in Section 3.1.1.1.1.7 (Other Contributions to Sediments) suggest that the majority of concerns regarding bioaccumulation are associated with urban coastal environments with specific point source and non-point source contributors of pollutants. The studies concerning military sites suggest that metals exposed to seawater are a less concern because of decreased bioavailability (see discussions in Section 3.1.3.2.3, Impacts from Metals, of the Final EIS/OEIS).
CNMICRM – 22	Throughout this section, emphasis is placed on how quickly chemicals will bind to sediments, removing them from the water column. Although removed from the water column, the presence of toxins in the sediments makes them readily available to primary consumers. Assuming ecological systems remain intact, these chemicals should proceed to increase in concentration throughout higher orders of the food chain. Section 3.1.3.2.4 states in several places that toxic chemicals will disperse quickly due to the actions of currents and biological processes. Although this is partially true, it is also true that the aforementioned variables may act to retain these reactive chemicals within the water column.	Within Section 3.1 (Sediments and Water Quality), fate and transport of specific chemicals are discussed specific to the chemical properties. Although binding to sediments is one possible outcome (e.g., for PCBs), other chemical pollutants behave differently. For example, when metals are exposed to seawater, they begin to slowly corrode, a process that creates a layer of corroded material between the seawater and uncorroded metal. This layer of corrosion removes the metal from direct exposure to the corrosiveness of seawater, a process that further slows movement of the metals into the adjacent sediments and water column. This is particularly true of aluminum. Elevated levels of metals in sediments would be restricted to a small zone around the metal, and any release to the overlying water column would be diluted and influenced by mixing and diffusion. Although there are few specific studies on bioaccumulation in the CNMI, there are other studies cited concerning metals deposition in the marine environment in waters off of military training ranges. For example, Section 3.1.3.2.3 (Impacts from Metals) of the Final EIS/OEIS discusses multiple studies off of Vieques Island in Puerto Rico, Pamlico Sound in North Carolina and a Canadian military site (Canadian Forces Maritime Experimental and Test Ranges near Nanoose Bay, British Columbia) for lead and lithium. The studies discussed in new text added in Section 3.1.1.1.1.7 (Other Contributions to Sediments) suggest that the majority of concerns regarding bioaccumulation are associated with urban coastal environments with specific point source and non-point source contributors of pollutants. The studies concerning military sites suggest

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		that metals exposed to seawater are a less concern because of decreased bioavailability (see discussions in Section 3.1.3.2.3, Impacts from Metals, of the Final EIS).
CNMICRM – 23	In Section 3.1.3.3.7.1 *"Solid-Fuel Propellants"*, Aluminum oxide has adverse effects on marine biota (Sadiq et al 2011). CRM requests that the EIS addresses what concentrations of this chemical will leach into the marine environment. Section 3.3.3.2.2 describes military expended materials. Alternative 1 cites 261 482 military expended materials, including two ship hulks and 10 845 decelerators/parachutes. These materials can have impacts through direct damage, UXO threats, and leaching of chemicals, fuels and trace metals into the marine environment. Parachutes can cause physical damage. Expended materials become marine debris and can cause a great deal of damage to coral reefs and other bottom-dwelling organisms if they are left to move around on the ocean floor. There are several studies cited that discuss leaching from ordinance in marine waters but these are in temperate or cold climates. Only one study cited in marine environments (Hawaii Undersea Military Munitions Assessment 2010) but it was stated that the methodology used was inadequate. CRM requests that the EIS considers potential impacts direct damage, UXO threats, and leaching, and uses studies with adequate methodology conducted in CNMI waters, or at least tropical waters. The DEIS/OEIS details increases in troop activities on Tinian. The DEIS/OEIS must explain how wastewater in the northern parts of Tinian will be addressed to ensure that the impacts on groundwater are minimized.	Section 3.1.3.3.7.1 (Solid-Fuel Propellants) in the Final EIS/OEIS has been clarified to state that if all the aluminum were converted to aluminum oxide from residual solid propellant from a standard missile, approximately 0.004 lb. (1.86 g) of aluminum oxide would end up in seawater. According to studies by the Monterey Bay Institute, aluminium oxide and aluminium hydroxide are relatively insoluble; therefore, these constituents are not biologically available for uptake through the food chain. The levels of aluminium oxide that would end up in seawater from military munitions use is based on 5 percent aluminum content for low smoke solid propellants. Section 3.3.3.2.2 (Impacts from Military Expended Materials) addresses the potential for physical disturbance of marine substrates by military expended materials from training and testing activities throughout the Study Area. Based on the best available data, most studies of unexploded ordnance in marine environments have not detected explosives or have detected them in the range of parts per billion. In addition, the studies referenced in the EIS/OEIS were based on studies where the amount and concentration of ordnance deposited in the areas studied were far more than those that would occur under the Proposed Action. Based on the analysis conducted for training and testing activities in the Study Area, chemical, physical, or biological changes in sediment or water quality would not be detectable. Although there are few specific studies on bioaccumulation in the CNMI, there are other studies cited concerning metals deposition in the marine environment in waters off of military training ranges. For example, Section 3.1.3.2.3 (Impacts from Metals) of the Final EIS/OEIS discusses multiple studies off of Vieques Island in Puerto Rico, Pamlico Sound in North Carolina and a Canadian military site (Canadian Forces Maritime Experimental and Test Ranges near Nanoose Bay, British Columbia) for

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		lead and lithium. The studies discussed in new text (including references for nearshore pollution in Saipan) added in Section 3.1.1.1.1.7 (Other Contributions to Sediments) suggest that the majority of concerns regarding bioaccumulation are associated with urban coastal environments with specific point source and non-point source contributors of pollutants. The studies concerning military sites suggest that metals exposed to seawater are a less concern because of decreased bioavailability (see discussions in Section 3.1.3.2.3, Impacts from Metals, of the Final EIS/OEIS. Table 2.8-1, under "Other" shows no increases in the number of activities involving troop movements on land from the No Action Alternative to either Alternatives 1 or 2. These training activities may be conducted on Tinian and at various locations. Wastewater generated by training activities involving troop movements will be handled in accordance with standard operating procedures specified in the Marianas Training Manual (COMNAVMARIANASINST 3500.4A).
CNMICRM – 24	**Effects on marine habitats** Section 3.3 repeatedly states that there will be little to no impact on marine habitats because military activities make up less than 1% of the study area. One percent of the study area equals 9846 square nautical miles (or 13 039 square miles, to use a more standard measurement), which is still a very large area. Furthermore, this is a misleading statistic, because marine habitats that provide valuable resources, such as coral reefs or seagrass beds, make up only a small percentage of the study area, whereas the majority of the study area is offshore. This is a poor argument to use as to why reefs or other marine habitats will not be heavily impacted. The DIES/OEIS must provide details on the impacts on the important marine habitats that are found within the study area are likely to be impacted, not just repeat that overall less than 1% of the study area will be impacted.	The EIS/OEIS states in Section 3.3.4 (Summary of Potential Impacts [Combined Impacts of All Stressors] on Marine Habitats) that the total impact footprint from training and testing activities ranges from 1,517,636 square feet (0.04 square nautical mile) under the No Action Alternative to 1,875,313 square feet (0.05 square nautical mile) (see Table 3.3-8 for details). The impact area is significantly less than 1 percent of the total Study Area. The majority of military expended material would be used in the open ocean, where substrates would primarily be clays and silts with few benthic invertebrates. Military-expended material in the coastal portions of the Study Area would be limited to small-caliber projectiles, flares, and target fragments. Summaries of the EFHA are provided in Section 3.7 (Marine Vegetation) of the EIS/OEIS. Marine vegetation is part of a habitat defined as EFH. The EFHA is a supporting document to the MITT EIS/OEIS and is available in the MITT website: www.MITT-EIS.com. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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CNMICRM – 25	Section 3.3 states that large military expended materials can serve as artificial reefs. Although these can serve as an ecosystem resource for providing shelter to fish, these should not be considered equal value as natural marine habitats. These artificial structures would house less biodiversity than a natural reef, and do not conduct important biogeochemical processes. Smaller military expended materials, such as parachutes, can cause damage to marine habitats. Section 3.3-26 assumes that materials will most likely be buried in sediment. However less dense objects may shift around with current and waves, and cause physical damage to marine habitats. Section 3.3.3.1.1.1 states that detonations may occur in 6 to 100 ft of water. The DEIS/OEIS must explain where these detonations may occur and whether these areas overlap with any marine habitats. Section 3.3.3.1.2 literally states near-bottom explosions in non-living essential fish habitat areas (EFHA) will be permanent but minimal. Permanent impacts should not be acceptable.	The military is not claiming that large expended materials (e.g., steel casings) that are similar to natural hardbottom substrate (e.g., rock) are equivalent in every way to naturally occurring substrates. Section 3.3 describes an example of how manmade, hard materials like metals may support sessile colonizing organisms and the species that are attracted to these areas. Text in Section 3.3 of the FEIS/OEIS was modified to indicate that manmade substrates are not necessarily equivalent to naturally occurring substrates. Parachutes and other less dense expended materials would not become buried in sediments as quickly as ordnance, but are less likely to cause physical damage to marine habitats. Parachutes and other expended materials are eventually expected to settle to the bottom and not significantly impact marine habitats. Underwater seafloor detonations would occur at discrete sites designated for this type of activity, such as the Agat Bay Mine Neutralization Site and Outer Apra Harbor Underwater Detonation Site (see Table 2.7-1 and Figure 2.7-1 in Chapter 2 Description of Proposed Action and Alternatives). These sites have been used by the military to conduct this type of activity for a number of years. Most military expended materials that settle on soft-bottom habitats, while not damaging the substrate, would modify the habitat by covering the substrate with a hard surface. This event would alter the substrate from a soft surface to a hard structure and, therefore, would prevent the substrate from supporting a soft bottom community. Expended materials that settle in the shallower, more dynamic environments of the nearshore coastal waters would likely be eventually covered over by sediments because of currents and other coastal processes or encrusted by organisms. In the deeper waters of the continental slope and beyond, where currents do not play as large of a role, larger expended materials (i.e., bombs, missiles) may remain exposed on the surface of the substrate with minimal change for extended periods. Softer expended materials, such as decelerators/parachutes, would not damage sediments. Decelerators/parachutes, however, could impair the function of the substrate as habitat because they could be a temporary barrier to

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		interactions between the water column and the sediment. Table 3.3-3 and 3.3-4 of the EIS/OEIS present the location, number, and size of the underwater detonations proposed for the Action Alternatives. These tables have been updated in the Final EIS/OEIS to reflect the locations of the MIRC mine neutralization sites and MIRC underwater demolition sites. Specific locations for underwater detonations utilized during mine countermeasure mission package testing cannot be provided, as those testing activities can occur throughout the Study Area. The Final EIS/OEIS has been revised to include additional information regarding the monitoring reports.
CNMICRM – 26	Sections 3.3.3.2.2.1, 3.3.3.2.2.2 and 3.3.3.2.2.3 state that monitoring of FDM has occurred since 1999, which determined insignificant impacts from military activities. The DEIS/OEIS must include the names of the reports for this monitoring and describe the methods and results that are included in these monitoring activities.	Summaries of methods and results of the FDM monitoring studies have been added to the Final EIS/OEIS. The report information is incorporated into Section 3.1 (Sediments and Water Quality), with a new section added as Section 3.1.3.1.5.3 (Farallon de Medinilla Specific Impacts). It should be noted that the Final EIS/OEIS Section 3.1.3.2, Metals, (and elsewhere in specific resource sections) now cites the Mariana Islands Range Complex Operational Range Clearance Plan, dated June 2013. This plan outlines specific procedures and schedules for range clearance on FDM.
CNMICRM – 27	Section 3.3 refers to high-energy surf disturbance that supposedly takes place at the Tinian beaches. The west-facing beaches are considered to be relatively low-energy. The assertion that the activities mentioned in this section will have no greater impact than surf disturbance on these beaches is therefore questionable. CRM requests that the DoD undertake new or cite existing studies to determine the effects of surf disturbance on these beaches before claiming that these activities are relatively minor in effect. Section 3.3 does not cover the impacts of increased levels of sedimentation from the proposed bombing activities on FDM. The DEIS/OEIS must therefore be revised to include an	The Final EIS/OEIS has been revised to indicate that impacts at beaches and nearshore would recover at rates based on their location, wave energy level, tidal energy, and substrate. Section 3.3 (Marine Habitats) also has been revised to include information regarding sedimentation and soil deposition, which has also been included in Section 3.1 (Sediments and Water Quality). The information regarding location and distribution of seafloor devices in the Study Area is presented and analyzed in Section 3.3.3.2.3 (Impacts from Seafloor Devices) of the Final EIS/OEIS.

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	analysis of sedimentation from bombing activities at FDM on surrounding marine habitats. More detailed information is required on where seafloor devices will be deployed and if this overlaps with any marine habitats.	
CNMICRM – 28	**Effects on marine mammals** Operating sonar throughout the training area will have negative impact on marine mammals that either migrate through or locally reside within the proposed training site (Parsons et al. 2000). Avoidance of such a wide area would likely drive such creatures further away from the area. Live fire sounds can harm marine mammals. Torpedoes can directly target marine mammals. CRM considers this to be a negative impact to its surrounding marine environments. CRM requests that monitoring be undertaken to determine the impacts of the various activities on marine mammals. The DEIS/OEIS does not address potential impacts of proposed ship movements in the transit corridor and sonar testing on marine mammals.	Sonar use within the MITT Study Area does not occur throughout the area all at once. Research shows that only some animals move when sonar is in use and those animals that do move, typically return to the area within days after the sonar event is completed. The potential effects of sonar and explosives on marine mammals are quantitatively estimated using the Navy's Acoustics Effects Model (see Section 3.4.3.1.5.3, Navy Acoustic Effects Model). Predicted effects are minimal (for explosives, no mortality or direct injury, 1 Level A [PTS], 6 TTS, and up to 18 behavioral effects) from all proposed training and testing activities. See Section 3.4.4.2.3 (Predicted Impacts from Explosives) for details. The vast majority of predicted effects from sonar and other active acoustic sources used in training and testing activities are temporary threshold shift and behavioral exposures. Up to 56 PTS exposures are predicted under Alternative 1 annually (see Section 3.4.4.1.3 Predicted Impacts from Sonar and Other Active Acoustic Sources). As Section 3.4 describes, avoidance of areas with repeated anthropogenic activity may occur in some species of marine mammal while other species seem to adapt to the presence of human activity. See Section 3.4.3.1.2.6 (Behavioral Responses) and subsections specific to mysticetes and odontocetes for a discussion on avoidance tendencies. Torpedoes do not target marine mammals. Torpedoes are “smart weapons” designed to target manmade vessels and other manmade structures and are designed not to target biological resources. Analysis of activities occurring in the transit corridor, including the potential effects from sonar, is included in the predicted effects on marine mammals. No marine mammal exposures to sonar or explosives are predicted in the transit corridor. Chapter 5 (Standard Operating

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		Procedures, Mitigation, and Monitoring) of the EIS/OEIS describes the mitigation measures implemented during training and testing activities, including observing for marine mammals prior to and during activities that use sonar and explosives. These procedures apply to activities occurring in the transit corridor as well. The Navy has invested heavily in marine species monitoring in the Mariana Islands since 2007. This includes implementing a marine species monitoring plan where methods such as visual surveys, photo identification, biopsy sampling, tagging (both marine mammals and sea turtles) and passive acoustic monitoring are used. The National Marine Fisheries Service Pacific Islands Fisheries Science Center has been funded to conduct much of the work for the Navy in the region, and has given local presentations and encouraged local scientists to become involved. The exercise and monitoring reports prepared for the Marianas can be found at www.navymarinespeciesmonitoring.us.
CNMICRM – 29	**Effects on sea turtles** Section 3.4 of the DEIS/OEIS does not discuss effects on nesting sea turtles on the beaches of Tinian as a result of amphibious landings. This is a serious omission, since such effects were discussed in detail in previous EIS documents that cover very similar activities, such as the Military Training in the Marianas Final EIS (DoD 1999), and the MIRC FEIS/OEIS (DoD 2010). The Green Sea Turtle (Chelonia mydas) is listed as "threatened or endangered" under the CNMI DFW regulations. Green Sea turtles use the areas offshore Tinian for swimming, foraging in seagrass and algae areas (Kolinski et al. 2004) and nest on Tinian beaches including Unai Chulu, Unai Babui and Unai Dangkolo (Kultz et al. 1999). Nests are visible only for a very short time after initial egg laying. The incubation period for the green sea turtle is around 62 days. However the high tide and wind action on the beach will cover up any tracks very	Section 3.5 (Sea Turtles) of the Final EIS/OEIS has been updated to address sea turtle nesting on Tinian. Prior to beach landings by amphibious vehicles, known sea turtle nesting beaches are surveyed by Navy biologists for the presence of sea turtle nests no more than 6 hours prior to a landing exercise. Areas free of nests are flagged, and vehicles are directed to remain within these areas. LCAC landings on Tinian are scheduled for high-tide. LCACs stay on-cushion until clear of the water and within a designated Craft Landing Zone (CLZ). Within the CLZ, LCAC come off-cushion with the LCAC oriented to permit expeditious vehicle and cargo offload onto a cleared offload and vehicle traffic area. Although LCAC and expeditionary vehicle traffic typically do not leave ruts, some compaction of sand in vehicle tracks is possible. If restoration of beach topography is required, it is conducted using non-mechanized methods. Additionally, Navy biologists monitor beaches during nighttime training landing exercises. If sea turtles are observed or known to be within the area, training activities are halted until all nests have been located and sea turtles have left the area. Identified nests are avoided during the night-time landing exercise. Additionally, Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) has been updated with mitigation measures that reduce or

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	quickly, within a few days. The DEIS/OEIS states that a search of the beach will take place immediately prior to (maximum of six hours) amphibious landings will be made to detect nests. This is not enough to ensure that there are no nests on the beach. Only very recently excavated nests will be visible. It will not be possible to detect nests older than a day or two just by searching the beach six hours prior to landing activities. Daily beach monitoring over at least 60 days prior to the beach landing activities would be required to ensure that all nests are detected. Driving on the beach causes sand compaction and the creation of tire ruts (NMFS and USFWS 1998). Heavy vehicles driving over nests can crush eggs or hatchlings (NMFS and USFWS 1998). Mann (1977) showed that sand compaction from driving over a nest can decrease nesting success and kill hatchlings. Driven beaches have higher percentages of false crawls and lower incubation temperatures, possibly resulting in a lower percentage of female hatchlings (Nester 2006). Hosier (1981) and Lamont et al. (2002) found that tire ruts could significantly affect a turtle hatchling's ability to reach the ocean. Hatchlings trapped in tire ruts that are usually oriented parallel to the ocean become exhausted and are exposed to predators (NMFS and USFWS 1998). Some of these negative effects have been acknowledged in previous military EIS documents for Tinian. The Final EIS for Military Training in the Marianas states that for LCACs parked on the beaches of Tinian "compaction of the sand could make exit from the nests difficult for hatchlings. Offloaded vehicles driving across the beach may crush turtle's nests or leave deep tire track ruts that serve as physical barriers to hatchlings crossing the beach". The DoD must explain why these activities that were acknowledged to have serious negative impacts on sea turtle nests on the beaches of Tinian in	avoid impacts on nesting sea turtles. These measures were included in the USFWS Biological Opinion associated with the training activities proposed to occur on land, and were designed to avoid or reduce impacts on nesting sea turtles on Tinian (and Guam).It should be noted that monthly beach surveys for sea turtles have been conducted on Tinian for over a decade. During consultation with USFWS, the Navy determined that Unai Chulu, Unai Babui, and Unai Dankulo would not be designated as landing zones for mechanized amphibious vehicles (AAVs) at this time. Should mechanized amphibious vehicles (AAV and LCAC) landings on those beaches become necessary, the Navy will reinitiate consultation for those activities.

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	previous EIS documents are assumed to have no effects this time around, when the activities are the almost the same. If the activities occur at night, female turtles that approach the beach to nest during the activity may be disoriented and head inland, dying during daylight from heat exhaustion (NMFS and USFWS 1998). Hatchlings can also be disoriented and misdirected by lights at night, and could fail to reach the ocean (NMFS and USFWS 1998). The DEIS/OEIS does not specify if the activities will occur during the day or at nighttime. The document must include whether activities will occur at night, and if they do, how they will avoid impacting females approaching the beach to lay eggs and hatchlings trying to reach the ocean.	
CNMICRM – 30	Driving on Tinian beaches may have secondary effects on sea turtle nesting. It can cause erosion, damage beach vegetation, and affect the beach's future suitability for providing nesting habitat by compacting the sand. Driving on beaches is against the CRM's recent "Walk it, don't drive it" campaign to prevent vehicle access on beaches. The secondary effects of vehicle activity on beaches must be described and minimized. The DEIS/OEIS does not explain how many boats will be involved per mission or how many times they will beach during each mission. This information must be included to understand the impacts of the proposed activities on sea turtle nests.	The Final EIS/OEIS Sea Turtle resource section has been updated to address sea turtle nesting on Tinian. Additionally, Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) has been updated with mitigation measures that reduce or avoid impacts on nesting sea turtles. As described in the response to CNMICRM-29, LCACs only land within a defined CLZ, which has been surveyed prior to amphibious activities. The number of boats per exercise is not needed in this case to make the conclusions, since the CLZ would have been surveyed and deemed clear prior to any activity. Although LCAC and expeditionary vehicle traffic typically do not leave ruts, some compaction of sand in vehicle tracks is possible. If restoration of beach topography is required it is conducted using non-mechanized methods.
CNMICRM – 31	**Effects on marine birds** The following species are listed in Section 3.6 as nesting on FDM: White Tern, Black Noddy, Brown Noddy, Masked Booby (the largest breeding colony in the Mariana Islands), Red-footed Booby, Brown Booby and Great Frigatebird. However, this is based on data collected 17 years ago (1996) and was collected over a very short period (5.5 hours) (Lusk et al.	The Navy has provided the most up-to-date information regarding species distributions on FDM through Sikes Act coordination and review of the Joint Region Marianas (JRM) INRMP by CNMI DLNR. The Navy is also working to improve coordination with local resource agencies. Please see response to CNMICRM-8. A new map of seabird rookeries for the three booby species has been included in the Final EIS/OEIS (see Figure 3.6-5 of the Final EIS/OEIS).

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	2000). Likewise, the information on nesting areas in Figure 3.6.6 was also based on data collected 17 years ago over a 5.5 hour period (Lusk et al. 2000). New land-based seabird nesting colony surveys need to be conducted across the island to determine where the nesting colonies are now and how they have been affected by the bombing activities. If one has been completed recently by the DoD or contractors, they need to make this available for review by government agencies. This lack of up-to-date data needs to be addressed before impacts on marine birds on FDM can be addressed. The DOD claims that the three ESA-listed species Newell's Shearwater, Hawaiian Petrel and Short-tailed Albatross do not occur in or around FDM, but do not state the last time a comprehensive seabird survey of FDM and its surrounding waters was performed. The military need to cite the source of their determination for the absence of this species, and if it has not been performed recently, perform a new comprehensive land-based and sea-based survey of FDM and surrounding waters to determine whether the three ESA-listed species use these areas	The mapping effort was completed using observations obtained during the 17 years' worth of data collection by the Navy. It should be noted that the rookery locations do not vary significantly from those locations identified by Lusk and others in 1996. It should also be noted that based on a statistical analysis of the seabird counts, no significant changes could be measured in population trends for the three booby species included in the analysis. These booby surveys, while they do not cover all of the nesting cohort at FDM, are used as representative dataset for other species that would be smaller in size and therefore harder to count. These surveys are conducted in the safest way possible (by air) and have provided a good dataset for analysis (see Section 3.6.2.6.3, Farallon de Medinilla, for the statistical analysis of the seabird population data on FDM). The Navy collected anecdotal seabird distribution information during the 2007 MISTCS. As noted in the EIS/OEIS, both short tailed albatross and Hawaiian petrel were observed in the pelagic MIRC. However, despite these sightings, experts believe these species are not residents to the Mariana islands (see the 2008 USFWS Pacific Seabird Regional Recovery Plan) so the birds were likely transiting through the region. It is not safe to survey FDM on foot due to UXO on the range. Therefore, the USFWS and Navy have agreed that the quarterly seabird surveys of FDM provide a long term index of abundance for some species of seabirds and the best available data, and that there is "no effect" on ESA-listed seabird species from the proposed action.
CNMICRM – 32	From 1995 to 2009, monthly surveys of three booby species and the Great Frigatebird took place from a helicopter. After 2009 surveys were made every three months. These surveys do not include the other nesting seabird species, which are presumably too small to be surveyed from helicopter. No monitoring of other seabird species on or around FDM has therefore occurred. The military need to perform ongoing monitoring of all marine bird species, not just the three booby species and the Great Frigatebird. Figures 3.6-7, 3.6-8 and 3.6-9 show the number of masked	In the Final EIS/OEIS, the Navy has expanded on the distribution data of species chosen for focused analysis, which has included subspecies distribution in the western and central Pacific. Based on this information, restricting the definition of "population" to the colonies located within the Mariana archipelago is not appropriate. In addition, the Navy has included in the Final EIS/OEIS a statistical analysis of 17 years of monthly and quarterly bird counts of the three booby species that nest on FDM. The results of this analysis are included in Section 3.6.2.6 (Rookery Locations and Breeding Activities within the Mariana Islands Training and Testing Study Area). It should be noted that the three booby species are easily seen (and therefore counted), thereby

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	boobies, red-footed boobies, and brown boobies, respectively, from helicopter-based surveys from October 1995 to April 2012. The DEIS/OEIS does not include any statistical analyses of these data, and yet the DOD has concluded, presumably just by glancing at these graphs, that there is no negative effect of bombing on booby numbers, and furthermore that increasing the amounts of bombing three-fold will not have any additional effects on booby numbers. The DOD has not compared these data with surveys on nearby seabird colonies to evaluate relative effects of bombings. An independent biostatistician needs to perform statistical analysis of the booby data to determine if there are any temporal trends or patterns related to bombing activities on FDM.	reducing uncertainty in the survey effort. The Navy recognizes that the four species we report are not all the species that might be present on FDM. However, the safety limitations of being able to survey for the smaller birds from air or ground precludes other methods. The Navy and FWS are in agreement that the larger observable may serve as a proxy for trends in all species. The conclusions of no significant adverse impacts on seabird populations due to military use of FDM is supported by the statistical analyses of the bird monitoring data collected for 17 years. In addition, no new bombing areas would be used. The same restrictions listed and described in COMNAVMARINST 3500.4A would be carried forward under all alternatives.
CNMICRM – 33	The document states that Great Frigatebirds were included in the monthly/quarterly surveys, but no data on this species is given. Please present and analyze the data collected on Great Frigatebirds. The DEIS/OEIS claims that the increased bombings *"will not result in a significant adverse effect on populations of the great frigatebird, masked booby or other marine bird species"*. This is unacceptable for the following reasons: a) the DoD has not carried out any analysis of the 1995 to 2012 booby survey data b) the DoD has not even presented any long-term monitoring data on other marine bird species other than for the three booby species c) other than the three booby species and the Great Frigatebird, other marine bird species were not even monitored d) the DoD is considering "population" as the global population, not the Mariana Islands populations. Wildlife and Fisheries, 50 CFR § 21.3 (2013) defines "population" *"as used in §21.15 means any group of distinct, coexisting, conspecific individuals, whose breeding site fidelity, migration routes, and*	There have been few observations of great frigatebirds on FDM. Lusk et al. (2000) confirmed breeding on FDM and estimated 25 adults and juveniles. Others have reported the great frigatebird as only roosting on FDM (Reichel 1991, Reichel 1988). The most recent report of a great frigatebird, however, was a single individual observed in December 2011 and another in 2013 (U.S. Department of the Navy 2013b). FDM does not appear to be a spatially or temporally stable breeding location for great frigatebirds. In the Final EIS/OEIS, the Navy has expanded on the distribution data of species chosen for focused analysis, which has included subspecies distribution in the western and central Pacific. Based on this information, restricting the definition of "population" to the colonies located within the Mariana archipelago is not appropriate. In addition, the Navy has included in the Final EIS/OEIS a statistical analysis of 17 years of monthly and quarterly bird counts of the three booby species that nest on FDM. The results of this analysis are included in Section 3.6.2.6 (Rookery Locations and Breeding Activities within the Mariana Islands Training and Testing Study Area). It should be noted that the three booby species are easily seen (and therefore counted), thereby reducing uncertainty in the survey effort. The results of the statistical analysis do not show any significant changes

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	wintering areas are temporally and spatially stable, sufficiently distinct geographically (at some time of the year) and adequately described so that the population can be effectively monitored to discern change in status". Effects on species must consider the Mariana Islands populations, not global populations of these species. FDM is home to the most important Masked Booby nesting colony in the Mariana Islands, as well as one of only two breeding locations for the Great Frigatebird in the Mariana Islands (DoD 1999). The suggestion that the current and increased levels of bombing activities on FDM would have no significant adverse effect on this population is absurd. e) the new activities will include up to 3 times as much explosive ordinance use per year than previous levels, therefore the impacts will be a minimum of 3 times greater. The effects of past levels of ordinance use cannot be extrapolated to infer effects of future levels of ordinance use f) the DoD has not presented any current land-based survey data on the species nesting on FDM, nor the locations of their nesting colonies. A 17-year old 5.5-hour site visit (Lusk et al. 2000) is not sufficient and is not up to date. g) the secondary impacts of bombing activities (changes to vegetation, erosion issues) have also not been addressed anywhere in the document.	in population trends over the past 17 years of data collection for the three species of boobies included in the analysis. The conclusions that increased ordnance drops on FDM is not adversely impacting seabird populations is supported by the statistical analyses of the bird monitoring data collected for 17 years. Although ordnance use on FDM will increase, it is important to note that no new bombing areas would be used, and the same restrictions listed and described in COMNAVMARINST 3500.4A would be carried forward for all alternatives. The Navy's activities on FDM will likely adversely affect all ESA-listed species on FDM regardless of ordnance drops; therefore, the impact would be the same across all alternatives (likely removal of all ESA-listed species). The inclusion of seabird statistical analyses (discussed above) in the Final EIS/OEIS also includes a refinement of Lusk's distribution map of rookery locations. The refinements were made in coordination with participants on the aerial surveys over FDM who are subject matter experts in these types of surveys and rookery locations on FDM. The updated map is included as Figure 3.6-5 in the Final EIS/OEIS. Comprehensive on the ground breeding bird surveys are not feasible due to safety concerns. More detail regarding potential secondary impacts on FDM have been added to the FEIS/OEIS. Section 3.1.3.1.5.3 (Farallon de Medinilla Specific Impacts) has been added to the Final EIS/OEIS and includes a discussion of dive surveys and impact assessment of military activities on the physical and biological environments. The Final EIS/OEIS also includes more clarifications on vegetation change on FDM. Figure 3.10-4 has been updated to include more recent aerial photography provided by the Navy that aids the comparison with historical aerial photography (circa 1944).
CNMICRM – 34	**Effects on marine vegetation** Section 3.7 repeatedly states impacts to marine vegetation (including seagrasses) from increased turbidity would be minor. However, there are also potential impacts from vessel,	Section 3.7 (Marine Vegetation) of the Final EIS/OEIS addresses the potential impacts on marine vegetation from physical strike and anchorages (Section 3.7.3.2, Physical Disturbance and Strike Stressors). Increased turbidity may be caused by items used in training and testing activities; under the standard operating procedures, the Navy will avoid

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	anchor, or propeller strikes to seagrass beds. These actions could cause more serious damage through the uprooting of seagrass, with a much longer recovery period. The section even cites a study by Dawes et al. (1997) which reported recovery times of up to 10 years. A plan must be put into place to identify and address any serious damage that may occur, survey the recovery of marine vegetation, and provide mitigation for damage to seagrass beds. The DEIS/OEIS repeatedly states the military will ensure prevention of the introduction of invasive species, and will provide control measures if this does occur. Is there information or examples of the military enforcing this practice with current and past military activities to prevent establishment of marine invasive species? Is there a track record that shows none have been introduced so far?	the seafloor to the greatest extent practicable. Additionally, activities that have a greater potential to impact the seafloor, such as amphibious assaults, are conducted at high tide to limit such interactions. Anchorages are also scheduled to occur in specific locations, mainly areas that lack vegetation and that have been previously disturbed. Therefore, serious damage is not anticipated, and survey or mitigation measures are not warranted. "The Navy recognizes the importance of biosecurity, ecological integrity, and resiliency of island ecosystems to the potential introduction of invasive species to the Mariana Islands associated with military training. The Navy has a number of policies in place to prevent, interdict, and control invasive species introductions in both terrestrial and marine environments. Specific policies for marine invasive species can be found at: OPNAVINST 5090.1D Chapter 35-3.19. (Ship and Ballast Water), 5090.1D Chapter 35-3.1 (Environmentally Sound Ships), and 5090.1D Chapter 12-3.10 (Invasive Species).). This information has been added to Section 3.10 ([Terrestrial Species and Habitats]) as part of an overall invasive species discussion that includes terrestrial, marine, and freshwater invasive species. In conclusion, the Navy maintains that introduction of invasive species associated with military training activities is low. It should be noted that the Navy or other military services does not have jurisdiction of other potential pathways for introduction (e.g., commercial activities, U.S. mail, non-DoD personnel)."
CNMICRM – 35	Sections 3.7.3.2.2.2 and 3.7.3.2.2.3 state that small debris will be colonized by marine vegetation. However, small debris will mostly shift around from current and wave action, making it unsuitable for colonization. This will contribute to marine debris, pollution and physical damage of shallow water habitats. A detailed map is needed to illustrate what military activities will overlap with marine vegetation areas to better understand potential impacts. Section 3.7.3.2.2 states that increases in military expended	Additional maps have been included in Section 3.7 (Marine Vegetation) of the Final EIS/OEIS showing the presence of marine vegetation in the Study Area. The statements in Sections 3.7.3.2.2.2 (Impacts from Military Expended Materials, Alternative 1 – Training Activities) and 3.7.3.2.2.3 (Impacts from Military Expended Materials, Alternative 2 – Training Activities) about the colonization of materials by vegetation have been removed from the Final EIS/OEIS because colonization of these smaller materials would be unlikely in the dynamic ocean environment. Section 3.7.3.2.2 (Impacts from Military Expended Materials) of the Final EIS/OEIS states that while there is a large increase in military expended materials, the majority of these materials would be expended in the open ocean areas where there will not be marine

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	materials for Alternatives 1 and 2 (Alternative 2 will have a 230% increase) will have no impact compared with the No Action alternative. How can such an increase not have a difference in impact? Section 3.7.3.2.3 mentions conducting precision mapping exercises with a target radius of 100 yards. CRM requests that a description or map be included to illustrate where these exercises will take place, as well as an indication of whether they overlap with any marine vegetation or habitats.	vegetation. Section 3.7.3.2.3 (Impacts from Seafloor Devices) of the Final EIS/OEIS states that the areas where precision anchoring will occur are near ports over unconsolidated sediments that are lacking vegetation, and these areas have been previously disturbed.
CNMICRM – 36	**Effects on marine invertebrates** In the Marine Invertebrates synopsis (Section 3.8) it is stated that invertebrate critical habitat does not overlap with the study area. However the National Marine Fisheries Service (NMFS) is still weighing the decisions for Endangered Species Act (ESA) listing of corals, which will not be released until mid-2014. If potential coral species are listed as ESA, NMFS will be required to assign critical habitats, which could potentially overlap with the study area. A detailed habitat map, including the marine habitats around FDM, should be provided to illustrate overlap of military activities with areas inhabited by marine invertebrates to properly assess impacts. A map was included in the DoN 2005 report entitled “Marine Resources Assessment for the Marianas Operating Area” (Figure 3, below). This information is available to the military, as it was included in the DoN (2005) report, so it should be included here.	More detailed habitat maps have been added to Section 3.3 (Marine Habitats) and Section 3.8 (Marine Invertebrates) in the Final EIS/OEIS (including around FDM). Section 3.8 (Marine Invertebrates) also includes an analysis of marine species and habitats, including species of marine invertebrates (all corals) listed under the ESA. In addition, the Navy has prepared a Marine Biological Evaluation of Military Training and Testing Activities in the Mariana Islands Training and Testing Study Area as part of formal consultation in accordance with the guidelines for interagency cooperation set forth in Section 7 of the Endangered Species Act (ESA) (16 United States Code [U.S.C.] §1536). The evaluation also includes an analysis of marine species and habitats for corals listed under the ESA. The Biological Evaluation concluded that the following stressors may affect, but are not likely to adversely affect ESA-listed corals: sonar and other active acoustic sources, explosives, vessels, in-water devices, and military expended materials. While some localized impacts may occur, population or sub-population level effects are not anticipated.
CNMICRM – 37	Sections 3.8.3.1.2.1-3 state that for the no action alternative, Alternative 1 and Alternative 2, surveys will be conducted for small vessels to plan entry routes for beach landings, but that this will not be required for small boats. Surveys need to be conducted for all amphibious landings and training activities to prevent damage to reefs, regardless of the size and type of	As described in the Physical Disturbance and Strike Stressor section of 3.8 (Marine Invertebrates), prior to any amphibious over-the-beach training activity conducted with larger amphibious vehicles such as LCACs or AAVs (e.g., Amphibious Assaults), a hydrographic survey and a beach survey would be required. The surveys would be conducted to identify and designate boat lanes and beach landing areas that are clear

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	boat. A plan needs to be in place that will assess and monitor any physical damage incurred on coral reefs.	of coral, hard bottom substrate, and obstructions. LCAC landing and departure activities would be scheduled at high tide. In addition, LCACs would stay fully on cushion or hover when over shallow reef to avoid corals and hard bottom substrate. This is a standard operating procedure for safe operation of LCACs. Over-the-beach amphibious activity would only occur within designated areas based on the hydrographic and beach surveys. Similarly, AAV activities would only be scheduled within designated boat lanes and beach landing areas and would conduct their beach landings and departures at high tide one vehicle at a time within their designated boat lane (COMNAVMAR Instruction 3500.4A). Based on the surveys, if the beach landing area and boat lane is clear, the activity could be conducted, and crews would follow procedures to avoid obstructions to navigation, including coral reefs; however, if there is any potential for impacts to occur on corals or hard bottom substrate, the Navy will coordinate with applicable resource agencies before conducting the activity. Surveys are not conducted for small boats (e.g., RHIBs) because the small boats used during amphibious landing activities have a narrow beam, shallow draft, low operator height-of-eye (enabling excellent visibility), and high maneuverability allowing the operator to see and avoid corals and other obstructions in the nearshore. Because these vessels ride on air filled pontoons, operators are very careful to avoid all obstructions that could damage the vessel, including corals. Therefore, pre-activity surveys are not necessary.
CNMICRM – 38	Regarding the descriptions of coral species listed or proposed to be listed as threatened or endangered under the ESA: In sections 3.8.2.3.3 to 3.8.2.42.3 coral populations and abundances reported in the DEIS/OEIS come from Veron (2000), a coral identification guide in which coral abundances are not derived from systematic coral reef surveys but instead on the author's "general impressions, impressions that may mislead the reader in any one particular place" (Veron 2000). All reef habitats in the Study Area need to be surveyed to determine the presence, distribution, and abundance of all	NMFS' assessment of coral threats by humans are discussed in terms of population size, consumption, and use/collection of corals, and was used in helping direct the discussion regarding species for listing. Military activities proposed under the Proposed Action, while "human" in nature, are described by their component parts (noise, explosions, strikes, etc.) to discuss all aspects of military training and analyze potential impacts. The analysis presented in the Final EIS/OEIS is independent of NMFS' assessment of corals (which is presented in the Final EIS/OEIS as background information regarding corals) and should be interpreted exclusive to NMFS' assessment.

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	coral species listed or proposed to be listed as threatened or endangered under the ESA. The DEIS/OEIS states that NMFS considers physical impact by humans as a low threat for corals. However, the activities proposed include heavy use that can cause heavy impacts to reefs or other marine habitats. This is a misleading statement to use as an argument for military activities having low impact.	The military agrees with the commenter that Veron (2000) does not provide systematically derived data on coral abundance. The FEIS/OEIS has been updated. The Vernon citation has been updated to Australian Institute of Marine Science 2010. Additional sources cited in the NMFS report have been added to the FEIS, as appropriate, to further support the description of abundances provided in the FEIS.
CNMICRM – 39	CNMI Coastal Resources Management Office Comments on MITT DEIS/OEIS Figure 3. Nearshore benthic habitat map of FDM, taken from DoN (2005)	Maps showing coral presence and coverage surrounding FDM (and other islands) have been provided in Section 3.8 (Marine Invertebrates) of the Final EIS/OEIS.
CNMICRM – 40	<u>Sections 3.8.2.3.4 to 3.8.2.42.4: Predator-Prey Interactions</u> The descriptions of predator-prey interactions for the listed species are inconsistent and incomplete. For instance, although there are over fifty species of fish known to feed on scleractinian corals in the region (over a dozen of which are known to feed on Acropora spp. corals; reviewed in Rotjan and Lewis 2008), corallivorous fishes are scarcely mentioned in the descriptions of predator-prey interactions and not at all for the acroporid corals.	The Final EIS/OEIS has been updated to include information of corallivorous fish in the general threats section describing corals, rather than in each sub-section of the species write-ups.
CNMICRM – 41	<u>Section 3.8.3.1.1: Impacts from sonar and other active acoustic sources.</u> For all scenarios (No-action alternative, Alternative 1, and Alternative 2), the DEIS/OEIS states *"Non-impulse sounds may impact individual marine invertebrates and groups of marine invertebrates close to a sound source, but they are unlikely to impact populations or subpopulations"*. Without knowledge of a species distribution, abundance, and patterns of	Given the amount of information available regarding distribution, abundance, and patterns of connectivity in this region, it is indeed difficult to quantify the level of impact. Because of the level of uncertainty due to a paucity of data, the conclusions were made on a qualitative basis and on a relative scale from individual to population. Typically, in a healthy system, the impact to an individual does not have adverse impacts on a population. While it is true that a fatal effect to even one member of a population is an impact, the Navy, per CEQ guidance, must focus on "significant" impacts. Thus, if the analyses

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	connectivity, it is impossible to know if impacts on individuals and groups will adversely affect populations or subpopulations. Under all scenarios, the DEIS/OEIS claims that sonar and other active acoustic sources associated with testing and training activities *"may affect, but are not likely to adversely affect, any of the coral species currently proposed for ESA listing"*. Overall, there is not enough information provided on the exact locations of proposed training and testing activities, the distribution and dynamics of the individual coral species in the study area, or the effects of chronic and acute acoustic stressors on marine invertebrates in general, to support this conclusion. Furthermore, under Alternative 1 and Alternative 2, the DEIS/OEIS correctly states that *"Non-intermittent noise from testing activities (e.g., vessel noise) could mask reef noise. If this noise source overlapped with the larval settlement period, recruitment of larvae onto a reef habitat may be altered"*. Disruptions in coral recruitment processes could result in population declines and shifts in community composition (Hughes and Tanner 2000), which is clearly inconsistent with a conclusion of no adverse effects of active acoustic sources on the coral species proposed for ESA listing. Military testing and training activities that may mask reef noise or otherwise create noise pollution in the vicinity of coral reefs should be limited around annual coral mass spawning events. The impacts of sonar and other active acoustic sources on non-coral benthic and pelagic marine invertebrates are not discussed at all.	demonstrate that there will be a minimal, ephemeral, or otherwise insignificant effect, based on scientific analysis or interpolation of data, then that is what the environmental statement must answer. Given the spatial and temporal impacts of these actions, the EIS/OEIS has determined that there are no population level significant effects, despite the impact upon a few members of the various species. As part of formal consultation regarding ESA species proposed for listing, additional information has been inserted into the Final EIS/OEIS regarding non-impulse noise. Corals throughout the Action Area may be exposed to non-impulse sounds generated by sonar and other acoustic sources, vessels, and aircraft during training and testing activities. However, the vast majority of underwater acoustic sources would not be used in the shallow waters (less than 100 ft. [30 m]) where the majority of species proposed for ESA listing are known to exist. Sound from training and testing activities is intermittent or transient, or both, and will occur close enough to reefs or species proposed for ESA listing to interfere with larval perception of reef noise. In the context of this discussion, the Navy looked at impacts on the individual polyp or medusae in relation to the overall number, or population of coral medusae or polyps. As described in Section 3.8.2.1 (Invertebrate Hearing and Vocalization), invertebrate species detect sounds through particle motion, which diminishes rapidly from the sound source. Most activities using sonar or other active acoustic sources would be conducted in deepwater, offshore areas of the Study Area and are not likely to affect invertebrates. Furthermore, invertebrate species have their best hearing sensitivity below 1 kHz and would not be capable of detecting the majority of sonars and other acoustic sources used in the Study Area. A similar explanation has been added to Section 3.8.3.1.1 (Impacts from Sonar and Other Active Acoustic Sources).
CNMICRM – 42	<u>Section 3.8.3.1.2 Impacts from explosives and other impulsive sources</u>	The 1 percent argument was used as a generalization for the general public rather than report an extremely small decimal. The actual calculation of impact that was presented in Section 3.3 (Marine

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	Summary of activities: • Under all scenarios, marine invertebrates would be exposed to *"explosions and underwater impulse sounds from weapons firing, launch, and non-explosive impacts during training activities"*. • The number of explosives used during training activities would be 1,594 under the No Action Alternative, 10,006 under Alternative 1, and 10,284 under Alternative 2. Up to 16% of these detonations could occur within 12nm of shore and under the No Action Alternative, 50 detonations a year could occur anywhere in the study area including Mariana littoral zones (nearshore shallow areas below high tide line). This number increases to 94 in Alternative 1 and *"would increase"* further under Alternative 2. • Under Alternative 1, training activities would involve the use of 6,805 high-explosives >3nm from shore. Under Alternative 2 training activities would involve 8,335 high-explosives, *"all of which could occur throughout the study area."* Throughout this section, the DEIS/OEIS states that the vast majority of explosions would occur >12nm from shore and the percentage of area affected would be small (< 1% of the total Study Area). These statements, designed to underplay the potential impact of explosive detonations on coral reefs and other benthic and pelagic marine invertebrate communities, are misleading and should be removed. Given the large number of total explosions (especially under Alternatives 1 and 2), even a relatively few detonations in the vicinity of sensitive areas such as coral reefs could have substantial and long lasting population and ecosystem level impacts (Precht et al. 2001; Fox and Caldwell 2006). A more useful statistic would be the proportion of coral reef habitat in the study area affected.	Habitats) has been included in Section 3.8 (Marine Invertebrates) to illustrate the level of localized impacts. While underwater seafloor detonations are part of the Proposed Action, all detonations in shallow waters are restricted to Agat Bay Mine Neutralization Site, Outer Apra Harbor Underwater Detonation (UNDET), and Piti Point Mine Neutralization sites, which are located in waters that are previously disturbed, and are not known to support large invertebrate communities, which further reduces the potential for population level impacts. Additionally, if an area is thought to contain ESA-listed coral species, activities involving explosives will not occur in that area. The Final EIS/OEIS has been revised to make this statement more clear.

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	Thorough biological surveys need to be conducted in order to accurately assess the potential impact of explosive detonations on corals and other benthic and pelagic marine invertebrate communities. Detonations should not occur on or near shallow hard bottom or coral reef habitats due to potential negative impacts on coral species listed or proposed to be listed as threatened or endangered under the ESA and their likely critical habitat as well as the potential for extremely prolonged to absent recovery of these habitats and communities.	
CNMICRM – 43	Under the No Action Alternative and Alternative 1, the DEIS/OEIS states that "explosives and impulse sounds may impact individual marine invertebrates and groups of marine invertebrates, but they are unlikely to impact populations or subpopulation." Without knowledge of a species distribution, abundance, and patterns of connectivity, it is impossible to know if impacts on individuals and groups will adversely affect populations or subpopulations. Section 3.8.3.1.2.1 states that 84% of explosives will be detonated 12 nm offshore under the no action alternative, and Sections 3.8.3.1.2.2 and 3.8.3.1.2.3 states that 94% of explosives will be detonated 12 nm offshore under the Alternatives 1 and 2, respectively. The EIS/OEIS needs to indicate where the other 16% or 6% will be used. Also it is stated that detonations can occur anywhere in the Mariana littoral zone, but then says will only occur in mine neutralization sites. These contradictions need to be addressed. Population-level impacts on near-shore areas, which according to the DEIS/OEIS are possible under Alternative 2, should not be acceptable.	Given the amount of information available regarding distribution, abundance, and patterns of connectivity in this region, it is difficult to quantify the level of impact. Because of the level of uncertainty due to a paucity of data, the conclusions were made on a qualitative basis and on a relative scale from individual to population. Typically, in a healthy system, the impact to an individual does not have adverse impacts on a population. While it is true that a fatal effect to even one member of a population is an impact, the Navy, per CEQ guidance, must focus on "significant" impacts. Thus, if the analyses demonstrate that there will be a minimal, ephemeral, or otherwise insignificant effect, based on scientific analysis or interpolation of data, then that is what the environmental statement must answer. Given the spatial and temporal impacts of these actions, the EIS/OEIS has determined that there are no population level significant effects, despite the impact upon a few members of the various species. Based on the number of explosives reported in the EIS/OEIS, approximately 16 percent (No Action Alternative) or 6 percent (Alternatives 1 and 2) are projected to be used in waters less than 12 nm offshore. However, while underwater seafloor detonations are proposed less than 12nm from shore, all detonations in *shallow* waters are restricted to Agat Bay Mine Neutralization Site, Outer Apra Harbor Underwater Detonation (UNDET), and Piti Point Mine Neutralization sites, which are located in waters that are previously disturbed and are not known to support large invertebrate communities. It is important to

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		note that water depth increase dramatically with increasing distance from shore. Therefore, the remainder of detonations would occur in deeper waters, but less than 12 nm from shore. Additionally, if an area is thought to contain ESA-listed coral species, activities involving explosives will not occur in that area. The Final EIS/OEIS has been revised to make this statement more clear.
CNMICRM – 44	Under all scenarios, the DEIS/OEIS claims that explosions and underwater impulse sounds associated with testing and training activities "may affect, but are not likely to adversely affect, any of the coral species currently proposed for ESA listing." Overall, there is not enough information provided on the exact locations of proposed training and testing activities, the distribution and dynamics of the individual coral species in the study area, or on the effects of chronic and acute acoustic stressors on marine invertebrates in general, to support this conclusion. In Section 3.8.3.3 *"Physical Disturbance and Strike Stressors"*, direct impacts from explosives including bombs, missiles, and rockets should be included in this section, and not merely addressed in terms of acoustics stress expended materials.	Given the dynamic and variable nature of training and testing activities and the amount of information available regarding distribution, abundance, and patterns of connectivity in this region, it is difficult to quantify the level of impact. Because of the level of uncertainty due to a paucity of data, the conclusions were made on a qualitative basis and on a relative scale on populations rather than individuals. The Navy has consulted with the NMFS on the ESA-listed coral species, and the FEIS/OEIS has been updated with the results and conclusions of the Section 7(a)(2) consultation. With regards to Section 3.8.3.3 (Physical Disturbance and Strike Stressors), there is a subsection (3.8.3.3.2.1, Military Expended Materials that are Ordnance) in the EIS/OEIS which discusses military expended materials that includes small to large caliber projectiles, as well as bombs, missiles, and rockets. It is reasonable to assume a proportion of eggs, sperm, early embryonic stages, and planula larvae of ESA-listed coral species subjected to explosive shock and pressure waves will be deformed, die, or experience a decreased likelihood of fertilization. Mortality and lack of successful fertilization in broadcast spawning organisms are not rare, and a majority of the reproductive effort in ESA-listed coral species likely fails naturally. While explosives will likely result in death of developmental stages of ESA-listed coral species, they likely have little impact on their reproductive output at the population level.
CNMICRM – 45	For Sections 3.8.3.1.2.2 and 3.8.3.3.1.2, these activities should not take place during the spawning periods for corals or soft corals.	There are only three locations that are used for detonations in shallow water (Agat Bay Mine Neutralization Site, Outer Apra Harbor Underwater Detonation Site, and the Piti Floating Mine Neutralization Site) that have been used previously, and are considered disturbed

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	In Section 3.8.3.3.1 "Impacts from Vessels and In-Water Devices", on p. 3.8-62 the DEIS/OEIS states *"information on the frequency of vessel operations in shallow water is not adequate to support a specific risk assessment."* CRM does not find this acceptable. More information needs to be provided on the frequency and locations of shallow water training and testing operations.	habitat. Because of the finite sizes of these shallow water underwater detonation sites, and the minimal area of potential impact (to previously disturbed habitat), it is not anticipated that the underwater detonations would impact coral populations. Further, as these areas are previously disturbed, the amount of coral spawn in this immediate area is expected to be lower than in areas of higher coral densities. While some spawn certainly would be in the area and potentially impacted by underwater detonations, the area of impact is extremely small and the implementation of a seasonal training restriction may only gain marginal, if even measurable, benefits to coral spawn. In response to consultation with NMFS on the EFHA and potential impacts to coral reefs, the Navy has revised underwater detonations at the Outer Apra Harbor Underwater Detonation Site from 20 lb. net explosive weight (NEW) to 10 lb. Most Navy vessel movements in nearshore waters are confined to established channels and ports, or predictable transit lanes to adjoining training areas through deep water. Information on the frequency of boats in and out of shallow waters is difficult to achieve due to flexibility in training and changing training requirements. However, the remainder of the referenced section described the potential impacts of vessels in both open and shallow waters. For instance, large, slow vessels would pose little risk to marine invertebrates in the open ocean although, in coastal waters, currents from large vessels may cause resuspension and settlement of sediment onto sensitive invertebrate communities. The Navy is not able to avoid areas during certain times of the year or seasons. Activity locations inevitably overlap a wide array of marine species habitats, including foraging habitats, reproductive areas, and migration corridors. Otherwise limiting activities to avoid these habitats would adversely impact the effectiveness of the training or testing activity, and would therefore result in an unacceptable increased risk to personnel safety and the ability to achieve mission success. Refer to Chapter 5, Section 5.3.4.1.11 (Avoiding Marine Species Habitats) for details.

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CNMICRM – 46	Amphibious assaults and amphibious raids are proposed for Una Babui and Una Chulu, in the northwest of Tinian and Unai Dankulo in the northeast of Tinian. These activities would occur a total of six times annually under the No Action Alternative (4 assaults and 2 raids) and twelve times annually under Alternatives 1 and 2 (6 assaults and 6 raids). The near shore areas associated with these beaches are characterized by medium to medium-high habitat complexity and relatively high coral cover and diversity (Brainard et al. 2012). Baseline biological surveys need to be conducted in these areas to determine the presence an abundance of the coral species proposed for listing under the ESA. Amphibious assaults and raids should not occur in areas where these species are present or during annual coral spawning events. Amphibious landings on the three beaches would inevitably damage the fringing reefs, by physically making contact and breaking coral, and by wash from engine propellers, even if landings are made at high tide. Near shore areas used for amphibious assaults and raids need to be monitored for acute and long term effects of increased turbidity, propeller wash, incidental strikes and other physical damage caused by vessels, bottom-crawling unmanned underwater vehicles and towed devices.	As indicated in Section 3.8 (Marine Invertebrates) of the Final EIS/OEIS, exposure of coral and other hard bottom habitats would be avoided under the action alternatives. Prior to any amphibious over-the-beach training activity conducted with larger amphibious vehicles such as LCACs or AAVs (e.g., Amphibious Assaults), a hydrographic survey and a beach survey would be required. The surveys would be conducted to identify and designate boat lanes and beach landing areas that are clear of coral, hard bottom substrate, and obstructions. LCAC landing and departure activities would be scheduled at high tide. In addition, LCACs would stay fully on cushion or hover when over shallow reef to avoid corals and hard bottom substrate. This is a standard operating procedure for safe operation of LCACs. Over-the-beach amphibious activity would only occur within designated areas based on the hydrographic and beach surveys. Similarly, AAV activities would only be scheduled within designated boat lanes and beach landing areas and would conduct their beach landings and departures at high tide one vehicle at a time within their designated boat lane (COMNAVMAR Instruction 3500.4A). Based on the surveys, if the beach landing area and boat lane is clear, the activity could be conducted, and crews would follow procedures to avoid obstructions to navigation, including coral reefs; however, if there is any potential for impacts to occur on corals or hard bottom substrate, the Navy will coordinate with applicable resource agencies before conducting the activity. Hydrographic and beach surveys would not be necessary for beach landings with small boats, such as Rigid Hull Inflatable Boats (RHIBs), because the small boats used during amphibious landing activities have a narrow beam, shallow draft, low operator height-of-eye (enabling excellent visibility), and high maneuverability allowing the operator to see and avoid corals and other obstructions in the nearshore. Because these vessels ride on air filled pontoons, operators are very careful to avoid all obstructions that could damage the vessel, including corals. Therefore, pre-activity surveys are not necessary. The Navy is not able to avoid areas during certain times of the year or seasons. Activity locations inevitably overlap a wide array of marine species habitats, including foraging habitats, reproductive areas, and

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		migration corridors. Otherwise limiting activities to avoid these habitats would adversely impact the effectiveness of the training or testing activity, and would therefore result in an unacceptable increased risk to personnel safety and the ability to achieve mission success. Refer to Chapter 5 Section 5.3.4.1.11 Avoiding Marine Species Habitats for details.
CNMICRM – 47	Throughout this section, the DEIS states, *"The impact of vessels and in-water devices on marine invertebrates would be inconsequential because: (1) the area exposed to the stressor amounts to a small portion of each vessel's and in-water device's footprint, and is extremely small relative to most marine invertebrates' ranges; (2) the frequency of activities involving the stressor is low such that few individuals could be exposed to more than one event; and (3) exposures would be localized, temporary, and would cease with the conclusion of the activity"*. • In regards to point (1): Alone, the portion of each vessel's and in-water device's footprint that may cause damage is a meaningless metric when trying to assess the potential impact on coral reefs and other invertebrate communities. To determine the actual area that may be impacted by vessels and in-water devices, more information needs to be provided on the size of all vessels and in-water devices as well as the frequency and locations of operations. • In regards to points (2) and (3): Amphibious raids and assaults may occur up to twelve times annually on three beaches/areas in Tinian known to have high coral cover and medium to medium-high habitat complexity (Brainard et al. 2012). Depending on the magnitude (number and size of vessels and in-water devices) and exact locations of these operations, substantial and long-lasting damage could occur to coral reef communities.	With few exceptions, activities involving vessels and in-water devices are not intended to contact the seafloor. Corals proposed for listing under the ESA are typically found in shallow water habitat, where the majority of vessels used during training and testing activities would not operate. Except for amphibious activities, there is minimal potential strike impact and limited potential disturbance impact on benthic or habitat-forming marine invertebrates. The area that could be impacted from vessels and in-water devices is restricted to the landing beaches used for amphibious activities, and as discussed above, the military takes measures to avoid running aground and would plan amphibious and other nearshore activities to avoid areas where corals, including those proposed for listing under the ESA, are known to occur. It is reasonable to assume, however, that this action may affect a proportion of eggs, sperm, early embryonic stages, and planula larvae of ESA-listed coral species subjected to the shearing forces of turbulent waters from the hulls, propellers, or jets of vessels. Mortality and lack of successful fertilization in broadcast spawning organisms are not rare, and a majority of the reproductive effort of broadcast spawning organisms fails naturally. While vessel movement may affect the developmental life stages of ESA-listed coral species, it likely has little impact on their reproductive output at the population level. Damage to coral reef communities is not anticipated from amphibious raids and assaults as a result of avoidance measures described in the EIS/OEIS and in the above comment.

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CNMICRM – 48	The "Military Training in the Marianas Final EIS" (DoD 1999) states that *"the marine survey conducted during LCAC operations at Unai Chulu in late March 1999 determined that the air-cushioned landing craft does not impact coral at this beach's shallow nearshore depths"*. However this claim is contradicted by another DoD publication entitled "Marine Resources Assessment for the Marianas Training Area" (DoN 2005). On Page 2-36 of this document, it is stated that: *"The Landing Craft, Air Cushion (LCAC) TT99 training operations at Unai Chulu impacted reef organisms found within the reef flat (Marine Research Consultants 1999). Several sea cucumbers were displaced, algae thalli were broken, and head corals scraped and broken from the seafloor. Brief sedimentation occurred as a result of these LCAC operations (Marine Research Consultants 1999), and the use of Assault Amphibian Vehicles at Unai Babui may also have impacted corals on the reef flat (DoN 1998)."* Furthermore it states that some of these impacts were permanent. This is a serious contradiction and calls into question the DoD's repeated assertions in Section 3.8 that amphibious landings will not cause harm to marine invertebrates.	As indicated in Section 3.8 (Marine Invertebrates) of the Final EIS/OEIS, exposure of coral and other hard bottom habitats would be avoided under the action alternatives, and measures described above are in place resulting directly from the LCAC operations at Unai Chulu.
CNMICRM – 49	Under all scenarios, the DEIS claims that physical disturbances and strike stressors from vessels and in-water devices *"may affect, but are not likely to adversely affect, any of the coral species currently proposed for ESA listing"*. Overall, there is not enough information provided on the exact locations and frequency of proposed shallow water activities, the area of reef habitat potentially impacted, or on the distribution and dynamics of the individual coral species in the study area to support this conclusion.	Given dynamic and variable nature of training and testing activities and the amount of information available regarding distribution, abundance, and patterns of connectivity in this region, it is difficult to quantify the level of impact. Because of the level of uncertainty due to a paucity of data, the conclusions were made on a qualitative basis and on a relative scale on populations rather than individuals. With few exceptions, activities involving vessels and in-water devices are not intended to contact the seafloor. Corals proposed for listing under the ESA are typically found in shallow water habitat, where the majority of vessels used during training and testing activities would not operate. Except for amphibious activities, there is minimal potential strike impact and limited potential disturbance impact on benthic or habitat-forming marine invertebrates. However, the military takes measures to avoid running aground and would plan amphibious and other nearshore activities to avoid areas where corals proposed for listing under the ESA

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		are known to occur. It is reasonable to assume, however, that this action may affect a proportion of eggs, sperm, early embryonic stages, and planula larvae of ESA-listed coral species subjected to the shearing forces of turbulent waters from the hulls, propellers, or jets of vessels. Mortality and lack of successful fertilization in broadcast spawning organisms are not rare, and a majority of the reproductive effort of broadcast spawning organisms fails naturally. While vessel movement may affect the developmental life stages of ESA-listed coral species, it likely has little impact on their reproductive output at the population level. The Navy has consulted with the NMFS on the ESA-listed coral species, and the FEIS/OEIS has been updated with the results and conclusions of the Section 7(a)(2) consultation.
CNMICRM – 50	**Effects on fish populations** For Section 3.9.3.1.1.1 *"Direct Injury Explosives and Other Acoustic Sources"*, if the proposed plan is imposed, CRM requests that fish killed as a result of training activities are collected for sampling. This would provide local agencies with useful baseline data on species diversity and abundance within the affected areas. The document also states that the number of fish killed is also dependent on fish density within the training area. To ensure the well-being of fish stocks of the CNMI, CRM requests that studies be undertaken to examine islands within the training area that naturally have low densities of fish. Alteration of training sites would provide the people of the CNMI with a sustainable fishery population, especially in terms of fish connectivity.	The Final EIS/OEIS states that impacts on fish from explosives and other acoustic stressors (Section 3.9.3.1.3, Impacts from Explosives and Other Impulsive Sound Sources) may injure or kill a few individuals but are unlikely to have measurable impacts on overall stocks or populations. Since there are no ESA-listed fish species in the Study Area, there is no requirement to estimate takes or mitigate these impacts. The Final EIS/OEIS states that if an underwater explosion occurred in an area of high fish density more fish would be impacted; however, the probability of this occurring is low based on the patchy distribution of dense schooling fish. In addition, near shore areas used for underwater seafloor detonations are areas that have been previously disturbed and unlikely to support large schools or groups of fish. Unfortunately, conducting studies as requested for fish that are killed as a result of military training and testing activities or studies examining islands that naturally have low densities of fish would not be feasible or necessary based on the level of impacts expected. No explosives would be used in nearshore waters of CNMI (see Tables 2.8-1 through 2.8-4 of Chapter 2 Description of Propose Action and Alternatives).
CNMICRM – 54	In Section 3.9.3.1 "Impacts from sonar and other active sources", the DEIS/OEIS states that *"Long-term consequences*	Section 3.9.3.1.2.1 (Impacts from Sonar and Other Active Sources, No Action Alternative – Training Activities) of the EIS/OEIS states that "the

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	for fish populations due to exposure to mid-frequency sonar and other active acoustic sources are not expected". These conclusions are relative to the scale and duration of training within the proposed area. An increase in training activities would result in an increase to exposure to sonar that could affect individual fish as well as fish populations. In Section 3.9.1.2.7 states that *"Overall, long-term consequences for individual fish are unlikely in most cases because acoustic exposures are intermittent and unlikely to repeat over short periods.* The DEIS/OEIS states that exposure to vessel noises may cause fish heart rates and stress levels to increase. If training activities happen to coincide with fish spawning periods, larval stocks may be secondarily affected, creating longer-term effects.	fish species that are known to detect mid-frequencies (some sciaenids [drum], most clupeids [herring], and potentially deep-water fish such as myctophids [lanternfish]) do not have their best sensitivities in the range of the operational sonar. Thus, these fish may only detect the most powerful systems, such as hull mounted sonar within a few kilometers; and most other, less powerful mid frequency sonar systems, for a kilometer or less. Due to the limited time of exposure due to the moving sound sources, most mid-frequency active sonar used in the Study Area would not have the potential to substantially mask key environmental sounds or produce sustained physiological stress or behavioral reactions. Furthermore, although some species may be able to produce sound at higher frequencies (greater than 1 kHz), vocal marine fish, such as sciaenids, largely communicate below the range of mid frequency levels used by most sonar. However, any such effects would be temporary and infrequent as a vessel operating mid-frequency sonar transits an area. As such, sonar use is unlikely to impact fish species." Therefore, the impacts are relative to the movement of the activities, such as being stationary or transiting. Since the types of training activities are not changing, the impacts are expected to remain the same.
CNMICRM - 51	In Section 3.9.3.1.3 "Impacts from Explosives and Other Impulsive Sound Sources; Explosives", the document states that sounds produced by explosions are intensified in areas of hard-substrate. Areas of proposed training are composed mostly of hard-bottom, thus the effects to fish populations would also be greater. For Section 3.9.3.3.2 *"Impacts from Military Expended Materials; Bombs, Missiles, and Rockets"*, CRM questions why statistical modelling wasn't conducted. In the lack of quantifiable data, statistical modelling is the next tool in generating estimates of mortality as a result of the proposed training exercises. In Section 3.9.3.4.2 *"Impacts from decelerators/parachutes"* the number of parachutes released is a concern. The	Section 3.9.3.1.3 (Impacts from Explosives and Other Impulsive Sound Sources) states that "Fish not killed or driven from a location by an explosion might change their behavior, feeding pattern, or distribution. Changes in behavior of fish have been observed as a result of sound produced by explosives, with effect intensified in areas of hard substrate (Wright 1982) ... If an individual fish were repeatedly exposed to sounds from underwater explosions that caused alterations in natural behavioral patterns or physiological stress, these impacts could lead to long-term consequences for the individual such as reduced survival, growth, or reproductive capacity. However, the time scale of individual explosions is very limited, and training exercises involving explosions are dispersed in space and time. Consequently, repeated exposure of individual fish to sounds from underwater explosions is not likely and most acoustic effects are expected to be short-term and localized. Long-term consequences for populations would not be expected. Due to the nature of the impacts over hard substrates and the low frequency of

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	DEIS/OEIS states that decelerators/parachutes are rare. But the number of expended parachutes would amount to greater than 5,000, which could cause hazards to fish populations.	these activities, increased impacts are not anticipated. For the comment on Section 3.9.3.3.2 (Impacts from Military Expended Materials), statistical analysis for fish would not be feasible or necessary for the level of impacts expected from military training and testing activities (see Section 3.9.3.3, Physical Disturbance and Strike Stressors). The use of decelerators/parachutes could have an impact (entangling) on individual fish species in the Study Area; however, since these activities are greatly dispersed it is unlikely that these impacts would cause any population-level impacts.
CNMICRM - 52	In Section 3.9.3.6.2 "Explosive Byproducts and Unexploded Ordnance", shouldn't current models be presented for proposed training areas to reduce the amount of potential entanglements as a result of equipment malfunction? Finally, Section 3.9.4 *"Summary of Potential Impacts on Fish"* states that *"Navy research and monitoring efforts include data collection through conducting long-term studies in areas of Navy activity, occurrence surveys over large geographic areas, biopsy of animals occurring in areas of Navy activity, and tagging studies where animals are exposed to Navy stressors. These efforts are intended to contribute to the overall understanding of what impacts may be occurring overall to animals in these areas"*. The DEIS/OEIS does not state where these studies occurred, and whether they were in the study area. CRM requests that these studies be cited and made available for review.	Section 3.9.3.6.2 (Explosive Byproducts and Unexploded Ordnance) only addresses the impact to fishes via sediment. Any potential impacts from activities resulting in entanglement are discussed in Section 3.9.3.4 (Entanglement Stressors). The discussed research activities have not specifically occurred within the MITT Study Area; because research is not further discussed or used in the analysis, the statement has been removed from the Final EIS/OEIS.
CNMICRM - 53	**Effects on terrestrial species and their habitats** Section 3 does not clearly state which federally and locally listed endangered or threatened species occur within the study area or existing or proposed military lease areas within the study area. Section 3 also does not contain a current list of Migratory Bird Treaty Act (MBTA)-listed terrestrial birds within the study area or military lease areas. CRM requests a table be included for reference so that effects can adequately be	ESA listed species in the MITT Study Area are listed and discussed in Section 3.10.2.3 (Endangered Species Act Listed Species) of the Final EIS/OEIS and listed in Table 3.10-1. The Navy is required, under Section 7(a)(2) of the ESA, to analyze proposed activities if they may affect ESA-listed species. The Final EIS/OEIS has been updated with the results and conclusions of the Section 7(a)(2) consultation between the Navy and the USFWS. For non-ESA listed species and pursuant with the Navy's NEPA analysis, the EIS/OEIS considers species in a wildlife assemblage context or population level, with special focus on species of concern. For

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	evaluated. CRM also requests the local CNMI threatened or endangered species status be included. Table 3.10-5 doesn't list the non-ESA listed bird species that are known to occur on FDM (Micronesian Starling, White-throated Ground Dove) and Rota (numerous).	instance, the Final EIS/OEIS has been updated with a statistical analysis of booby census data, which were collected over the past 17 years on FDM during monthly and quarterly aerial surveys. Tables 3.10-1 has been updated to note federally listed ESA species that are also considered by Guam and CNMI agencies as 'threatened' or 'endangered' under their local statutes. Tables 3.10-2, 3.10-3, and 3.10-5 have also been updated with additional species that may occur on FDM (e.g., white-throated ground dove and Micronesian starling. For Rota, the training areas have been clarified in the Final EIS/OEIS and do not include forest-dwelling species because training activities would not occur within these habitats.
CNMICRM - 54	Section 3.10.2.3.9.8 states that Nightingale reed warblers were detected in the Saipan Marpi Manover area (Craig 1992). This publication is 21 years old, and the survey itself was completed during 1988-1991, between 22 and 25 years ago. The DoD needs to use more recent data. If no data are available, the DoD needs to complete a new survey. In Section 3.10.2.2.1.3 and 3.10.2.2.1.4, 3.10.2.4.1, 3.10.2.4.2, and 3.10.2.2.4.4, there are no survey results for terrestrial partulid snails, lizards, butterflies or their host plants, or other invertebrates on FDM. Two skinks were reported (2.10.2.2.4.3) however this appears to be incidental sightings not comprehensive surveys. Table 3.10-3 lists the White-throated Ground Dove and Micronesian Starling as the only native terrestrial bird species on FDM. However this was based on a 5.5 hour 1996 visit (Lusk et al. 2000). There are no more recent land-based bird surveys cited. A thorough terrestrial wildlife survey needs to be completed before effects on terrestrial species can be assessed. FDM has not been recently surveyed for terrestrial species. The island of FDM has caves but there is no information to show whether or not the Mariana Swiftlet or Pacific Sheath-tailed Bat are found in these caves. CRM requests that a thorough terrestrial species survey be carried out in order to determine which	The Navy has updated the Final EIS/OEIS with the most recent known occurrences of ESA-listed species within the Saipan Marpi Maneuver Area. This information has been obtained from the USFWS representative on Saipan during the informal phase of the Section 7 ESA consultation between the Navy and the USFWS. Due to concerns regarding unexploded ordnance, species-specific surveys for partulid snails, lizards, butterflies and host plants, other invertebrates, and the Pacific sheath-tailed bat are not feasible. The Navy has conducted limited on the ground surveys for Micronesian megapodes. Table 3.10-3 is intended to be a representative list of species that may occur on FDM, not a comprehensive checklist of flora and fauna. As for the Mariana swiftlet, the USFWS has concurred with the Navy's assessment that military training activities would only potentially affect the Mariana swiftlet on Guam and on Saipan. It should be noted that the Navy does not target caves on FDM and caves are not within the impact areas.

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	federally and locally listed endangered or threatened species, MBTA-listed species, and USFWS-listed birds of conservation concern are present on the island. This should include a survey of caves for the endangered Mariana Swiftlet and Pacific Sheath-tailed Bat, as well as surveys on terrestrial lizards, snails and insects.	
CNMICRM - 55	Section 3.10.3.1.1.1 and 3.10.2.1.1.2 claims that *"terrestrial bird species do not likely breed on FDM"* but offers no evidence to support this claim, nor why this apparently contradicts previous surveys that found both the White-throated Ground Dove and Micronesian Starling on FDM in 1996 (Lusk et al 2000). Furthermore, there are no more recent terrestrial bird surveys available to support or refute this claim. The DoD needs to complete and make available terrestrial bird surveys on FDM in order to determine whether or not terrestrial bird species breed on FDM. They cannot possibly conclude effects on these birds without doing so.	The Navy recognizes the potential for breeding on FDM for terrestrial bird species. Breeding on FDM, however, is unlikely due to the limited amount of habitat. Remnant habitats may persist in the northern portion of FDM, which is not targeted by users of the range.
CNMICRM - 56	The Micronesian Megapode (Megapodius laperouse laperouse) and Mariana Fruit Bat (Pteropus mariannus mariannus) is listed as "threatened or endangered" under the CNMI DFW regulations. Alternative 1 states that explosives may produce noise and weapons firing may affect and are likely to adversely affect the Micronesian Megapode and Mariana Fruit Bat on FDM. Section 3.10.3.1.1.2 claims that exposure to Micronesian Megapodes and Mariana Fruit Bats are expected to increase under Alternative 1, but that "the expected impacts on any individual bird would remain the same for all three alternatives". This is illogical. Increased explosives to the levels proposed in the DEIS/OEIS would both increase the number of individuals exposed AND increase the level of exposure to each individual. The DEIS/OEIS does not contain an up-to-date map of Micronesian Megapode sightings. This information is available as it was included in the Joint Region Marianas (2012) INRMP	Tables 3.10-1 has been updated to note federally listed ESA species that are also considered by Guam and CNMI agencies as "threatened" or "endangered" under their local statutes. Tables 3.10-2, 3.10-3, and 3.10-5 have also been updated with additional species that may occur on FDM (e.g., white-throated ground dove and Micronesian starling). The Navy is presenting information in the Final EIS/OEIS that all of the ESA-listed species may be adversely affected by military use of FDM. Therefore, varying ordnance amounts between alternatives could have the same impact—the potential mortality of megapodes and Mariana fruit bats on FDM. The Navy is pleased that the INRMP is providing additional baseline detail for the Navy's Sikes Act partners. As practice, location of ESA-listed species is not typically included in public documents. Even though FDM access is restricted to military-authorized personnel, the location of megapode sightings are described in general terms in the Final EIS/OEIS.

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	(Figure 4), the data themselves were sourced from NAVFACPAC.	
CNMICRM - 57	CNMI Coastal Resources Management Office Comments on MITT DEIS/OEIS Figure 4. Map of marine bird nesting colonies and Micronesian Megapode sightings, taken from Joint Region Marianas (2012).	Rookery locations observed by Lusk in 1996 and reported in Lusk et al. (2000) appear to be similar to updates made based on the 17-years of data collection conducted by the Navy. Having said this, the Navy has updated the rookery map based on field observations by biologists during the periodic surveys (monthly, now quarterly surveys) of FDM.
CNMICRM - 58	Section 3.10.3.1.1.1 claims that the No Action alternative "explosions on FDM may affect, but not adversely affect, the Marianas Fruit Bat". However in the next sentence it claims that "Explosions on FDM may affect and are likely to adversely affect the Micronesian Megapode and Mariana Fruit Bat" – this is contradictory. Please correct this to indicate which it is. Section 3.10.2.3.11.3 states that FDM is thought to be a stopover for Mariana Fruit Bats moving through the islands. The state of the vegetation is an important factor in how well FDM serves as a stopover. There needs to be a thorough survey of the current state of the vegetation on FDM, compare it with past surveys (if any) or photographs, compare the impact area with the "no drop zone", and implement ongoing monitoring of vegetation on the island. The ability of the island to act as a stopover could impact the ability of the species to move among islands in response to volcanic activity, typhoon damage and other natural disasters.	The Final EIS/OEIS has been updated to correct the inconsistencies. The Navy is presenting information in the Final EIS/OEIS that all of the ESA-listed species may be adversely affected by military use of FDM.
CNMICRM - 59	The section on birds of conservation concern (BCC) is contradictory and poorly written. Table 3.10-3 and Part 3.10.1.2.1 should be amended to reflect that fact that 7, not 5 or 4 or 3, USFWS-listed birds of conservation concern occur on islands within the study area, and should give the correct list of species found within each military lease area. The correct list of BCC found within the islands of the study area is as follows: Micronesian Myzomela (*Myzomela rubrata*), Rufous Fantail, Aguiguan and Rota subspecies (*Rhipidura rufifrons*	The Final EIS/OEIS table has been updated accordingly; however, the impact conclusions have not changed based on this additional information.

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	mariae), Rufous Fantail, Saipan and Tinian subspecies (*Rhipidura rufifrons saipanensis*),Tinian Monarch (*Monarcha takatsukasae*), Bridled White-eye, Saipan subspecies (*Zosterops conspicillatus saypani*), Golden White-eye (*Cleptornis marchei*), and Micronesian Starling (*Aplonis opaca*). Within the military lease areas, FDM has the Micronesian Starling (and possibly others, since the only available survey was the Lusk et al. (2000) 5.5 hour visit in 1996); Tinian MLA has the Micronesian Myzomela, Rufous Fantail Saipan and Tinian subspecies, Bridled White-eye Saipan subspecies, and Micronesian Starling; and the Saipan Marpi Manoever Area has the Micronesian Myzomela, Rufous Fantail Saipan and Tinian subspecies, Bridled White-eye Saipan subspecies, Micronesian Starling and Golden White-eye.	
CNMICRM - 60	Section 3.10.2.1.5 states that bombing has altered the vegetation of FDM from tree canopy cover to lower vegetation, especially in areas of higher bombing levels. A brief vegetation survey was completed in 1996 which listed 32 native species and 11 introduced species. No ongoing monitoring has taken place to discern the effects of bombing on vegetation communities. Vegetation provides habitat (food and nesting areas) for terrestrial species, as well as the prevention of soil erosion. It is acknowledged in section 3.10.3.2.2 that the vegetation to the north of the "no fire" line is in much better condition than that within the firing ranges. A land-based survey of the current vegetation condition on FDM to assess the effects of bombing activities needs to occur. There also needs to be ongoing monitoring of vegetation on FDM in areas of high and low explosives activity, in order to determine the effects of bombing activities on the vegetation communities of FDM. Section 3.10.3.2.3.4 discusses wildfire on FDM as a potential issue, but does not state how this will be addressed. Wildfire can be started by exploding ordinance (of which there are	The Navy continues to monitor general ecological conditions on FDM through the use of aerial images and routine surveys. The Navy has an Operational Range Clearance plan (2013) for FDM, which includes provisions for vegetation management and removal/disposal of materials that may present an explosive risk. Clearance of the range occurs every 2–4 years, depending on the type of ordnance targeted for removal or destruction. To further monitor the effects of military training on FDM, COMNAVMARINIAS 3500.4A requires ordnance drops outside of the Impact Areas to be reported.

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	thousands proposed for FDM). It can cause extensive damage to wildlife habitat, including endangered species habitat, as well as secondary effects such as increased levels of erosion and sedimentation. How will the military prevent wildfires spreading from the impact zones into the no drop zones? What kind of range maintenance will take place to prevent wildfires from spreading? Finally, there needs to be an assessment of the effectiveness of the "no fire line", including how much stray ammunition ends up in the "no drop zone".	
CNMICRM - 61	**Effects on cultural resources** Concerning archaeological resources on FDM, Section 3.11.2.2.1 states that a preliminary archaeological field survey of FDM was conducted in 1996 by Dr. Welch of IARII and that no archaeological sites or isolated non-modern artifacts were observed. In the 1999 Final Environmental Impact Statement for the Military Training in the Marianas it is stated in appendix D1 page 14 that Dr. Welch's 1996 trip to FDM was a preliminary archaeological reconnaissance and that all historic remains noted can be attributed to the use of the island as a bombing target by the U.S. Military. However the Joint Intelligence Center, Pacific Ocean Areas NOS 42-44, April 1 1944 notes the presence of possible a Japanese Lookout Tower on FDM, indicating that at least something was built on FDM during the historic period prior to the end of World War II, even if FDM was not occupied on a full-time basis. Limestone islands such as FDM often contain vast cave and cavern systems. Historically and prehistorically, sea caves, cliff shelters, and beach landing areas could have provided valuable shelter to fisherman, agriculturalists, and even foreign military members who utilized FDM prior to or during World War II. It is in those shelter and camping or living areas that remnants of past cultural activity, including burial or	Consultation regarding the identification of historic properties (including traditional cultural properties) and the effects of the Undertaking (as discussed in the MITT EIS/OEIS) on the historic properties within the Area of Potential Effect has been conducted and solidified in the 2009 MIRC Programmatic Agreement (PA). FDM was included in the consultation. All cultural resources reports have been shared with and reviewed by the appropriate stakeholders. No new cultural resources surveys are required or planned on FDM.

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	ritual sites is often found. Was a thorough inventory of caves undertaken as part of a cultural survey or is a thorough cultural survey of FDM scheduled for the future?	
CNMICRM - 62	Further, reconnaissance surveys for archaeological purposes are often completed without undertaking thorough on-ground investigations because they are designed as a preliminary investigation for planning purposes and not intended to be a final investigation. If Dr. Welch's reconnaissance survey was undertaken from the air or without the benefit of systematic methods, much of the remnants of past cultural activity such as pottery shards and food remains from early voyagers, stone tools from agriculturalists, even the remains of German and Japanese occupation could easily have been completely missed by the investigator. In the absence of the actual final report authored by Dr. Welch about his 1996 visit to FDM there are many questions that should be answered pertaining to the methods employed by Dr. Welch that form the basis for the finding of no significant impact to cultural resources. Was the Welch investigation a systematic investigation on the ground? Was it a visual inspection from helicopter, transects over the island, shovel-test transect, or other format? Did it include testing the soil and examining the geology, subsurface probes, or examination of caves as would be required to make an informed determination that there were no historic or prehistoric archaeological remains present on FDM? Will the report and other reports about cultural resources in the Marianas commissioned during the course of the DEIS/OEIS preparation be made available to the Historic Preservation Office and the CNMI Government?	Consultation regarding the identification of historic properties (including traditional cultural properties) and the effects of the Undertaking (as discussed in the MITT EIS/OEIS) on the historic properties within the Area of Potential Effect has been conducted and solidified in the 2009 MIRC PA. FDM was included in the consultation. All cultural resources reports have been shared with and reviewed by the appropriate stakeholders.
CNMICRM - 63	Has the issue of FDM as an important Traditional Cultural Property to the Chamorro people been addressed? If not, it needs to be. FDM was clearly an important island to local peoples in the past as is noted by George Fritz, first German	Consultation regarding the identification of historic properties (including traditional cultural properties) and the effects of the Undertaking (as discussed in the MITT EIS/OEIS) on the historic properties within the Area of Potential Effect has been conducted and solidified in the 2009

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	Administrator to the Marianas in his 1904 manuscript The Chamorro: A History and Ethnography of the Mariana Islands. On page 11 of the 1986 Elfriede Craddock translation of Fritz's book it is noted that while FDM was not known to the missionaries of his time it had evidence of either current or earlier occupation. Likely FDM was an important stopping point on Chamorro voyages up and down the island chain, especially with its flocks of migratory birds, which were traditionally hunted and salted, and for its abundant fishing along the coastline. It is slightly disconcerting that the first German Administrator to the Marianas undertook a more thorough and careful examination of FDM's cultural resources in the early 20th century than that which was undertaken by the authors of the DEIS/OEIS in the 21st century. Furthermore, while this DEIS/OEIS document continually stresses that FDM has been bombed for decades, past use should never dictate future actions. More importantly, past use is no excuse for not taking proper action and not undertaking proper study during this DEIS/OEIS and Section 106 review process.	MIRC PA. FDM was included in the consultation. All cultural resources reports have been shared with and reviewed by the appropriate stakeholders.
CNMICRM - 64	**Effects on recreational and commercial fishing activities** Restricting fishing areas may impede the ability of fishermen to fish in these areas and increase the pressure on other fishing areas. There is no indication of the timing and duration of fishing restrictions as a result of the proposed military activities on Tinian and FDM. It is impossible to determine the effects of restrictions on fishing activities within the restricted areas, as well as increased pressures on other areas. Table 3.13-4 shows the numbers of past closures and the durations of each, but the DEIS/OEIS does not indicate the number and durations of closures that the vastly increased proposed activities on FDM would necessitate. Section Figure 3.12-4 shows the FDM restricted area and	The military does not anticipate that the limited number of activities proposed to occur around Tinian would affect fishing. The increase in activities will likely result in increased closure times around FDM. The Navy is aware that this may affect access to fishing sites, but regards the safety of fishermen and other boaters as a top priority, and the 12 nm Danger Zone is necessary to ensure safety. While the number of proposed activities increases under Alternatives 1 and 2, the increase may not result in a proportional increase in the number of days when the 12 nm danger zone is temporarily closed. The increase in the number of activities could translate to an increase in the closure time for one day and not necessarily additional closure days. The map of the area around FDM (Figure 3.12-4) has been revised to show the bathymetry around the island as a proxy for fishing sites (no data on specific fishing sites is available). Areas shallower than 400 m are considered potential fish habitat accessible to bottom trawlers. While some areas within the

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	danger zone, but it would be useful to show this map in relation to other islands, particularly Saipan, to help put into perspective the potential impacts on fishing activities between the islands.	12 nm danger zone will not be accessible during certain activities for safety reasons, access will only be limited temporarily and not for all activities occurring at FDM. The military currently issues Notices to Mariners (NTMs) out to 12 nm around FDM and is seeking a congruent C.F.R danger zone. The Navy is also planning to announce upcoming periods when FDM will not be used for several consecutive days to allow mariners to plan to fish or transit through the danger zone beyond 3 nm from FDM. FDM is depicted in Figure 3.12-2 in relation to the other Mariana Islands and Guam.
CNMICRM - 65	Section 3.12.3.1.1.2 states that *"The military has been conducting training and testing activities within the MITT Study Area for decades"*. Such statements should be removed. This DEIS/OEIS is meant to address the impacts of proposed activities. Past activities should not act as a green light for future activities, especially when the proposed activities are significantly different to what has happened in the past. There will be substantial cumulative impacts on recreational and commercial fishing from a combination of activities proposed in this DEIS/OEIS with other military activities in the region. Section 4 needs to address this deficiency.	Statements like the one quoted in the comment are intended to demonstrate that the military has conducted similar activities in the region for a long period of time and provides a baseline to which proposed activities can be compared. While new activities are proposed, a long history of the same or similar activities coupled with no observed long-term impacts is worthwhile to note. The potential impacts of new activities and the continuation of current activities has been updated in the FEIS/OEIS. Cumulative impacts on socioeconomic resources are specifically addressed in Section 4.4.12.3 (Cumulative Impacts on Socioeconomic Resources) of Chapter 4 (Cumulative Impacts) in the FEIS/OEIS.
CNMICRM - 66	**Effects on transportation between islands** Figure 3.12-4 shows the FDM restricted area and danger zone, but it would be useful to show this map in relation to other islands, particularly Saipan, to help put into perspective the potential impacts on transportation between the islands. Section 3.12.3.1.1.1 gives no indication of the location, number and duration of military activities and associated airspace and shipping routes. This is needed in order to properly assess the effects of the proposed activities on commercial transportation and shipping. How many times per year in total would transportation be impacted, and what is the duration of each restriction?	The map view has been expanded to show proximity to other nearby islands. Figure 3.12-2 shows a broader view of the islands, including FDM and Saipan as well as Tinian Rota and Guam. Tables 2.8-1 through 2.8-4 in Chapter 2 (Description of Proposed Action and Alternatives) present information on the number and location of proposed training and testing activities. The duration of activities varies and is dependent on a variety of factors, including transit time from shore, platform type (some aircraft activities are limited by fuel capacity), purpose of the activity, etc. See Appendix A (Training and Testing Activities Descriptions) for details on the duration of specific activities. Airspace routes and shipping lanes are depicted in Figures 3.12-1 and 3.12-3 in Section 3.12 (Socioeconomics). Shipping routes are typically known and predictable and, military activities occurring in military ranges are

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	There will be substantial cumulative impacts on transportation from a combination of activities proposed in this DEIS/OEIS with other military activities in the region. Section 4 needs to address this deficiency.	typically scheduled to avoid conflicts with commercial transportation. Cumulative impacts are specifically addressed in Chapter 4 (Cumulative Impacts) of the EIS/OEIS. Refer to Section 4.4.12.3 (Cumulative Impacts on Socioeconomic Resources).
CNMICRM - 67	**Effects on Tourism** The proposed activities will create restricted access to beaches and dive sites used by tourists on Tinian. What is the schedule? How many times will these beaches be off-limits? There will be substantial cumulative impacts on tourism from a combination of activities proposed in this DEIS/OEIS with other military activities in the region. Section 4 needs to address this deficiency.	The activities occurring in nearshore waters off Tinian and the number of times the activities would occur annually are presented in Table 2.8-1 in Chapter 2 (Description of Proposed Action and Alternatives). Up to six Amphibious Warfare activities may require access to beaches on Tinian (see Appendix A, Training and Testing Activities Descriptions, for additional information on activities), limiting the number of times the area would be closed to the public and minimizing the potential impact on tourism. A schedule is not available for activities occurring years in advance. The military issues Notices to Mariners announcing the time and date of an activity that may interfere with maritime traffic at least 72 hours in advance of the activity. When military activities are not taking place, these areas are typically open to the public. Cumulative impacts are specifically addressed in Chapter 4 (Cumulative Impacts) of the EIS/OEIS. Refer to Section 4.4.12.3 (Cumulative Impacts on Socioeconomic Resources). This section has been updated with additional information.
CNMICRM - 68	**Cumulative impacts** In general, Section 4 “Cumulative Impacts” does not address the cumulative impacts of the activities described in the DEIS/OEIS on any of the potential impacts given in Sections 3.1 through 3.13 with other current military activities that are occurring in the study area. These activities include, but are not limited to, activities described in the Guam/CNMI relocation, divert airfield and the CJMT. Instead this chapter largely relies on comparing the impacts of these proposed activities to other activities such as worldwide turtle deaths from fishing, and arguing that the impacts outlined in the	Section 4.3.3 (Other Military Actions) of the Final EIS/OEIS addresses other military actions in the Study Area. Information was added to this section regarding potential cumulative impacts related to other current military activities in the Study Area. Section 4.4 (Resource-Specific Cumulative Impacts) addresses other military actions in the Study Area. Only those resources that contribute incrementally (under Alternative 1 and 2) to cumulative impacts are carried forward in this analysis.

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	DEIS/OEIS are comparatively insignificant.	
Commonwealth of the Northern Mariana Islands Department of Lands and Natural Resources (CNMIDLNR) - 1	Dear Sir/Madam, The Commonwealth of the Northern Mariana Islands (CNMI) Department of Land & Natural Resources Division of Fish & Wildlife (DFW) appreciates having the opportunity to share its concerns on the Draft Environmental Impact Assessment (EIS) on the Marianas Islands Training Testing (MITT) Activities, United States Department of the Navy. This review contains comments on the overall validity of the EIS, the credibility of risk to marine and terrestrial environments and cultural and socioeconomic conditions, and the requirements by the EIS and U.S. Department of the Navy to assure adequate protections.	Thank you for your participation in the NEPA process. Your comment has been broken down into component parts to ensure that all comments provided in your letter are addressed. As a result, this portion of the comment does not contain a specific question or inquiry related to the EIS/OEIS. Therefore, no response is provided.
CNMIDLNR - 2	**General concerns.** Proposed activities will have significant impacts on the ecological, cultural, and socioeconomic resources of the CNMI and its surrounding waters. Some impacts, such as the degradation of landscapes, restriction of access to resource users, and the diminishment of cultural value are impossible to monitor, measure, mitigate, and recover. DFW is particularly concerned about the cumulative impact of military buildup and training activities (including the MITT, MIRC, CJMT, Divert, etc.) will have in its jurisdiction.	The military is committed to protecting the environment during the conduct of its military training and testing activities. Effects from Navy training and testing activities were analyzed in Chapter 3 of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The analysis of cumulative impacts is presented in Chapter 4.0 (Cumulative Impacts) of the EIS/OEIS. Table 4.3-1 provides a list of other actions and other environmental considerations identified for the cumulative impacts analysis.
CNMIDLNR - 3	• The EIS lacks basic information required to assess ecological, socioeconomic and cultural risk. • DLNR and DFW are rarely afforded the opportunity to conduct independent, third-party monitoring of the impact of ongoing military training activities, particularly those at sea and on remote northern islands in the archipelago.	The EIS/OEIS takes a “hard look” at potential environmental consequences of the Proposed Action and alternatives, and provides sufficient information for careful agency decision-making. All Navy marine species monitoring reports are publically available (e.g., at the Navy website, www.navymarinespeciesmonitoring.us/, and also at the NMFS website, www.nmfs.noaa.gov/pr/permits/incidental.htm#applications). The

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	• Few data collected by Department of Defense (DOD) and its contractors in monitoring and mitigation activities associated with prior and ongoing training activities in the region are shared with DFW. DFW is thus prevented from monitoring or knowing the real impact of military activities in its territorial waters and terrestrial habitats. DLNR and DFW are also prevented from being able to model or predict the likely impact of DOD training activities in its jurisdiction.	request to share reports was also provided to the Navy team during a meeting with the Military Integration Management Committee (MIMC). As a result, the annual terrestrial monitoring reports are undergoing consolidation and will be provided to the MIMC upon completion.
CNMIDLNR - 4	• DLNR and DFW are rarely invited to collaborate with DOD on the design, execution, and scientific review of monitoring activities. • Military activities are presented in "number of activities per year'', not specific durations or seasonality of the activities (e.g. Table 2.8-1 , Baseline and Proposed Training Activities). • Dates and locations of activities are not provided, so added cumulative impact of training activities (ecological, cultural and/or socioeconomic) cannot be predicted or monitored. Activities occurring consecutively versus concurrently would cause significant hardship in exclusion zones within the Restricted Area (Farallon de Medinilla, R-7201 and R-7201A) and Danger Zones near Tinian and Farallon de Medinilla, especially if they are spatially or temporally overlapped with commercial and sport fishing activity. Additive/consecutive activities would instill a level of chronic environmental risk. • Tinian's map (3.6-18) shows no Danger Zone for surrounding waters. It is not clear if shoreline excursions will prevent access to surrounding waters during the time of these exercises.	The Navy's coordination with local stakeholders has improved over the past few years. As an example, in 2014, CNMI DLNR biologists participated in aerial surveys of FDM. More formal coordination with local stakeholders occurs through the Navy's Sikes Act obligations and the development of the Joint Region Marianas INRMP. Activities in this EIS/OEIS are not seasonal or confined to specific dates unless specifically mentioned in Appendix A (Training and Testing Activities Descriptions). Current and proposed Danger Zones are discussed in Table 2.7-1. No Title 33 C.F.R. Part 334 Danger Zones exist in the Tinian nearshore areas, and none are proposed in the EIS/OEIS.
CNMIDLNR - 5	• The EIS ignores the environmental impacts of increased bombing activities in waters surrounding Farallon de Medinilla, specifically within the 3 nm permanent Restricted Area (R-7201). There is a strong likelihood that aberrant	While there will be increased bombing activities on FDM, those activities are limited to the island itself and do not occur within 3 nm of the island. Surveys conducted by the Navy since 2004 and previously by the USFWS (1999–2003) indicate that the ecosystem around FDM remains healthy

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	ordnance will adversely affect the surrounding coral reef and associated fauna (fish, sea turtles, and marine mammals). The EIS should provide an ordnance-specific probability estimation of land versus sea detonation based on known target success of the specific weapons applied. • There are few detailed maps showing coral habitat for Farallon de Medinilla (contrast Section 3.3-11 to the maps provided for Tinian in Section 3.3-12). Military-funded surveys have been performed on Farallon de Medinilla in the past, and data from these surveys should be incorporated on the standard series of maps. • Section 3.3 - Marine Habitats contains all other affected islands except Farallon de Medinilla. This should be addressed in the context of increased ordnance on Farallon de Medinilla with all alternatives presented.	even with military activities occurring on the island. Section 3.1.3.1.5 (Fate of Military Munitions in the Marine Environment) has been added to the Final EIS/OEIS and includes a discussion of dive surveys and impact assessment of military activities on the physical and biological environments. Section 3.3 (Marine Habitats) has been updated for a discussion of secondary stressors in marine habitat associated with misses of FDM and Section 3.8 (Marine Invertebrates) for a discussion of secondary stressors and coral communities surrounding FDM. More detailed habitat maps have been provided is Section 3.3 (Marine Habitats), Section 3.7 (Marine Vegetation), and Section 3.8 (Marine Invertebrates) of the Final EIS/OEIS. Section 3.3 (Marine Habitats) of the Final EIS/OEIS has been updated to include FDM.
CNMIDLNR - 6	• The EIS ignores some of the most apparent activities that impose risk to surrounding fauna. Some examples include the impact of amphibious landings on turtles and corals, and the increasing bombing activity of Farallon de Medinilla. • The real ecological impact of proposed activities will be observed and described by DOD affiliated observers. Such observers have the potential to underreport or report with bias the impact of activities. The proposal does not provide for independent assessment of the impact of proposed military activities. • The level of access that non-military personnel will have to Farallon de Medinilla in the three-mile exclusionary zone is not well-described. • Subsurface activities, including anti-submarine warfare, electronic warfare, sonar use, and ordnance detonation on or near sea mounts will have significant impacts on populations	The EIS/OEIS analyzes all activities that may have the potential to affect terrestrial and marine species, including activities on and around FDM. Sections 3.5 (Sea Turtles) and Section 3.8 (Marine Invertebrates) of the Final EIS/OEIS have been updated to include more information regarding potential impacts on FDM. Information has been added regarding increased bombing at FDM and potential impacts on soil contamination, runoff, and indirect impacts on marine resources. With regards to amphibious landing impacts on turtles and corals, the Standard Operating Procedure (Section 5.1) of the EIS/OEIS, presents information regarding pre-exercise hydrographic survey, beach surveys, sea turtle surveys, and post-operation restoration. These mitigation measures are now standard operating procedures and were taken into account for the analysis of potential impacts from amphibious assault and raid activities. With regards to independent observers, the EIS/OEIS presents this as a mitigation that has been previously considered but eliminated (Section 5.3.4.1). This section presents the numerous reasons why the use of third-party observers would be impractical with regard to implementation of military readiness activities and result in

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	of marine habitats and animals, including cetaceans, fish, and marine invertebrates.	unacceptable impact on readiness. Information has been added with regards to accessibility to both ocean and airspace in Section 3.12.3.1 (Accessibility [to the Ocean and Airspace]) of the Socioeconomic Resources section of the EIS/OEIS. The restricted airspace, R-7201, overlays FDM and the waters surrounding the island out to a distance of 3 nm. R-7201 supports live-fire and inert engagements such as surface-to-ground and air-to-ground gunnery, bombing, and missile exercises, all of which require that access to the area be permanently restricted to ensure the safety of the public. Even when live-fire or other potentially hazardous activities are not occurring at FDM, the threat of unexploded ordnance is always present. No commercial or recreational activities occur or are permitted on or near the island, and aircraft and marine vessels are restricted from entering within 3 nm of FDM. Notices to Airmen and Notices to Mariners are issued at least 72 hours in advance of potentially hazardous training or testing activities. The resource sections of the EIS/OEIS analyze all components of the action alternatives for impacts on marine habitats and animals, including cetaceans, fish, and marine invertebrates. This includes subsurface activities, sonar use, and underwater explosives. Greater detail on each of these stressors can be found within the biological sections of the EIS/OEIS.
CNMIDLNR - 7	**Sediments and water quality.** Sedimentation in proximity to land-based activities on Farallon de Medinilla and Tinian will adversely affect nearshore habitats. The EIS's claims of localized long and short term impact are valid. However, the EIS ignores sedimentation as a significant concern.	The Navy shares your concern regarding the well-being of biological resources in the Study Area. Section 3.1 (Sediments and Water Quality) of the Final EIS/OEIS addresses the impacts on water quality and sedimentation surrounding FDM. This section concludes that training (including on FDM) would contribute to sedimentation; however, the contribution is not expected to exceed the natural erosion and sedimentation rates. Therefore, impacts on the reef communities from land activities on FDM are considered minor and do not affect long term health of surrounding marine communities.
CNMIDLNR - 8	• The increased level of bombing and disturbance of soil on Farallon de Medinilla imposes a significant risk to surrounding	The EIS/OEIS has been updated to address potential sedimentation and

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	corals and other sessile invertebrates. The EIS focuses on the in-water impacts of explosives and potential contamination from ordnance, which will have local and short-term negative impacts. Bombs up to 2000 lbs. will significantly disrupt soil and increase sedimentary load on surrounding reefs. • Aberrant ordnance around Farallon de Medinilla will decimate surrounding corals and cause mortality of sea turtles, marine mammals, and fish, and it will damage critical fish habitat. • Amphibious assault with heavy equipment along the shores of Unai Babui, Unai Chulu and Unai Dankulo will increase sediment loads to the nearshore reefs, impacting corals and decreasing quality of fish habitat. The EIS speculates that impacts would only be temporary. However its assessment is only based on short-term observation, and it ignores the impact from latent effects. • With increased sediment loading into near-shore waters, water and substrate quality will decrease. Without proper flushing, sediments will accumulate and be re-suspended with every storm or increased wave and wind activity. Suspended sediments affect light attenuation, effectively decreasing the amount of sunlight needed by photosynthesizing organisms such as corals and algae.	erosion from military use of FDM. The Navy has considered the potential for errant munitions into non-impact areas in the EIS/OEIS; however, the Navy disagrees with the comment stating that errant ordnance will decimate surrounding corals and cause mortality of various forms of marine life. Section 3.1.3.1.5 (Fate of Military Munitions in the Marine Environment) has been added to the Final EIS/OEIS and includes a discussion of dive surveys and impact assessment of military activities on the physical and biological environments. Throughout all dive surveys, the coral fauna at FDM was observed to be healthy and robust. The nearshore physical environment and basic habitat types at FDM have remained unchanged over the 13 years of survey activity. These conclusions are based on (1) a limited amount of physical damage, (2) very low levels of partial mortality and disease (less than 1 percent of all species observed), (3) absence of excessive mucous production, (4) good coral recruitment, (5) complete recovery by 2012 of the 2007 bleaching event, and (6) a limited number of macrobioeroders and an absence of invasive crown of thorns starfish (*Acanthaster planci*). These factors suggest that sedimentation that may result from military use of FDM is not adversely impacting water quality. The potential for mortality of sea turtles, fish, and marine mammals is a possibility, but the probability is extremely low. The probability of direct strike in nearshore and offshore waters for sea turtles and marine mammals was calculated in Appendix G (Statistical Probability Analysis for Estimating Direct Strike Impact and Number of Potential Exposures) of the EIS/OEIS. These calculations are made for areas where ordnance is expected to fall, and probabilities of strike were calculated at well below 1 percent. It would follow that aberrant ordnance at FDM would occur, by definition, at far lower rates than those areas that are targeted. Therefore, the probability of a direct strike of a sea turtle or marine mammal from aberrant ordnance at FDM would be lower than that calculated for areas actually targeted. The impact of military expended material strikes would be inconsequential

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		due to (1) the limited number of species found directly at the surface where military expended material strikes could occur, (2) the rare chance that a marine species might be directly struck at the surface by military expended materials, and (3) the ability of most species to detect and avoid an object falling through the water column below the surface. The potential impacts of military expended material strikes would be short-term (seconds) and localized disturbances of the water column, and are not expected to yield any behavioral changes or lasting effects on the survival, growth, recruitment, or reproduction at the population level (see individual sections on Physical Disturbance and Strike Stressors in Section 3.4 Marine Mammals, Section 3.5 Sea Turtles, and 3.9 Fish).
CNMIDLNR - 9	**Sea turtles.** There is significant risk in military activities having an adverse impact on local sea turtle populations. The draft EIS states a limited impact. However, it largely ignores the increased level of ordnance use on Farallon de Medinilla and impact of amphibious assault on Tinian's beaches. • Amphibious assault on Tinian's beaches of Unai Babui, Unai Chulu and Unai Dankulo will impact fragile nesting habitat for green sea turtles. Heavy equipment will crush buried nests and compact the surrounding substrate, reducing suitability as a continued nesting site.	Prior to beach landings by amphibious vehicles, known sea turtle nesting beaches are surveyed by Navy biologists for the presence of sea turtle nests no more than 6 hours prior to a landing exercise. Areas free of nests are flagged, and vehicles are directed to remain within these areas. LCAC landings on Tinian are scheduled for high-tide. LCACs stay on-cushion until clear of the water and within a designated Craft Landing Zone (CLZ). Within the CLZ, LCAC come off-cushion with the LCAC oriented to permit expeditious vehicle and cargo offload onto a cleared offload and vehicle traffic area. Although LCAC and expeditionary vehicle traffic typically do not leave ruts, some compaction of sand in vehicle tracks is possible. If restoration of beach topography is required, it is conducted using non-mechanized methods. In addition to pre-exercise surveys and post exercise beach repairs, the Navy's sea turtle monitoring program includes monthly surveys at potential nesting beaches and sea turtle tagging efforts. During consultation with USFWS, the Navy determined that Unai Chulu, Unai Babui, and Unai Dankulo would not be designated as landing zones for mechanized amphibious vehicles (AAVs) at this time. Should mechanized amphibious vehicles (AAV and LCAC) landings on those beaches become necessary, the Navy will reinitiate consultation for those activities.

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CNMIDLNR - 10	• The EIS, assuming only land strikes of ordnance, ignores the potential impact of abberant ordnance on pelagic sea turtles around Farallon de Medinilla. Green (threatened), hawksbill (endangered), loggerhead (endangered), olive ridley (threatened), and leatherback sea turtles (endangered) utilize nearshore habitats and reef sites as a refuge from predators and for grazing and reproduction. The sparse available habitat for such activities across the CNMI underscores the ecological significance of each island unit. Although the EIS indicates a lower abundance of sea turtles around Farallon de Medinilla relative to other islands, this does not preclude Farallon de Medinilla's importance as critical habitat. • The EIS states a low risk of entanglement based on the relatively small size of the parachutes (45 cm diameter) with "short lines" (page 3.4-177), however it is not indicated if all are negatively buoyant (only stating that most have weights). A drifting parachute would pose a significant risk to sea turtles, which may ingest or feed in proximity to the object and become entangled. The estimation of 8,000 parachutes/decelerators per year is large, and indicates a potential risk for entanglement.	The EIS/OEIS does consider errant targeting within impact areas on FDM in the terrestrial species and habitats section. Consideration for errant misses that hit the water or skip into the water from land has been added into various resource sections (e.g., marine invertebrates, marine vegetation, sea turtles, and marine mammals). It should be noted that mitigation measures in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) specific to targeting restrictions reduce the potential for errant munitions refer to Section 5.6.4 (Conservation Measures on Farallon De Medinilla) of the Final EIS/OEIS. As described in Section 3.5 (Sea Turtles), sonobuoy decelerators/parachutes are designed to sink within 15 minutes. The EIS/OEIS acknowledged the risk for sea turtles to become entangled, particularly while at the surface. However, a sea turtle would have to surface to breathe or grab prey from under the decelerator/parachute, and swim into the decelerator/parachute or its lines. While in the water column, a sea turtle is less likely to become entangled because the decelerator/parachute would have to land directly on the turtle, or the turtle would have to swim into the decelerator/parachute before it sank. Based on probabilities presented in Appendix G of the EIS/OEIS, the probability of ANY strike by military expended material is well below 1 percent (0.092 percent) in nearshore waters and even lower (< 0.001 percent) in the open ocean. In addition, the vast majority of decelerators/parachutes are used in areas greater than 3 nm from shore. Bottom-feeding sea turtles tend to forage in nearshore areas rather than offshore, where these decelerators/parachutes are used; therefore, sea turtles are not likely to encounter decelerators/parachutes once they reach the seafloor. Further, the deposition of a decelerator/parachute on the seafloor would occur in water depths that are greater than the diving abilities (and hence foraging abilities) of sea turtles. The potential for a sea turtle to encounter an expended decelerator/parachute at the surface or in the water column is extremely low, and is even less probable at the seafloor, given the general improbability of a sea turtle being near the deployed decelerator/parachute, as well as the general behavior of sea turtles. The Navy is consulting with the USFWS for nesting sea turtles.

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CNMIDLNR - 11	• Amphibious assault and amphibious raids at Unai Babui, Unai Chulu, and Unai Dankulo on Tinian during turtle nesting seasons will disrupt the breeding success of green and hawksbill sea turtles. • Active low frequency acoustic sources such as the active sonar used by anti-submarine warfare sonars associated with the Littoral Combat Ship, the impact of non-explosive munitions, large vessel ship-radiated noise, and explosive devices emanating frequencies in the range of 300-400 Hz would impact the hearing of sea turtles. If their hearing is compromised, then their ability to navigate and detect predators (the latter is probably the more salient function of hearing in sea turtles) would be negatively affected. • Activities such as ship movement, munitions use, and the use of active low frequency acoustical devices in areas where marine downwelling gathers and aligns buoyant material (including dispersed food resources in surface waters) would affect sea turtles that congregate at these convergences in their pelagic stage. • Proposed monitoring and surveillance of sea turtle nesting activity (including nest locations) is insufficient to identify fresh nests and body pits. Daily monitoring before and constant monitoring during military exercises and beach use is required to adequately reduce impact of amphibious training activities. Monitoring by an independent (i.e. not employed or contracted by the Department of Defense) party specially trained in sea turtle nest location is required to provide objective and non-biased assessments of the effect of military activities on sea turtle nesting success and behavior.	Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) has been updated with mitigation measures that reduce or avoid impacts on nesting sea turtles. During consultation with USFWS, the Navy determined that Unai Chulu, Unai Babui, and Unai Dankulo would not be designated as landing zones for mechanized amphibious vehicles (AAVs) at this time. Should mechanized amphibious vehicles (AAV and LCAC) landings on those beaches become necessary, the Navy will reinitiate consultation for those activities. Section 3.5 (Sea Turtles) presents information on the number of turtles expected to experience some impacts on hearing from both non-impulsive (sonar) and explosives used under the action alternatives. The Navy has also analyzed vessel movement, strike probabilities, and other stressors. Based on this modeling and additional analysis, the Navy has concluded that the action may adversely affect sea turtles, and has consulted with NMFS to develop additional monitoring and/or mitigation measures. Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) includes instruction for visually identifying sea turtles, jellyfish aggregations, and flocks of seabirds, which are often indicators of marine mammal or sea turtle presence and frequently signify the location of a downwelling convergence zones at sea. With regards to the amphibious landings, prior to beach landings by amphibious vehicles, known sea turtle nesting beaches are surveyed by Navy biologists for the presence of sea turtle nests no more than 6 hours prior to a landing exercise. Areas free of nests are flagged, and vehicles are directed to remain within these areas. LCAC landings on Tinian are scheduled for high-tide. LCACs stay on-cushion until clear of the water and within a designated Craft Landing Zone (CLZ). Within the CLZ, LCAC come off-cushion with the LCAC oriented to permit expeditious vehicle and cargo offload onto a cleared offload and vehicle traffic area. Although LCAC and expeditionary vehicle traffic typically do not leave ruts, some compaction of sand in vehicle tracks is possible. If restoration of beach topography is required, it is conducted using non-mechanized methods. Additionally, Navy biologists monitor beaches

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		during nighttime training landing exercises. If sea turtles are observed or known to be within the area, training activities are halted until all nests have been located and sea turtles have left the area. Identified nests are avoided during the nighttime landing exercise.
CNMIDLNR - 12	**Marine mammals**. • Numerous species of marine mammals (26+ spp., 5 Endangered) utilize the nearshore and offshore waters of the CNMI. Although most activities will be performed in excess of 12 nm off shore, there are some concerns about the impact of acoustic activities and submarine explosives on local populations. These include: • Use of sonar, underwater explosives, and other acoustic devices will have an adverse impact on whales and dolphins, especially residential Culver's beaked whales which have shown mortality, injury and evasion in response to Navy acoustic activities. The military is aware of the potential effects sonar and other acoustic sources can have on beaked whales and has consulted with NMFS and as a result of consultation is requesting 2 beaked whale takes annually (10 over 5 years) to address uncertainty of potential effects on beaked whales from training and testing activities using sonar. • Unprecedented acoustic activity, including aberrant bombing on Farallon de Medinilla, would likely increase mortality of species that are closely related to nearshore habitats, including sperm whales (resident), humpback whales, false killer whales, and spinner dolphins. • The use of tethered parachutes (total 8,000/year) risks entangling marine mammals. The EIS states the parachutes are mostly weighed; however, they do not provide specific information on the actual weight and known sinking rate of the device.	The potential effects of sonar and explosives on marine mammals are quantitatively estimated using the Navy's Acoustics Effects Model (see Section 3.4.3.1.5.3, Navy Acoustic Effects Model). Predicted effects from sonar and explosives are provided in Tables 3.4-17 and 3.4-18 (sonar) and 3.4-23 and 3.4-24 (explosives). No mortality or direct injury to any marine mammals is predicted. Seventy-three Level A (PTS) exposures are predicted (all but one from activities using sonar). See Section 3.4.4.1.3 (Predicted Impacts from Sonar and Other Active Acoustic Sources) and Section 3.4.4.2.3 (Predicted Impacts from Explosives) for details. The analysis and predicted exposures of marine mammals to acoustic effects includes nearshore species and marine areas around FDM. The military is requesting authorizations from NMFS under the MMPA and ESA for potential takes of marine mammals. Once a sonobuoy hits the water surface, its decelerator/parachute is designed to produce drag at the surface for 5 to 15 seconds, allowing for deployment of the sonobuoy, then the decelerator/parachute separates and sinks. The decelerator/parachute assembly contains metallic components, and could be at the surface for a short period before sinking to the seafloor. Sonobuoy decelerators/parachutes are designed to sink within 15 minutes, but the rate of sinking depends upon sea conditions and the shape of the decelerator/parachute and the duration of the descent would depend on the water depth. As stated in Section 3.4.4.5 (Entanglement Stressors), the majority of the “parachutes” expended are 18 in. (45.7 cm) diameter, cruciform (“X” shaped) decelerators attached with short lines to the top of sonobuoys and are therefore very unlikely entanglement hazards for most marine mammals. In addition, there has never been a reported or recorded instance of a marine mammal entangled in military expended materials. While the parachutes/decelerators are intended to sink to the bottom, they may be entrained in currents both at the surface and in the water column as they sink. If a marine mammal did become entangled in a

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	• Disruption of marine mammals and their subsequent evasion of military activities may impose a significant energetic cost to species that must dive to great depths to obtain food. • The use of global-scale population estimates instead of local stocks is insubstantial.	parachute, it could easily become free of the parachute because the parachutes are made of very light-weight fabric. However, entanglement is unlikely to occur given the estimated density of parachutes in the Study Area (one per 7 square nautical miles). Avoidance of military activities (e.g. sonar) is analyzed in the FEIS (see Section 3.4.4.1.2 Avoidance Behavior and Mitigation Measures as Applied to Sonar and Other Active Acoustic Sources). While additional energetic costs may be experienced by individual marine mammals if their behavior (e.g., aborting a dive) is disrupted, the frequency of such an occurrence is expected to be very low based on analysis conducted in the FEIS using the Navy Acoustics Effects Model (NAEMO), which takes into consideration density estimates for marine mammals present in the region and diving behavior. Behavioral effects for marine mammals, including deep diving species, are predicted; however, adverse effects at the population level are not anticipated. The military has consulted with NMFS under the MMPA and ESA and is requesting take authorizations for activities conducted in the MITT Study Area under both acts. There are no current marine mammal stocks designated in the MITT Study Area. Data on marine mammal densities estimates and abundances in the Study Area were derived from best available data and peer reviewed studies, and the most appropriate estimates for the region were used to calculate the model predicted effects.
CNMIDLNR - 13	**Corals.** The CNMI has a high-diversity of corals, a number of which are being considered for listing as threatened (38 spp.) or endangered (2 spp.). Corals provide critical fish habitat for reef and bottom fish species, and therefore are integral in the health and sustainability of the CNMI's fisheries and tourism industry. Corals are also important because they prevent shoreline erosion by buffering ocean waves. Activities offshore will impact corals. The greatest effects will be on Farallon de Medinilla and Tinian. • Farallon de Medinilla will have greater bombing activity on the land causing increased sediment loads.	The EIS/OEIS does consider errant targeting within impact areas on FDM in the terrestrial species and habitats section. Consideration for errant misses that hit the water or skip into the water from land has been added into various resource sections (e.g., marine invertebrates, marine vegetation, sea turtles, and marine mammals). It should be noted that mitigation measures in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) specific to targeting restrictions reduce the potential for errant munitions refer to Section 5.6.4 (Conservation Measures on Farallon De Medinilla) of the Final EIS/OEIS. The Final EIS/OEIS has been updated to indicate that if aberrant ordnance occurs at FDM, then there is a possibility for impacts on corals

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	• Aberrant ordnance directly impacting reef sites will diminish species abundance and diversity, and the overall health of corals. It will reduce structural integrity of the reef and increase the susceptibility of Farallon de Medinilla to coastal erosion.	in the immediate area. However, by definition, aberrant ordnance would be an infrequent event, and impacts would be extremely localized. Additionally, increased sedimentation or runoff from ordnance use has been included in the Final EIS/OEIS.
CNMIDLNR - 14	• Increased bombing activities of Impact Areas 3 and 2 (live/inert ordnance) on Farallon de Medinilla will compromise the "land bridge" between the two target areas. The destruction ofthis geological formation will accelerate the mid-island breach, which would reduce protection of the leeward side of the island where much of the coral growth and habitat complexity resides. The windward side is conversely highly-impacted by wave and storm activity and this will be extended to the leeward side by breach of the land bridge. • Increased terrestrial bombings, clearings, land modifications will cause increased terrestrial runoff. Runoff usually contains dissolved inorganic nutrients, particulate organic matter and sediments which can affect light attenuation, water quality and substrate quality. This runoff will have negative effects on adult and juvenile corals. • Sedimentation will decrease coral calcification, fecundity, tissue thickness, zooxanthellae density, photosynthesis, and overall coral survival. Sedimentation will decrease coral settlement and metamorphosis, recruitment and juvenile growth and survival.	The Navy disagrees that the land bridge noted in the comment will be compromised due to military use of FDM. This area is not targeted and is designated as a special use area where targeting is explicitly prohibited. This restriction is included in COMNAVMARIANAS 3500.4A dated 8 October 2013, specifically to preserve the integrity of the land bridge. Information regarding potential sediment runoff from military use of FDM has been added to the sediments and water quality section of the MITT EIS/OEIS. Information regarding how erosion from FDM may impact specific resources has been added to particular resource sections (e.g., marine communities, marine invertebrates, fish, sea turtles, and marine mammals). Further, the EIS/OEIS now cites the Mariana Islands Range Complex Operational Range Clearance Plan, dated June 2013. This plan outlines specific procedures and schedules for range clearance on FDM. The siting of targets and impact areas consider protections to relatively higher quality habitat in the northern portion of the island, the narrow land bridge, and various limestone cave features along the coast. In other words, the Navy believes that the location of the impact areas offer the least impacts to fulfill military mission requirements of the range.
CNMIDLNR - 15	• Amphibious assault of Tinian's beaches (Unai Babui, Unai Chulu and Unai Dankulo) will cause landing craft to come in direct contact with sensitive corals (EIS Figure 3.3-3). • The impact of proposed activities and their effects and by-products, including spent ordnance, refuse, and used	As indicated in Section 3.8 (Marine Invertebrates) of the Final EIS/OEIS, exposure of coral and other hard bottom habitats would be avoided under the action alternatives. Prior to any amphibious over-the-beach training activity conducted with larger amphibious vehicles such as LCACs or AAVs (e.g., Amphibious Assaults), a hydrographic survey and a beach survey would be required. The surveys would be conducted to

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	sonobouys, on deep corals has not been evaluated.	identify and designate boat lanes and beach landing areas that are clear of coral, hard bottom substrate, and obstructions. LCAC landing and departure activities would be scheduled at high tide. In addition, LCACs would stay fully on cushion or hover when over shallow reef to avoid corals and hard bottom substrate. This is a standard operating procedure for safe operation of LCACs. Over-the-beach amphibious activity would only occur within designated areas based on the hydrographic and beach surveys. Similarly, AAV activities would only be scheduled within designated boat lanes and beach landing areas and would conduct their beach landings and departures at high tide one vehicle at a time within their designated boat lane (COMNAVMAR Instruction 3500.4A). Based on the surveys, if the beach landing area and boat lane is clear, the activity could be conducted, and crews would follow procedures to avoid obstructions to navigation, including coral reefs; however, if there is any potential for impacts to occur on corals or hard bottom substrate, the Navy will coordinate with applicable resource agencies before conducting the activity. Additionally, military expended materials and potential impacts on marine invertebrates (including corals) are discussed in Section 3.8 (Marine Invertebrates) rather than in Section 3.3 (Marine Habitats).
CNMIDLNR - 16	**Fish.** The EIS states that most activities will be in deeper waters and therefore will have a low risk to fish. This is likely accurate in deeper, offshore waters (>25 nm). The EIS is speculative regarding impacts to fish <25 nm from Farallon de Medinilla and Tinian. • Increased bombing of Farallon de Medinilla will impact local reef and bottom fish species that inhabit the surrounding shallow and deep water reefs. Direct impact of reef sites by aberrant ordnance will mortally wound fish in proximity to detonation and be a significant stressor outward for hundreds of meters. • Increased bombing on Farallon de Medinilla will impact five pomacentrid species of fish, and the Napoleon wrasse (*Cheilinus undulatus*), that have been proposed for listing	The Navy shares your concern regarding the well-being of biological resources in the Study Area. Section 3.1 (Sediments and Water Quality) of the Final EIS/OEIS addresses the impacts on water quality and sedimentation surrounding FDM. This section concludes that training and testing activities on FDM would contribute to sedimentation; however, the contribution is not expected to exceed the natural erosion and sedimentation rates. Therefore, impacts on the reef communities from land activities on FDM are not expected to result in significant impacts. While aberrant ordnance may occur, it would not occur with a frequency that would be expected to result in population-level impacts on fish in the surrounding areas.

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	under the Endangered Species Act. Increased use of 2000 pound bombs on Farallon de Medinilla increases the potential for impact on surrounding reef fish. • Increased bombing activity will impact the genetic continuity of reef fish populations in the Mariana Archipelago. Bombs reaching the nearshore will kill reef fish, remove multiple year classes, and homogenize coral reef structure.	
CNMIDLNR - 17	• A decrease in the functional diversity of the reef surrounding Farallon de Medinilla will decrease grazing by herbivorous fish would likely increase algal production and outcompeting of corals. • No information (past or current) on reef fish populations or densities from Farallon de Medinilla, including reef fish habitat, are available to allow for an assessment of probable impacts from aberrant ordnance within the nearshore (<3 nm) waters of Farallon de Medinilla. • The use of tracked landing craft on Tinian will crush delicate corals and decrease critical fish habitat. Nearshore waters and their complex habitats are used by nearly all reef fish as nurseries and more pelagic species of jacks. The EIS ignores the impact of these habitats on local fish recruitment and also utilization of adult fish.	Sediments dislodged from ordnance strikes on FDM that wash into the nearshore environments would cause temporary water quality impacts. FDM is comprised of highly weathered limestone overlain by a thin layer of clay soil which and is highly susceptible to natural causes of erosion. Erosion as a result of training activities at FDM may contribute to deposition of soils into the nearshore areas of FDM, causing increased turbidity. Turbidity can impact corals, invertebrate, and vegetation communities by reducing the amount of light that reaches these organisms and by clogging siphons for filter feeding organisms. The Navy minimizes the potential for military use of FDM to contribute to naturally-induced water quality impacts by limiting the location and extent of target areas, along with the types of ordnance allowed within specific impact areas. Additionally, chemical, physical, or biological changes in sediment or water quality would not be detectable. Therefore, impacts on reef communities from erosion or sedimentation are not anticipated. Section 3.1 (Sediments and Water Quality) of the Final EIS/OEIS addresses the impacts on water quality and sedimentation surrounding FDM, and Sections 3.7, 3.8, and 3.9 (Marine Vegetation, Marine Invertebrates, and Fish, respectively) of the Final EIS/OEIS addresses the impacts on the components of reef communities. While aberrant ordnance may occur, it would not occur with a frequency that would be expected to result in population-level impacts on vegetation, corals, invertebrates, or fish in the surrounding areas. Corals proposed for listing under the ESA prefer shallow water habitat, where the majority of vessels used during training and testing activities would not operate. Except for amphibious activities, there is minimal potential strike impact and limited potential disturbance impact on

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		benthic or habitat-forming marine invertebrates. Many corals and hardbottom habitat are fragile and particularly vulnerable to physical disturbance. However, the military takes measures to avoid running aground and would plan amphibious and other nearshore activities to avoid areas where corals proposed for listing under the ESA are known to occur. It is reasonable to assume, however, that this action may affect a proportion of eggs, sperm, early embryonic stages, and planula larvae of ESA-listed coral species subjected to the shearing forces of turbulent waters from the hulls, propellers, or jets of vessels. Mortality and lack of successful fertilization in broadcast spawning organisms are not rare, and a majority of the reproductive effort of broadcast spawning organisms fails naturally. While vessel movement may affect the developmental life stages of ESA-listed coral species, it likely has little impact on their reproductive output at the population level. Prior to any amphibious over-the-beach training activity conducted with larger amphibious vehicles such as LCACs or AAVs (e.g., Amphibious Assaults), a hydrographic survey and a beach survey would be required. The surveys would be conducted to identify and designate boat lanes and beach landing areas that are clear of coral, hard bottom substrate, and obstructions. LCAC landing and departure activities would be scheduled at high tide. In addition, LCACs would stay fully on cushion or hover when over shallow reef to avoid corals and hard bottom substrate. This is a standard operating procedure for safe operation of LCACs. Over-the-beach amphibious activity would only occur within designated areas based on the hydrographic and beach surveys. Similarly, AAV activities would only be scheduled within designated boat lanes and beach landing areas and would conduct their beach landings and departures at high tide one vehicle at a time within their designated boat lane (COMNAVMAR Instruction 3500.4A). Based on the surveys, if the beach landing area and boat lane is clear, the activity could be conducted, and crews would follow procedures to avoid obstructions to navigation, including coral reefs; however, if there is any potential for impacts to occur on corals or hard bottom substrate, the Navy will coordinate with applicable resource agencies before conducting the activity.

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CNMIDLNR - 18	**Marine invasive species.** Increased shipping activity and associated fouling and ballast-water organisms will introduce marine organisms to nearshore habitats, especially on Tinian. The EIS claims the likelihood of introducing invasive species is negligible-low, however the occurrence of invasive ship-related organisms in Hawai'i and Guam (Eldridge & Smith 2001, *A Guidebook of Introduced Marine Species in Hawai 'i*) suggests there is minimally a moderate chance for introduction of marine invertebrates to the CNMI. Once introduced, marine species are nearly impossible to eradicate, and the consequences of introductions are impossible to predict. The EIS 's findings appear more based on speculation and ignoring of the known threats that befouling and ballast water as vectors of marine invasive species.	The U.S. Navy recognizes the importance of biosecurity, ecological integrity, and resiliency of island ecosystems to the potential introduction of invasive species to the Mariana Islands associated with military training and testing. The Navy has a number of policies and procedures in place to prevent, interdict, and control invasive species introductions in both terrestrial and marine environments. Specific policies for marine invasive species can be found at OPNAVINST 5090.1D OPNAVINST 5090.1D Chapter 35-3.19. (Ship and Ballast Water), 5090.1D Chapter 35-3.1 (Environmentally Sound Ships), and 5090.1D Chapter 12-3.10 (Invasive Species). This information has been added to Section 3.10 (Terrestrial Species and Habitats) as part of an overall invasive species discussion that includes terrestrial, marine, and freshwater invasive species. In conclusion, the Navy maintains that introduction of invasive species associated with military training and testing activities is low. It should be noted that the Navy or other military services does not have jurisdiction of other potential pathways for introduction (e.g., commercial activities, U.S. mail, non-DoD personnel).
CNMIDLNR - 19	**Forest birds.** Proposed activities in the Marpi Maneuver Area (Saipan), Military Lease Area containing North Field (Tinian), in and around the Rota International Airport, and in forested and well-vegetated areas on Rota have the potential to negatively affect the population integrity and breeding biology of numerous forest bird species though habitat modification and human disturbance. Noise, movement, and the physical disruption of nests and roost sites would result in "take" of federally and locally protected species, or contribute to the decline of species of conservation concern.	The U.S. Navy recognizes the potential for military readiness activities to impact wildlife on Saipan (Marpi Maneuver Area), Tinian MLA, and near the Rota International Airport. Measures to reduce the potential impacts on these species have been added to Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring). As part of the Section 7 ESA consultation, the Navy has worked with the USFWS to minimize impacts on ESA-listed species. These measures will have ancillary protections for non-ESA-listed species.
CNMIDLNR - 20	• Land navigation training, airfield seizure activities, airfield expeditionary training, and ground disturbance (pedestrian and vehicular traffic) in forested and other densely-vegetated areas of the Marpi Maneuver Area will affect breeding and territory use of the federally and locally endangered Micronesian megapode and nightingale reed-warbler; the locally protected Mariana fruit dove, white-throated ground dove, collared kingfisher, Micronesian starling, rufous fantail,	The U.S. Navy recognizes the potential for military training activities to impact wildlife on Saipan (Marpi Maneuver Area), Tinian MLA, and near the Rota International Airport. Measures to reduce the potential impacts on these species have been added to Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring). As part of the Section 7 ESA consultation, the Navy has worked with the USFWS to minimize impacts on ESA-listed species. These measures will have ancillary protections for non-ESA-listed species. It should be noted that

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	and golden white-eye. The golden white eye currently appears to be in decline in this area. • Field training exercises in the Marpi Maneuver Area, particularly in or near cave entrances and in open grasslands where insects are abundant, would affect foraging, roosting, and breeding behavior of federally and locally protected Mariana swiftlets.	the types of training activities that may occur at the Saipan Marpi Maneuver Area require open field areas conducive to field training exercises. Caves, limestone forests, cliffs, and thick tangantangan thickets are avoided.
CNMIDLNR - 21	• Ground disturbance and aircraft and aerial target strikes in the Tinian Military Lease Area would negatively affect the breeding biology of Tinian monarchs. Monarchs nest between 1 to 4 meters off the ground in tangan tangan thickets. Disturbance occurring during the breeding season would result in nest abandonment and adult/chick mortality. If reproductive success is significantly affected, the Tinian monarch would be re-evaluated for federal protection under the Endangered Species Act. Collisions between aircraft and Tinian monarchs are also possible. • Special warfare training, parachute insertion, reconnaissance, field training exercises, aircraft overflight noise and prop wash from both fixed and rotary wing aircraft, exhaust from diesel-fueled vehicles, and combat search and rescue training in or near essential habitat for Mariana crows and Rota bridled-white eyes on Rota would result in the disruption of breeding activities for either or both species. Collisions between aircraft both Mariana crows and Rota bridled white-eyes are also possible.	This EIS/OEIS does not include significant ground disturbance activities within the Tinian MLA. There are no air operations that involve aerial target strikes or live-fire activities described in this EIS/OEIS over Tinian. The Navy is monitoring the regulatory status of the Tinian monarch, in reference to military training activities described in this EIS/OEIS. Aircraft noise would not adversely affect the Rota bridled white-eye because air operations do not occur over habitat areas and are limited to approaches and departures from Rota International Airport. Aircraft strikes of wildlife are considered in the EIS/OEIS and should generally be associated with commercial aircraft strike potential. There have been no reported occurrences of Mariana crow or fruit bat strikes by commercial (or military) aircraft using the Rota International Airport.
CNMIDLNR - 22	• Ground based activities including pedestrian and vehicular traffic in and around the Dugi area of Rota would negatively affect the behavior and habitat use of the critically endangered Guam rail, an endemic groundbird species that was extirpated from the CNMI but recently reintroduced as an experimental population. Evidence of this population breeding in the wild was first collected in 2013.	The types of activities that would occur on Rota do not require vehicle or pedestrian traffic in the Dugi area. The Navy's consultation with the USFWS has resulted in updated information for Guam rails on Rota, and has been incorporated into the Final EIS/OEIS. Please note that specific locations of sensitive species are not shown on maps. The EIS/OEIS considers the effects of varying noise frequencies and intensities on ESA-listed species on FDM and birds otherwise protected by the MBTA. The

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	• Ordnance use, extreme noise by fast and low passing jets, and aircraft and aerial target strikes on Farallon de Medinilla will kill and negatively affect the breeding biology of Micronesian megapodes, and it will negatively affect the behavior and reproduction of white-throated ground doves.	noise spectra for various classifications (infrasound, ultrasound, etc…) were assessed. The conclusion of this analysis is that the ESA-listed Micronesian megapode may be adversely affected. Seabirds and shorebirds on FDM will also suffer injury and mortality. Non-ESA listed bird species will likely be injured or suffer mortality, but populations, in accordance with MBTA regulations for military readiness activities, will not be adversely impacted. This conclusion is based on statistical analyses included in Section 3.6.2.6.3 (Farallon de Medinilla).
CNMIDLNR - 24	**Water birds.** Special operations and land navigation training activities in or near permanent or ephemeral freshwater impoundments on Saipan, Tinian (mostly), and Rota (nominally) would affect the use of these impoundments by birds that rely on them for foraging, breeding, and refuge. The species of greatest concern is the federally endangered Mariana common moorhen. Other species of concern include the yellow bittern and various migratory ducks that transit the CNMI seasonally. These birds are protected by the migratory Bird Treaty Act. Reed beds surrounding freshwater impoundments have potential to host federally endangered nightingale reed-warblers.	The Navy does not train in wetland areas within the Tinian MLA. These are designated areas where military personnel are excluded from during training activities. Wetlands on Saipan are not found within the Marpi Maneuver Area. No field training would occur in habitat areas on Rota. In summary, it is doubtful that impacts on water birds would occur while they are in wetlands on Rota, Tinian, or Saipan. Mitigation measures have been added to Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the Final EIS/OEIS, and are also included in COMNAVMARIANAS 3500.4A.
CNMIDLNR - 24	• Special purpose Marine air ground task force; intelligence, surveillance, and reconnaissance, and field training exercises in or near terrestrial freshwater impoundments in the Marpi Maneuver Area (in ephemeral and constructed sources) and Lake Hagoi on Tinian would disrupt the foraging and breeding activities of federally and locally protected Mariana common moorhens and federally protected migratory waterfowl such as pintail ducks. • Human activity including pedestrian and vehicular traffic and special operations in reed beds, swampy areas, or water impoundments would interfere with territory use and the reproductive success of nightingale reed-warblers. However, this concern is nominal because the most likely location where such activities would occur around Lake Hagoi, and in borrow	The U.S. Navy recognizes the potential for military training activities to impact wildlife on Saipan (Marpi Maneuver Area), Tinian MLA, and near the Rota International Airport. Measures to reduce the potential impacts on these species have been added to Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring). As part of the Section 7 ESA consultation, the Navy has worked with the USFWS to minimize impacts on ESA-listed species. These measures will have ancillary protections for non-ESA-listed species.

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	pits and bomb craters that fill with water during the rainy season, on Tinian. - and nightingale reed warblers do not occur on Tinian.	
CNMIDLNR - 25	**Migratory sea birds.** Amphibious landings, ordnance use, and human activity in and around the coast and littoral zones on Saipan, Tinian, and Farallon de Medinilla will impact individuals and groups of migratory wading birds and water birds that are either year-round residents or (more commonly) use the CNMI as a stopover point on their biannual migration pathways. These birds are locally valuable because, in many cases, they represent the only populations that occur in the CNMI, and they would be important demes or components of larger regional groups. In most cases, species of concern are protected by the Migratory Bird Treaty Act. In some cases (i.e. short-tailed albatross, Hawai' ian petrel, and Newell's shearwater), species are protected by the Endangered Species Act.	Amphibious landings on Tinian and other training and testing activities within nearshore waters surrounding Saipan, Tinian, and FDM may impact individuals and groups of foraging marine bird species. The Navy is required to assess impacts on bird species protected under the MBTA on a population level, and is required to confer with the USFWS if activities would adversely impact a population. The statistical analyses of booby species that breed on FDM showed that there have been no significant changes in population trends on FDM over the past 17 years of booby census data collection. The Navy has determined that training and testing activities would have no effect on the short-tailed albatross, Hawaiian petrel, or Newell's shearwater. The Navy is consulting with the USFWS for activities that may affect ESA-listed species.
CNMIDLNR - 26	• Increased traffic, bilge water release, and oil leakage in the Port of Saipan, Rota Harbor, and Tinian Harbor will affect foraging habits of a wide variety of shorebirds and wading birds such as Pacific golden plover, gray-tailed tattler, whimbrel, ruddy turnstone, lesser sand plover, black-winged stilt, common sandpiper, intermediate egret, little egret, and red-necked stint. • Special warfare training on or near cliffs or forested roost sites in the Marpi Maneuver Area will affect the breeding of red-tailed tropicbirds, brown noddies, black noddies, and brown boobies. • Special warfare, amphibious training activities, humanitarian assistance/disaster relief operations, special purpose Marine air ground task force exercises, and noise and prop wash from rotary-winged aircraft at Puntan Masalok, Puntan Lamanibot, and Unai Dankulo will affect the roosting and breeding activity	The Navy's standard operating procedures and response planning for bilge water releases and oil leaks may be found in OPNAVINST 5090.1D. The limited training that occurs at the Saipan Marpi Maneuver Area would not impact breeding activities of nesting seabirds on cliffs because training activities do not occur on the cliffs. Noise and other disturbance of rookeries on Tinian, and locations that are suspected to support breeding activities, are addressed in Section 3.6 (Marine Birds). It should be noted that amphibious training activities on Tinian will not likely use Puntan Masalok or Puntan Lamanibot locations because of the required improvements to the beach area. The only beach where landings could occur currently within the Tinian MLA is Unai Dankulo, Babui, and Chulu. The Navy recognizes that amphibious training activities could disturb breeding activities of species that use the area. Pursuant with the Navy's obligations under current MBTA regulations associated with military readiness activities, the Navy will assess the potential for activities to adversely impact populations of

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	of black noddies, brown noddies, brown boobies, and Pacific reef herons.	these bird species. The Navy has determined that amphibious training exercises on Tinian would not adversely impact the population of black noddies, brown noddies, brown boobies, Pacific reef herons, or other bird species protected under the MBTA.
CNMIDLNR - 27	• Amphibious landings on Tinian landing beaches will affect foraging migratory shorebirds, including Pacific golden plovers, whimbrels, and gray-tailed tattlers. • The use of large-sized or a large volume of Mark 77 (incendiary) and Mark 80 series (high explosive) series bombs on Farallon de Medinilla will increase risk of wildfire on the island, which would kill or destroy vital habitat for tree- and forest-nesting birds such as the Micronesian megapode and red-footed booby. • The excessive overpressure, shock waves and noise (> 100 dBA) from the detonations will be sufficient to frighten birds away from the area. This departure will be especially detrimental during mating and nesting periods.	The Navy included ground disturbance to migratory shorebirds and seabirds in the Final EIS/OEIS. Ground disturbance is included as a stressor category in Final EIS/OEIS Section 3.6.3.3.4 (Impacts from Ground Disturbance). The direct strike of birds associated with amphibious landings on Tinian are analyzed under Section 3.6.3.3.2 (Impacts from Vessels and In-water Devices). It should be noted that red phosphorous is used in spotting charges only, and is not a main constituent of any munitions use on FDM. Incendiary devices, such as the Mark 77, is specifically prohibited and range management activities, such as unexploded ordnance disposal and vegetation maintenance around targets, reduces the wildfire risk potential. The small amount of phosphorous used for the spotting charge is typically fully consumed. Section 3.6.3.1 (Acoustic Stressors) discusses startle response, and the indirect effects of leaving nests (such as damaging eggs, exposing nestlings to predation, and other factors that may decrease reproductive success). In addition, Section 3.6.3.1.2.3 (No Action Alternative) discusses FDM-specific effects, including a discussion of different frequencies (e.g., infrasound, ultrasound, bow waves, repetitive percussive sound, and shockwaves). On land at FDM, impacts would range from behavioral responses to direct mortality.
CNMIDLNR - 28	• Byproducts of detonation, including flame, heat, light, and hot gasses from Mark 82 (500 pound), Mark 83 (1000 pound), and Mark 84 (2000 pound) bombs on Farallon de Medinilla risk eliminating or negatively affecting whole colonies of breeding birds from explosive or percussive force and shrapnel. • Excessive radiant heat from trimethylaluminum and triethylaluminum combustion in Mark 80 series (high explosive) ordnance in or near rookeries in the northern and	As stated in Section 3.6.3.3.5.1 (No Action Alternative, Alternative 1, and Alternative 2), white phosphorous, live cluster weapons/scatterable munitions, fuel air explosives, incendiary and smoke devices, or bombs greater than 2,000 pounds are not authorized for use on FDM. Red phosphorous is used in spotting charges only, and is not a main constituent of any munitions used on FDM. It should be noted that high explosive ordnance is only authorized for Impact Area 2 and Impact Area 3. These locations are south of Impact Area 1 (inert ordnance only used here) and the northern Special Use Area. Radiant heat emitted from high explosives detonated within Impact Areas 2 and 3 are not expected

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	southern forested areas and the eastern sea caves of Farallon de Medinilla will kill and affect the breeding biology of white-tailed tropic birds, red-tailed tropic birds, brown noddies, black noddies, red-footed boobies, brown boobies, masked boobies, sooty terns, and great frigate birds. • The use of high explosives in smoke, tracer, illumination, and incendiary munitions containing white phosphorous will encourage smoke inhalation by birds and will acidify soil and plant tissue. The acid, until it is degraded by sunlight and microorganisms, will be adsorbed onto food items and come into contact with the tissues of ground-dwelling birds such as the Micronesian megapode and white-throated ground dove, damaging these tissues.	to impact rookeries on cliffs or northern forests of the island.
CNMIDLNR - 29	• White phosphorus will cause injuries and death in organisms by burning deep into tissue, by being inhaled as a smoke, and by being ingested. White phosphorous sticks to the skin of organisms. Phosphorus burns carry a greater risk of mortality than other types of burns due to the absorption of phosphorus into the body through the burned location, resulting in significant organ, notably liver, damage. • Burning white phosphorus produces a hot, dense, white smoke consisting mostly of phosphorus pentoxide which, in even moderate concentration, will irritate the eyes, mucous membranes, and respiratory tracts of wild animals. • White phosphorus particles in the air may acquire a protective coating that makes them unreactive for several days. In water, white phosphorous slowly reacts with dissolved oxygen and may persist for hours to days. Chunks of white phosphorus coated with protective layers may persist in water and soil for years if oxygen levels in water and soil are low. White phosphorus will bioaccumulate in fish in contaminated water and in birds in contaminated areas.	Please see response to comment CNMIDLNR-28 for prohibitions on white phosphorous and other incendiary munitions use.

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CNMIDLNR – 30	• The use of high explosives containing thermites will result in the deposition of heavy metal residues that contain chromium, manganese, iron, barium, and lead (depending on the composition of the thermites that are used) on the surface of Farallon de Medinilla. Heavy metal residues will be adsorbed onto soil, bioaccumulated in low trophic-level organisms (including microorganisms, plants, and soil-dwelling animals), and ingested by ground-feeding birds such as the Micronesian megapode and white-throated ground dove. • Heavy metals will also be washed into the ocean in precipitation and erosion events and bioaccumulated in fish that are ingested by white-tailed tropicbirds, red-tailed tropicbirds, brown noddies, black noddies, red-footed boobies, brown boobies, masked boobies, sooty terns, and great frigate birds. These heavy metals are toxic in relatively small concentrations. • It is reasonable to expect that a proportion of the detonations in the proposed bombing and shelling locations will be low-order. Low-order detonations will result in the deposition of large quantities of toxic high explosives in soil and water. There is, furthermore, potential for delayed detonations as a result of impacts by organisms. The deposition of unexploded ordnance on and around Farallon de Medinilla will create a persistent physical hazard for wildlife and human users of the island and its coastal waters. • The use of chemically-propelled munitions and high explosives, particularly when loworder detonations occur, will result in the deposition of propellant constituents such as nitroglycerin, perchlorate, and unbound propellant fibers - and explosive constituents such as 2,4,6-trinitrotoluene (TNT), hexa-hydro-1 ,3,5-trinitro-l ,3,5-triazine (RDX), octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX), and trimethylaluminum and triethylaluminum powder - in the soil on Farallon de Medinilla. Accumulation of these substances on	Please see response to comment CNMIDLNR-28 for prohibitions on white phosphorous and other incendiary munitions use. Section 3.1 (Sediments and Water Quality) and Section 3.2 (Air Quality) refer to explosives that remain after detonation and are not fully consumed. Within Section 3.1 (Sediments and Water Quality), fate and transport of specific chemicals are discussed specific to the chemical properties. Although binding to sediments is one possible outcome (e.g., for PCBs), other chemical pollutants behave differently. For example, when metals are exposed to seawater, they begin to slowly corrode, a process that creates a layer of corroded material between the seawater and uncorroded metal. This layer of corrosion removes the metal from direct exposure to the corrosiveness of seawater, a process that further slows movement of the metals into the adjacent sediments and water column. This is particularly true of aluminum. Elevated levels of metals in sediments would be restricted to a small zone around the metal, and any release to the overlying water column would be diluted and influenced by mixing and diffusion. Although there are few specific studies on bioaccumulation in the CNMI, there are other studies cited concerning metals deposition in the marine environment in waters off of military training ranges. For example, Section 3.1.3.2.3 (Impacts from Metals) of the Final EIS/OEIS discusses multiple studies off of Vieques Island in Puerto Rico, Pamlico Sound in North Carolina and a Canadian military site (Canadian Forces Maritime Experimental and Test Ranges near Nanoose Bay, British Columbia) for lead and lithium. The studies discussed in new text added in Section 3.1.1.1.1.7 (Other Contributions to Sediments) suggest that the majority of concerns regarding bioaccumulation are associated with urban coastal environments with specific point source and non-point source contributors of pollutants. The studies concerning military sites suggest that metals exposed to seawater are a less concern because of decreased bioavailability (see discussions in Section 3.1.3.2.3, Impacts from Metals, of the Final EIS). In the terrestrial environment of FDM, metals may bioaccumulate and reside in terrestrial vegetation; however, the residency time for metals in the soil is likely less than other military live-fire ranges (because of thin soils or bare ground prominent on FDM,

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	and in the soil (TNT and perchlorate adsorb to soil, and they can be transported during soil erosion) and the biological transformation of TNT into highly toxic metabolites such as 2,6-DNT and 2,4-DNT will result in the poisoning of ground-feeding birds such as the white-throated ground dove and the Micronesian megapode. Migration of these chemicals through the soil to the coastal and pelagic zones surrounding the island (RDX and HMX are known to migrate through soils) will result in the poisoning of corals, fish, and piscivorous birds such as white-tailed tropicbirds, red-tailed tropicbirds, brown noddies, black noddies, red-footed boobies, brown boobies, masked boobies, sooty terns, and great frigate birds. Accumulation of these substances would also result in the risk of an explosive hazard.	convex shape of FDM, and frequency of runoff events).
CNMIDLNR - 31	• Decelerators and parachutes used on ordnance that are not destroyed in the blast risk entangling land birds and choking seabirds that ingest them (if they are washed into the ocean they risk being mistaken for prey items such as squid). • Ordnance use on Farallon de Medinilla or small rock islets or atolls in the MITT area will displace or kill the federally endangered short-tailed albatross, Hawai'ian petrel, and Newell's shearwater. • Disruption of brown, red-footed, and masked booby nests will have particularly devastating effects for the reproductive success these species, since brown and masked boobies are socially monogamous, and all boobies exhibit bi-parental care. • Ordnance use and associated erosion on the island will likely negatively impact seabirds that forage on the bottom- and reef-breeding fishes of Farallon de Medinilla's productive fishery.	This comment addresses the potential of decelerators to entangle or be ingested by seabirds on FDM and other foraging disruptions associated with erosion and sedimentation of marine habitats around FDM. The EIS/OEIS addresses potential ingestion by seabirds of various forms of military expended materials, including parachutes. Decelerators are not used in munitions associated with FDM or any distance less than 3 nm from FDM. FDM is the only live-fire range in the Mariana Islands, small rock islets or atolls in the Study Area are not targeted. Based on the known distribution of ESA-listed seabird species (short-tailed albatross, Hawaiian petrel, and Newell's shearwater), the Navy has determined that training and testing activities would have no effect on these species; therefore, the Navy is not seeking a permit pursuant with Section 7(a)(2) of the ESA for the incidental take of these species. The Navy agrees that military training on FDM may kill or injure brown, red-footed, and masked boobies that breed on FDM. The Navy, since the late 1990s, has maintained restrictions so that only impact areas are targeted, and explosive ordnance is only permitted in two of the three impact areas. Areas outside of the impact areas are not targeted (there are 6 designated Naval Surface Firing Support targets outside of impact

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		areas along the western cliff). These effects will not adversely impact marine bird populations. This statement is in accordance with 50 C.F.R. Part 21, and supported by statistical analysis added to the Final EIS/OEIS. The results of the statistical analysis of 17 years of monthly and quarterly bird counts of the three booby species that nest on FDM are included in Section 3.6.2.6 (Rookery Locations and Breeding Activities within the Mariana Islands Training and Testing Study Area). The results of the statistical analysis do not show any significant changes in the booby species population trends over the past 17 years of data collection. Information regarding potential sediment runoff from military use of FDM has been added to the sediments and water quality section (Section 3.1, Sediments and Water Quality) of the EIS/OEIS. Information regarding how erosion from FDM may impact specific resources has been added to particular resource sections (e.g., marine communities, marine invertebrates, fish, sea turtles, and marine mammals). Further, the EIS/OEIS now cites the Mariana Islands Range Complex Operational Range Clearance Plan, dated June 2013. This plan outlines specific procedures and schedules for range clearance on FDM. The siting of targets and impact areas consider protections to relatively higher quality habitat in the northern portion of the island, the narrow land bridge, and various limestone cave features along the coast. The Navy believes that the location of the impact areas offer the least impacts to fulfill military mission requirements of the range.
CNMIDLNR - 32	**Terrestrial mammals.** Two terrestrial mammals, the Mariana fruit bat and Pacific sheathtailed bat, are endemic to the CNMI, but proposed activities are only likely to directly impact the fruit bat. Fruit bats are extremely sensitive to human presence and activity, including sight, low amplitude (40-60 dB, although only anecdotal data exist) noise, and scent. Pacific sheath-tailed bats only occur in the CNMI on Aguiguan, but their historic range includes Saipan, Tinian, and Rota. Some interisland dispersal would still occur, and reintroduction of this species to Rota is presently being considered. No proposed activities in the MITT EIS are likely to	The Navy agrees that Rota is an important location for the threatened Mariana fruit bat, and important to the future recovery of the Pacific sheath-tailed bat. The Final EIS/OEIS has been clarified with information regarding where training activities on Rota may occur. These locations include the Rota International Airport, Angyuta Island, the Commonwealth Port Authority pier space, and other locations in agreement with local officials on Rota. These locations do not include habitat for the Mariana fruit bat or potential reintroduction locations for the Pacific sheath-tailed bat on Rota. Further, the Final EIS/OEIS has been updated with conservation measures included in the USFWS Biological Opinion provided to the Navy to conclude the Section 7 ESA

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	affect this species, but low-ceiling flights and use of cave entrances would affect this species' likelihood to colonize unused habitat and range. Mariana fruit bats are listed as threatened under the Endangered Species Act, and Pacific sheath-tailed bats are candidate species for listing.	consultation process.
CNMIDLNR - 33	• Aircraft noise, land navigation training, special warfare training, and ground disturbance (pedestrian and vehicular traffic) in limestone and ravine forest on Rota and the Marpi Maneuver Area would negatively affect roosting and breeding colonies and foraging habits of Mariana fruit bats. Low flying aircraft and ground based maneuvers would potentially result in adult flushing and pup abandonment. • Close air support for urban warfare training in "mock urban environments" on Rota would disrupt colonies of Mariana fruit bats. • Ordnance use on Farallon de Medinilla will destroy Mariana fruit bat habitat and likely kill individuals of this species. Killing breeding adults would have particularly significant effects, since long-term maternal care is required for the successful rearing of young.	There are no ground disturbing activities that are proposed for Rota. Training and testing activities will not occur in habitat areas on Rota. Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) has been updated with conservation measures included in the USFWS Biological Opinion. The Navy agrees that ordnance use on FDM may adversely affect the Mariana fruit bat. The Mariana fruit bats on FDM were included as part of the Navy's Section 7 ESA consultation with the USFWS. The Final EIS/OEIS has been updated with findings included in the USFWS Biological Opinion.
CNMIDLNR - 34	**Terrestrial reptiles.** CNMI hosts two species of endemic geckos (the Micronesian gecko and the slender-toed gecko) and two species of skinks (the tide-pool skink and the Slevin's skink). All are believed to be in decline (some significantly) and are of particular conservation concern. Habitat disturbance and modification and the promotion of reptilian competitors such as the common house gecko are the biggest threats to CNMI' s endemic terrestrial reptiles. • Amphibious assault and amphibious raids at Unai Chulu would negatively impact suspected tide-pool skink and snake-eyed skink populations adjacent to the beach.	The presence of the terrestrial reptiles cited in the comment has been added to the Final EIS/OEIS. Amphibious landing vehicle operators avoid tidepools (surrounded by limestone rocks) for safety purposes to protect vehicles (e.g., cushions and hulls) and personnel. It should be noted that the Navy also maintains standard operating procedures that reduce the likelihood for invasive species introductions, including species that compete with or prey upon native geckos and skinks.

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	• Land navigation training, airfield seizure activities, airfield expeditionary training, and ground disturbance (pedestrian and vehicular traffic) in the native forests of the Mangpang, Lasu, and Basea areas on the Military Lease Area on Tinian will disturb important habitat for the Micronesian gecko. This is a particular concern, since this area has provided the most recent (1995) evidence of the last intact population of Micronesian geckos in the archipelago.	
CNMIDLNR - 35	• Refuse heaps associated with training, encampments, and development sites would provide additional foraging habitat for (and encourage the population growth of) mangrove monitor lizards, which are terrestrial predators of endemic birds and reptiles.	Training activities on Tinian must be in adherence with stated garbage handling restrictions found in the COMNAVMARIANASINST 3500.4A (page 70, part [d] Garbage). All trash generated by military units training on Tinian must be transported off island for proper disposal, as the Tinian landfill is not currently authorized for military garbage. Garbage is typically transported to the landfill on Saipan.
CNMIDLNR - 36	**Terrestrial invertebrates.** The native invertebrate fauna of the CNMI is poorly studied but diverse. While the conservation status of most invertebrate species (particularly insects) is unknown, several charismatic species (mostly Lepidopterans) have been described. Two, the Marianas eight-spot butterfly and the Marianas wandering butterfly, are of particular interest because of their declining and fragmented populations. Proposed military activities have a low likelihood of affecting these populations, but activities that alter habitat would affect crucial breeding resources. • Close-quarter combat, land demolitions, airfield seizure, convoy, and land navigation training is conducted on non-DOD lands in karst limestone forest within the Marpi Maneuver Area an within the Military Lease Area on Tinian have potential to directly affect the Mariana eight-spot butterfly, and to indirectly affect its habitat and host plants.	This comment concerns the potential impacts of training and testing activities within the Saipan Marpi Maneuver Area on limestone-obligate invertebrate species. It should be noted that training within limestone forests of the Marpi Maneuver Area is prohibited. Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) has been updated to include conservation measures included in the USFWS Biological Opinion provided to the Navy at the conclusion of the Section 7 ESA consultation process.
CNMIDLNR - 37	• Land navigation training in sub-canopy vegetation in lower strata of intact limestone forest in the Marpi Maneuver Area would destroy habitat or individuals of the humped tree snail,	Please see response to comment CNMIDLNR-36 for prohibitions on training within limestone forests of the Saipan Marpi Maneuver Area. Similarly, training is prohibited within intact limestone forests of Tinian

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	which is a candidate species for federal listing. • Land navigation training in sub-canopy vegetation in lower strata of intact limestone forest in the Military Lease Area on Tinian would destroy habitat or individuals of the Langford's tree snail, which is a candidate species for federal listing. • Land navigation training in sub-canopy vegetation in lower strata of intact limestone forest in native forests of Rota would result destruction of individuals or habitat of the fragile tree snail, which is a candidate species for listing. • Land navigation training, survival training, airfield seizure activities, airfield expeditionary training, and ground disturbance (pedestrian and vehicular traffic) in forested and other densely-vegetated areas of the Marpi Maneuver Area would negatively affect locally protected coconut crabs.	and Rota. Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) has been updated to include conservation measures included in the USFWS Biological Opinion provided to the Navy at the conclusion of the Section 7 ESA consultation process.
CNMIDLNR - 38	**Terrestrial invasive species.** Movement of vessels and cargo from Hawai'i and Guam increases the risk of introducing invasive species that are present on both islands. Of particular concern are invasive insects (mostly hymenopterans, hemipterans, coleopterans, and dipterans) and pathogens that have not been detected in the CNMI, but that are easily transported and overlooked in superficial inspections that would presumably be performed at ports of entry and by line personnel during maneuvers. Invasive terrestrial insects, once established, are nearly impossible to eradicate, and they can cause significant damage to crops and wildlife habitats, and they can prey directly on species of conservation concern. They can also contribute to pestilence and be vectors for human, animal, and zoonotic disease. Of additional concern is the introduction of the brown tree snake and other invasive reptiles and amphibians such as the greenhouse, eastern dwarf tree, Indian rice, Hong Kong whipping, coqui, and Gunther's amoy frogs from Hawai'i or	The U.S. Navy recognizes the importance of biosecurity, ecological integrity, and resiliency of island ecosystems to the potential introduction of invasive species to the Mariana Islands associated with military training and testing. The Navy has a number of policies in place to prevent, interdict, and control invasive species introductions in both terrestrial and marine environments. Specific policies for marine invasive species can be found at: OPNAVINST 5090.1D Chapter 35-3.19. (Ship and Ballast Water), 5090.1D Chapter 35-3.1 (Environmentally Sound Ships), and 5090.1D Chapter 12-3.10 (Invasive Species). For potentially invasive terrestrial species, the Navy has in place a number of policies and procedures to reduce or remove species from potential introduction pathways. These measures include coordination with USDA APHIS for inspection procedures for incoming cargo, equipment, and personnel from foreign locations. This information has been added to Section 3.10 (Terrestrial Species and Habitats) as part of an overall invasive species discussion that includes terrestrial, marine, and freshwater invasive species. In conclusion, the Navy maintains that introduction of invasive species associated with military training and testing activities is low. It should be noted that the Navy or other

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	Guam. Similarly, the facilitation of terrestrial vertebrate species that are invasive but already established in the CNMI. Such species include rats (particularly the Malaysian black rat on Tinian), mice, and shrews. These species are all significant threats to ground- and tree-nesting birds, and to endemic snails and skinks.	military services does not have jurisdiction of other potential pathways for introduction (e.g., commercial activities, U.S. mail, non-DoD personnel).
CNMIDLNR - 39	• Movement of vessels and cargo greatly increases the risk of the introduction of predatory ants such as the little fire ant, which has invaded Guam in the last decade and is causing significant agricultural damage. Other ants of concern include the Argentine ant and red imported fire ant. • Movement of vessels and cargo would also facilitate the establishment of yellow crazy ants, which are already present in the CNMI (on Saipan and Tinian) but at low densities. Importing yellow crazy ants from other regions would encourage aggressive interactions and the establishment of supercolonies. High densities of yellow crazy ants pose significant threats to land crabs; snails; and ground-, cup-, and cavity-nesting birds. • Similarly, traffic from Hawai'i and Guam would facilitate the establishment of the bigheaded ant, which was first detected in the Marianas in 1990 and is present at low densities. While the bigheaded ant does not attack humans, it is a well-known household and agricultural pest. When established, it can decimate populations of native invertebrates.	The U.S. Navy recognizes the importance of biosecurity, ecological integrity, and resiliency of island ecosystems to the potential introduction of invasive species to the Mariana Islands associated with military training. The Navy has a number of policies in place to prevent, interdict, and control invasive species introductions in both terrestrial and marine environments. Specific policies for marine invasive species can be found at: OPNAVINST 5090.1D Chapter 35-3.19. (Ship and Ballast Water), 5090.1D Chapter 35-3.1 (Environmentally Sound Ships), and 5090.1D Chapter 12-3.10 (Invasive Species). For potentially invasive terrestrial species, the Navy has in place a number of policies and procedures to reduce or remove species from potential introduction pathways. These measures include coordination with USDA APHIS for inspection procedures for incoming cargo, equipment, and personnel from foreign locations. This information has been added to Section 3.10 (Terrestrial Species and Habitats) as part of an overall invasive species discussion that includes terrestrial, marine, and freshwater invasive species. In conclusion, the Navy maintains that introduction of invasive species associated with military training activities is low. It should be noted that the Navy or other military services does not have jurisdiction of other potential pathways for introduction (e.g., commercial activities, U.S. mail, non-DoD personnel).
CNMIDLNR - 40	• Increased traffic and shipment of cargo, building materials (notably wood and wood products), vehicles, and personnel from Guam would facilitate the importation of cycad *Aulacaspis* scale crawlers, which would infect the last intact colony of CNMI's native cycad species, *Cycas micronesica*. • Traffic from Hawai'i and Guam would facilitate the importation of *Culex* spp. mosquitoes from Hawai'i that are	Please see response to CNMIDLNR-39, in regards to the Navy's policies and procedures for invasive species control and interdiction.

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	carriers of West Nile virus, filariasis, Japanese encephalitis, Saint Louis encephalitis, and avian malaria. Endemic birds have low resistance to introduced pathogens such as avian malaria. This disease has decimated the lowland avifauna of Hawai' i. • Traffic from Hawai'i and Guam would facilitate the importation of *Anopheles lesteri* from Guam, which readily attacks humans and is a primary vector of human malaria. • Traffic from Hawai'i and Guam would facilitate the importation of *Aedes* spp. mosquitoes from Guam, which are vectors for Yellow fever, dengue fever, and filariasis.	
CNMIDLNR - 41	• Land navigation training in sub-canopy vegetation in limestone forest and tangan forest in the Marpi Maneuver Area and Military Lease Area will exacerbate the spread of introduced red-brown paper wasps (*Polistes olivaceus*) and Indonesian paper wasps (*Ropalidia marginata sundaica*). Structure building (including temporary structures) would facilitate wasp reproduction. • Movement of personnel and cargo from Guam and Hawai'i will increase the likelihood of introduction of the brown tree snake, noxious weeds, and invertebrates to Tinian via if transport vessels, cargo, and personnel are not fully inspected prior to departure by trained staff.	Please see response to CNMIDLNR-39, in regards to the Navy's policies and procedures for invasive species control and interdiction. It should be noted that the limestone forest areas within the Saipan Marpi Maneuver Area are not used for training.
CNMIDLNR - 42	• Parachute drops and personnel insertion at the airports on Tinian and Rota will increase the likelihood of introduction of noxious weeds and invertebrates. • Increased traffic at ports of entry and among islands within the archipelago will strain already limited quarantine, inspection, and response resources in place to monitor for invasive species such as the brown tree snake. The existing infrastructure is already insufficient for the volume of traffic	Please see response to CNMIDLNR-39, in regards to the Navy's policies and procedures for invasive species control and interdiction, including the brown treesnake.

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	and degree of risk. Increased traffic will exacerbate the problem and increase the likelihood of the introduction of invasive species. We recommend that DOD provide funding to augment existing CNMI Brown Treesnake Interdiction Program.	
CNMIDLNR - 43	**Plants.** Proposed ground maneuver activities that involve vegetation clearing present the risk of affecting plants that are protected by the Endangered Species Act, or that are under consideration for protection. • Amphibious activities at Unai Masalok would disrupt a rare population of endemic *Euphorbia sparrmannii* var. *tinianensis*. • Amphibious activities at Unai Chiget would disrupt a unique stand of forest of lantern trees (*Hernandia labyrinthica* var. *ovigera*). • Land navigation training, airfield seizure activities, airfield expeditionary training, and ground disturbance (including pedestrian and vehicular traffic) in vegetated areas of the Marpi Maneuver Area and Military Lease Area would kill or otherwise damage important host plants for the Marianas eight-spotted butterfly *Procris pedunculata* or *Elatostema calcareum*.	The Navy does not train in areas that support the three ESA-listed plant species within the Mariana Islands. Please see response to comment CNMIDLNR-36 for prohibitions on training within intact limestone forest areas. Amphibious beach repairs at Unai Chiget and Unai Masalok would likely require some vegetation removal. If vegetation removal is required, these activities would require separate NEPA analyses. The host plants for the Mariana eight-spot butterfly, *Procris pedunculata* and *Elatostema calcareum*, occur in intact limestone forest areas. Intact limestone forests occur within the Military Lease Area on Tinian and within the Marpi Maneuver Area (on Saipan); however, military training activities described in the Draft EIS do not occur in these areas. See Section 3.10.2.4.2 (Mariana Eight-Spot Butterfly [*Hypolimnas octocula mariannensis*) and Mariana Wandering Butterfly [*Vagrans egistina*]) under the "Status within the Mariana Islands Training and Testing Study Area."
CNMIDLNR - 44	• Land navigation training, ground disturbance (including pedestrian and vehicular traffic), and even nominal vegetation clearing in forested areas of Rota would negatively affect or kill rare individuals of federally endangered *Serianthes nelsonii*, *Osmoxylon mariannensis*, and *Nesogenes rotensis* plants on Rota. • Such activities would also negatively affect candidate species on Saipan, Tinian, and Rota, including *Bulbophyllum guamense* (Rota), *Coelogyne guamensis* (Saipan, Rota), *Cycas micronesica* (Saipan, Tinian, Rota), *Dendrobium guamense* (Tinian, Rota),	The Navy does not train in habitat areas on Rota; therefore, no ground disturbing activities would occur in these locations. Please see Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the Final EIS/OEIS for an updated list of conservation measures. COMNAVMARIANAS 3500.4A (Chapter 5 Section 3(b) explicitly prohibits maneuver training and cutting/pruning of any tree known to support the Mariana fruit bat roosting/foraging, Mariana crow foraging/nesting, or used by the Rota bridled white-eye. No training and testing activities occur near or within critical habitat or habitat occupied by ESA-listed species. The Navy disagrees with the comment that the plants listed in

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	Eugenia byranii (Saipan, Tinian, Rota), *Heritiera longipetiolata* (Tinian, Rota), *Nervilia jacksoniae* (Rota), *Solanum guamense* (Saipan, Tinian, Rota), *Tabernaemontana rotensis* (Rota), and *Tuberolabium guamense* (Tinian, Rota).	comment will be compromised due to training activities.
CNMIDLNR - 45	**Socioeconomic.** The impact to socioeconomic resources by the MITT is not expected to occur based on the EIS 's determination that co-use would be temporary and short duration (hours). Increased military activities in the archipelago will significantly alter lifestyles and attitudes of and perceptions toward people in the archipelago. • Inadequate information provided in the MITT EIS on the duration of activities precludes any meaningful assessment on socioeconomic impact. The fact that the number of naval activities involving ordnance, particularly on Farallon de Medinilla, is noted in activities per year has no bearing on how long these activities will limit accessibility. Their duration of 'several hours' is too vague and open to interpretation that would close Farallon de Medinilla' s waters (outside the 3 nm Danger Zone, R-7201) for extended periods. • The sheer quantity of military activities in the vicinity of Farallon de Medinilla (within R- 7291 A) suggests a more protracted closure of the surrounding productive reef area to commercial and sport fishing. An analysis of the total area of reef taken by the 3nm Restricted Zone, and the 10 and 12 nm Danger Zones also shows the areal extent and impact of this closure would have on fishing. A total of the reef area exclusion would constitute 29, 93 and 98% of Farallon de Medinilla's fishable reef area. Thus, it seems more likely the activities on Farallon de Medinilla will impose a significant take of the CNMI's most productive fishing grounds.	The proposed increase in military activities will likely result in increased closure times around FDM. The Navy is aware that this may affect access to fishing sites, but regards the safety of fishermen and other boaters as a top priority, and the 12 nm Danger Zone is necessary to ensure safety. While the number of proposed activities increases under Alternatives 1 and 2, the increase may not result in a proportional increase in the number of days when the 12 nm danger zone is temporarily closed. The increase in the number of activities could translate to an increase in the closure time for one day and not necessarily additional closure days. The map of the area around FDM (Figure 3.12-4) has been revised to show the bathymetry around the island as a proxy for fishing sites (no data on specific fishing sites are available). Areas shallower than 400 m are considered potential fish habitat accessible to bottom trawlers. While some areas within the 12 nm danger zone will not be accessible during certain activities for safety reasons, access will only be limited temporarily and not for all activities occurring at FDM. The map also highlights potential fishing areas (areas less than 400 m in depth) located outside of the danger zone. The military currently issues NOTMARs out to 12 nm around FDM and is seeking a congruent C.F.R danger zone. The Navy is also planning to announce upcoming periods when FDM will not be used for several consecutive days to allow mariners to plan to fish or transit through the danger zone between 3nm and 12 nm around FDM. The military understands that fishing is an important socioeconomic and cultural resource for the people of the CNMI and will continue to work with the fishing community to enable safe access to fishing areas around FDM.
CNMIDLNR - 46	• Tinian's beaches - impacts to tourism. Areas are secluded beaches that are an attraction for tourism.	No danger zone is being proposed in waters off Tinian. Temporary closure of nearshore waters off Tinian for specific activities to ensure the safety of the public and military personnel would occur infrequently.

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	• There is concern for activities on Tinian which may impose a littoral Danger Zone that would exclude boats from coming close to shore along the northern half of the island. The western side of the island is both a productive fishing ground and tourist destination for SCUBA diving. The shipping lane from Saipan to Tinian would also be included in this Danger Zone. This would increase shipping time and cost to avoid the area. The extended closure of this area during naval activities would therefore impose a significant economic and cultural take of the CNMI' s resources. • The EIS does not provide information including dates and location of activities, which would be critical for coordinating commercial, recreational, and subsistence fishing activities.	Specific dates and times that activities would occur is not available and cannot be projected years in advance. Activities potentially occurring off Tinian and the number of times the activities would occur annually are presented in Table 2.8-1 in Chapter 2 (Description of Proposed Action and Alternatives). Up to six Amphibious Warfare activities may require access to beaches on Tinian (see Appendix A, Training and Testing Activities Descriptions, for additional information on activities), limiting the number of times the area would be closed to the public and minimizing the potential impact on tourism. The Military Lease Agreement between the military and the CNMI permits use of specific areas around Tinian for military activities throughout the year. When activities are not taking place, these areas are typically open to the public. Analysis in Section 3.12 (Socioeconomics) concludes that while impacts on accessibility and tourism may occur there would be no significant impacts on accessibility to beaches and dive sites given the infrequent occurrence of nearshore activities that would limit access to beaches and dive sites and the availability of alternate beaches and dive sites.
CNMIDLNR - 47	• Economic impact to the marine recreation industry would be evident once closures are established within the Tinian Safety Designation Zone. Dive sites such as the Tinian Grotto, Fleming Wall and Dump Cove are regularly used by dive operators in Tinian and Saipan. • The overall impact is that the military's increased activities will have the potential to impact recovery efforts for those corals proposed for Endangered Species Act listing. Ultimately the decrease in locally-protected corals may severely handicap the CNMI when local projects (e.g. harbor improvement or dredging) require assessment of local populations and mitigation. • Amphibious landings on Tinian Island will significantly degrade areas that have low relief and sandy beach areas (e.g. Unai Babui, Unai Chulu and Unai Dankulo), where there are low-energy leeward reefs and high coral development.	No danger zone is being proposed in waters off Tinian. Temporary closure of nearshore waters off Tinian for specific activities to ensure the safety of the public and military personnel would occur infrequently. Section 3.8 (Marine Invertebrates) includes an analysis of marine species and habitats including the five species of marine invertebrates (all corals) listed under the ESA. As described in the Physical Disturbance and Strike Stressor section of 3.8 (Marine Invertebrates), prior to any amphibious over-the-beach training activity conducted with larger amphibious vehicles such as LCACs or AAVs (e.g., Amphibious Assaults), a hydrographic survey and a beach survey would be required. The surveys would be conducted to identify and designate boat lanes and beach landing areas that are clear of coral, hard bottom substrate, and obstructions. LCAC landing and departure activities would be scheduled at high tide. In addition, LCACs would stay fully on cushion or hover when over shallow reef to avoid corals and hard bottom substrate. This is a standard operating

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	Tracked vehicles and other landing craft will undoubtedly crush delicate corals and reef structure that is critical fish habitat. The decimation of reefs constitutes a long-term taking of resources that are critical for fisheries recruitment and sustainability. The destruction of corals also destroys quality SCUBA and snorkel sites in these areas used by locals and tourists.	procedure for safe operation of LCACs. Over-the-beach amphibious activity would only occur within designated areas based on the hydrographic and beach surveys. Similarly, AAV activities would only be scheduled within designated boat lanes and beach landing areas and would conduct their beach landings and departures at high tide one vehicle at a time within their designated boat lane (COMNAVMAR Instruction 3500.4A). Based on the surveys, if the beach landing area and boat lane is clear, the activity could be conducted, and crews would follow procedures to avoid obstructions to navigation, including coral reefs; however, if there is any potential for impacts to occur on corals or hard bottom substrate, the Navy will coordinate with applicable resource agencies before conducting the activity. Hydrographic and beach surveys would not be necessary for beach landings with small boats, such as Rigid Hull Inflatable Boats (RHIBs).
CNMIDLNR - 48	**Avoidance, Monitoring, and Mitigation of Effects.** We recommend that the following items be provided by DOD to enable the Commonwealth to independently and objectively predict, monitor, and evaluate the impact of military activities proposed in this EIS. • Provide regional (i.e. within the CNMI's territorial lands and waters) population estimates of all terrestrial and aquatic species likely to be impacted by activities in this proposal, and that are listed in this response (these species are condensed into a list in Appendices A and B of this correspondence). • Provide funds for an archipelagic-wide molecular analyses (nuclear and mtDNA) of selected marine and terrestrial species of concern, as designated by DLNR or DFW, to assess island-specific effective population size and genetic connectivity. • Provide a summary of the number of species on this list that have been impacted (both Type A and type B "take") by DOD training activities in the region in the last 20 years.	Unfortunately, conducting studies and providing funds as requested would not be feasible or necessary based on the level of impacts expected and are not required under NEPA. The Navy will continue to coordinate to the greatest extent practicable with the CNMI resource agencies to ensure current information is considered in the planning process for training and testing activities in the Marianas. As an example, CNMI DLNR biologists have been invited to participate on aerial surveys of FDM. More formal coordination with local stakeholders occurs through the Navy's Sikes Act obligations and the development of the Joint Region Marianas INRMP. The Navy has been implementing a marine species monitoring plan since 2009 which is comprised of marine mammal and sea turtle monitoring throughout the MITT Study area. In addition, marine species monitoring reports are posted on www.navymarinespeciesmonitoring.us and www.mitt-eis.com

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	• Provide funds for CNMI or an independent third-party contractor to perform pre/post inventories of ecosystems most likely to be significantly impacted by proposed activities, such as North Field Naval Air Station (including native limestone and tangan tangan forests adjacent to runways and proposed construction sites, the cycad plantation, wetlands such as Lake Hagoi and adjacent ephemeral water freshwater impoundments where Mariana moorhens have been detected, beaches where sea turtles have been observed nesting and surrounding waters, corals, and the littoral zone adjacent to amphibious landing beaches) and Farallon de Medinilla (including surrounding waters and the coral reef west of the island). • Allow a full review of environmental surveys by the military (or contractor) *a priori* by DFW staff. Involve DFW staff in the planning of surveys and pre- and post-survey scientific review. • Allow DFW staff members to inspect areas likely to be impacted by training activities before, and accompany military observers during, said activities to ensure that "take" is minimized and documented. • Provide funds for CNMI to employ a Conservation Officer for Tinian, so that sea turtle nesting activity can be more adequately monitored before and during amphibious exercises. The regular presence of this monitor will also deter poaching of sea turtles and nests on Tinian, thus helping DOD achieve its environmental stewardship goals. • Provide funds for CNMI to employ a Habitat Conservation Biologist, who is dedicated to reviewing DOD documents such as subsequent EIS's, monitoring impact of military activities, and liaising with DOD, CNMI political officials, and third parties about conservation issues of mutual interest. • Provide funds to DFW /DLNR to hire additional staff for	

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	ongoing marine surveys of fish and invertebrates on Rota, Tinian, Saipan, and Pagan to monitor potential shifts in communities and biodiversity. • To monitor introduced species, provide funds for intensive surveys of marine waters include invertebrate specialists, application of molecular methods. Marine surveys of main ports for assessment of non-indigenous species would include rapid survey assessments of all access islands by professional staff; including the establishment of settling plates in harbors and landing sites for taxonomic and genetic analyses. • Provide data on all surveys performed around FARALLON DE MEDINILLA for marine invertebrates, reef fishes, marine mammals and sea turtles. Provide access to FARALLON DE MEDINILLA's waters for DFW to perform independent surveys of fish, invertebrates and wildlife. • Fund a study that would satellite tag species of marine mammals (especially Culver's beaked whale) and sea turtles to measure movement and behavioral response of animals to military activities. • Fund a tag and recapture and acoustic tagging study on Tinian that would measure fish movement across exclusion zones, as well as active movement relative to military activities. • Provide funds for DFW to establish a benthic monitoring team to monitor and compare impacted to control sites. This would involve hiring two staff, providing training, and providing equipment and funds for fuel to perform the work. • Ensure that current and future Commonwealth laws and regulations governing the use of designated CNMI Conservation Areas be respected. Ensure that training plans are revised if boundaries of legally designated Conservation	

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	Areas change, or if new Conservation Areas are established. • Improve communication and collaboration with CNMI-DFW on research and monitoring activities related to DOD training described in the MITT. Improvements should include collaborative projects, funding for independent research and monitoring from CNMIDFW, regular data and information sharing, and consultation prior to training activities that are likely to impact CNMI's natural resources. • Provide funds for CNMI to sample, monitor, and research the effects of the release, environmental persistence, and bioaccurnulation of explosive and toxic residues left by propellant and ordnance use on and in the waters surrounding Saipan, Tinian, and Farallon de Medinilla. The CNMI Department of Land & Natural Resources Division of Fish & Wildlife appreciates the opportunity to review and to provide comment on the EIS on the Marianas Islands Training Testing Activities, United States Department of the Navy. We hope that you will give considerable and favorable attention to our comments, and we ask for an open and ongoing exchange of information and a vigorous discussion of your future plans and their implications for our Commonwealth.	
Commonwealth of the Northern Mariana Islands Office of the Governor Division of Environmental Quality (CNMIDEQ) - 1	Dear MITT EIS/OEIS Project Manager: The Division of Environmental Quality is vigilant against the degradation of CNMI's natural environment by military activities. Critical effort has been spent reviewing The Mariana Islands Training and Testing (MITT) EIS. DEQ has produced several sections of comments addressing aspects of our diverse islands. Within this document you will find five sections: **Section I. MITT-EIS General Comments for DEQ**	Thank you for your participation in the NEPA process. Your comment has been broken down into component parts to ensure that all comments provided in your letter are addressed. As a result, this portion of the comment does not contain a specific question or inquiry related to the EIS/OEIS. Therefore, no response is provided. Specific comments provided by CNMI are addressed in responses below.

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	This section comments on environmental issues of up most concern for DEQ, in particular sedimentation, marine debris, non-point source pollution, and toxins. **Section II. MITT-EIS General Comments for CNMI** 2 This section attempts to capture the general concerns of CNMI, as it pertains to the economy, culture, and history of the Marianas. **Section III. MITT-EIS Environmental Comments** This section comments on over arching issues found within the EIS. It also contains environmental concerns that are not directly under the jurisdiction of DEQ. **Section IV. MITT-EIS Specific Comments for DEQ** This section is an attempt to dissect the EIS within the realm of DEQ's technical expertise. Numbered headings within this document directly reference the MITT EIS. **Section V. Comments for the Eliminated Marine Mammals Mitigation Measures** This section comments to the alternative mitigation measures for Marine Mammals that was considered but eliminated. Numbered headings within this document reference mitigation measures. Only the mitigation measures where a strong case for reconsideration was perceived is commented on.	
CNMIDEQ - 2	**Section I** <u>Comment Number - I.a.</u> DEQ has been tasked by EPA to assure water quality	Strike warfare activities on land only occur on FDM. The Navy maintains a number of protective measures to minimize the impact of ordnance use on FDM while achieving the military mission consistent with the lease agreement signed in 1983 between the U.S. government and the

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	throughout the CNMI. In recent years focused efforts to control erosion on land and reduce sedimentation on reefs has been and continues to be a priority of DEQ. Military activity in particular strike warfare is likely to increase sedimentation via land clearing and inadvertent fires from bombs. Sedimentation is quantified by measures of turbidity and TSS, both of which have water quality standards. Who will be monitoring the waters down land of strike warfare activities? If violations of water quality standards do occur how will they be addressed?	Commonwealth of the Northern Mariana Islands. Information regarding potential sediment runoff from military use of FDM has been added to the sediments and water quality section of the MITT Final EIS/OEIS. Information regarding how erosion from FDM may impact specific resources has been added to particular resource sections (e.g., marine communities, marine invertebrates, fish, sea turtles, and marine mammals). Further, the Final EIS/OEIS now cites the Mariana Islands Range Complex Operational Range Clearance Plan, dated June 2013. This plan outlines specific procedures and schedules for range clearance on FDM. The siting of targets and impact areas consider protections to relatively higher quality habitat in the northern portion of the island, the narrow land bridge, and various limestone cave features along the coast. Together, the impact area designations and ordnance restrictions within impact areas minimize to the maximum extent practical erosion and subsequent sedimentation of nearshore waters of FDM while meeting the military mission needs in accordance with the 1983 lease agreement.
CNMIDEQ - 3	Comment Number - I.b. The EIS affirms that the effects of sedimentation caused by underwater explosions will be temporary. There is truth in this, high sedimentation levels in the water column after underwater explosions is likely to be short lived. However, its effects on marine vegetation and even corals can be lethal especially if sediments settle on and smother these benthic organisms, which is likely to occur in calmer waters. Therefore the effect of sedimentation is dependent on the environment and should not be dismissed as simply temporary. Can the military reconsider their stance on the effects of sedimentation caused by underwater explosions?	While underwater seafloor detonations are part of Proposed Action, detonations in shallow waters are restricted to Agat Bay Mine Neutralization Site, Outer Apra Harbor Underwater Detonation, and Piti Point Mine Neutralization sites, which are located in waters that are previously disturbed. A detailed analysis of potential impacts associated with underwater detonations is provided in Section 3.3 (Marine Habitats), Section 3.7 (Marine Vegetation), and Section 3.8 (Marine Invertebrates).
CNMIDEQ - 4	Comment Number - I.c. CNMI's natural resource agencies and non-governmental agencies have identified marine debris as a threat to the	While the Navy has not conducted specific studies on the time required for expended materials to decompose in the ocean, the information regarding potential effects of these materials to marine resources is

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	environment and economy of the Marianas. Some agencies have received federal funding to address this issue and are vigilant when keeping our shorelines clean. The EIS acknowledges that proposed activities which involve decelerators, parachutes, and the blowing up of targets will increase marine debris in our water. The EIS states that some of their trash is designed to sink. However, it is doubtful that all of the material they generate will sink, therefore an influx of debris is likely to occur on our shores. How will the military contribute to clean up activates to mitigate their contribution to marine debris?	included in the EIS/OEIS.
CNMIDEQ - 5	Comment Number - I.d. The EIS does not address non-point source pollution from land based sources such as sedimentation, fuel, oil, herbicide, and others that will be generated by military activities. If organisms such as trees, birds, marine mammals, sea turtles, corals, fish, seagrass, algae, invertebrates, and others are exposed to such pollutants the result can be lethal. What is the military doing to reduce such adverse effects?	Information regarding non-point source pollution from activities associated with the Proposed Action is discussed in the secondary stressor discussions of each resource section. Information about non-point source pollution associated with other military actions and non-military actions in the Study Area are discussed in cumulative impacts discussion and included in the baseline. Information regarding the military use of FDM and water quality issues surrounding the island has been added to the Final EIS/OEIS in Section 3.1.3.1.5.3 (Farallon de Medinilla Specific Impacts). This section includes more detail on 13 years' worth of dive studies and direct observations of in water impacts, primarily associated with natural processes. Water quality appeared to be healthy, based on observations of coral health and a low number of bioeroders.
CNMIDEQ - 6	Comment Number - I.e. Due to previous military activity on Saipan toxic levels mercury, cadmium, and lead are being found in at the dump sites of Agingan and Banzai. Future studies will also consider fish, which are suspected to have toxic levels of these pollutants. How can the military assure the CNMI that their activities will not continue to pollute our environment?	Section 3.1 (Sediments and Water Quality) provides a detailed analysis of potential impacts on sediments and water quality from explosive byproducts, metals, chemicals, and other materials associated with military training and testing activities in the Study Area. Based on the analysis presented in the EIS/OEIS, chemical, physical, or biological changes in sediment or water quality would not be detectable. Sediments near military expended materials would contain some metals, but concentrations would be below applicable standards, regulations, and guidelines.

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CNMIDEQ - 7	Comment Number - I.f. The EIS mentions that unexploded ordnance will be collected after training is complete, but how much effort will be devoted to this task? Saipan is still littered with UXO. This trash is a constant threat to the people and environment of CNMI. UXO explosions during fire events has occurred, luckily no fatalities have been documented. Similar scenarios have been played out wherever the military has left their foot print. Why should the military be allowed to continue the degradation of our lands when they haven't cleaned up their mess from previous events?	Unexploded ordnance resulting from MITT training activities will only be cleared from FDM. The Navy complies with all applicable laws and regulations for military expended munitions and range clearance for the training and testing activities proposed within the MITT EIS/OEIS Study Area. Off-range unexploded ordnance resulting from previous war activity is recognized by law and regulations as a problem to be addressed by a cooperative effort between the Federal and local governments, implementing programs such as the U.S. EPA Brownfields Program or the U.S. Army Corps of Engineers Formerly Used Defense Sites Program.
CNMIDEQ - 8	**Section II** Comment Number - II.a. The basis of CNMI's economy is tourism which is largely reliant on the health of the environment. The proposed military activities will demise the health of our environment and thus the revitalization of CNMI's economy. How will the US compensate for undermining an economy that was just beginning to show signs of recovery?	The military recognizes the importance of tourism and its benefit to the local economy. As the commenter points out, tourism is largely dependent on resources of the natural environment (e.g., fish for recreational fishing). The military shares your concern for the health of the environment and is committed to protecting the marine environment while fulfilling its mission, which includes conducting training and testing activities. A comprehensive analysis of potential effects on environmental resources from Navy training and testing activities is presented in Chapter 3 of the EIS/OEIS. These resources include: water quality and sediment quality, marine habitats, marine mammals, fish, sea turtles, birds, and invertebrates. While some impacts would occur from training and testing activities, the analysis concludes that impacts would be minimal and would not have a significant impact on the environment. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent practicable mitigation measures during its training and testing activities intended to protect marine resources and limit impacts on the environment.
CNMIDEQ - 9	Comment Number- II.b. There are only a few beaches on Tinian making them a finite resource for tourist. The reef crest fronting these beaches is shallow and susceptible to amphibious landing. It is likely that	Training and testing activities within the Tinian MLA will not interfere with the primary tourist attractions within the lease area (e.g., WWII-era structures). Standard operating procedures are in place to minimize potential impacts on beach topography. These restrictions include various amphibious vehicle operating restrictions (e.g., cushion

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	these landings will degrade the aesthetic value of these beaches making them less appealing for tourist. Such actions can have adverse impacts on this island's economy, where tourist attractions and tourist themselves are limited. What activities does the military have planned to mitigate for these effects from amphibious landings?	inflation/deflation restrictions), and post-exercise topography restoration. These restrictions are included in COMNAVMARIANASOINST 3500.4A. Prior to any amphibious over-the-beach training activity conducted with larger amphibious vehicles such as LCACs or Amphibious Assault Vehicles (AAVs) (e.g., Amphibious Assaults), a hydrographic survey and a beach survey would be required. The surveys would be conducted to identify and designate boat lanes and beach landing areas that are clear of coral, hard bottom substrate, and obstructions. LCAC landing and departure activities would be scheduled at high tide. In addition, LCACs would stay fully on cushion or hover when over shallow reef to avoid corals and hard bottom substrate. This is a standard operating procedure for safe operation of LCACs. Over-the-beach amphibious activity would only occur within designated areas based on the hydrographic and beach surveys. Similarly, AAV activities would only be scheduled within designated boat lanes and beach landing areas and would conduct their beach landings and departures at high tide one vehicle at a time within their designated boat lane (Commander, Naval Forces Marianas Instruction [COMNAVMARIANASINST] 3500.4A). Based on the surveys, if the beach landing area and boat lane is clear, the activity could be conducted, and crews would follow procedures to avoid obstructions to navigation, including coral reefs; however, if there is any potential for impacts on corals or hard bottom substrate, the Navy will coordinate with applicable resource agencies before conducting the activity. Hydrographic and beach surveys would not be necessary for beach landings with small boats, such as RHIBs. Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) for amphibious landings has been updated in the EIS/OEIS. With implementation of the measures described above, impacts on the seafloor would be minimized.
CNMIDEQ - 10	Comment Number - II.c. This document fails to assess the synergistic effect of disturbances and stressors on the environment, economy, and culture of the CNMI. For example how will the combined outcome of environmental degradation, noise pollution, and	Chapter 4 (Cumulative Impacts) has been revised to address potential synergistic effects of multiple stressors on the environment. Potential impacts on tourism from individual stressors (e.g., accessibility) are analyzed in Section 3.12.3 (Environmental Consequences) of the EIS/OEIS. While aggregate impacts from multiple stressors are possible, most activities would be widely dispersed spatially throughout the MITT

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	restricted access effect the quality of visit tourist receive? The combined consequence of all the mentioned factors is likely to be greater than a single one. Some may be able to tolerate one of these factors, but the synergistic effect of all can result in a less than desirable visit and poor reviews that will cause potential visitors to select alternative destinations. What activities does the military have planned to mitigate for these effects?	Study Area. The majority of activities would also be dispersed temporally (i.e., few activities would occur at the same time in the same location) limiting the overlap of stressors. Therefore, the aggregate impact on socioeconomic resources, including tourism, is not expected to observably differ from existing conditions. To mitigate potential effects to socioeconomic resources, the military provides notice of closures restricting public access to training and testing areas at least 7 days in advance of an activity. Scheduled activities are published and available to all vessels and operators by use of Notices to Mariners issued by the U.S. Coast Guard. The military also issues notices of times when access to waters >3nm from FDM will be accessible to the public for an extended period of time. Additional measures taken by the military to maintain public safety is provided in Section 3.13 (Public Health and Safety).
CNMIDEQ - 11	Comment Number - II.d. Historically foreign interest in particular their military activities has repressed the people and culture of the CNMI. The proposed military activities will further exacerbate this through the destruction of historical sites and artifacts, restriction of access to land and sea; and the squandering of natural resources. A culture cannot persist without its history, land, and natural resources. How can the military say that they are defending the rights of people? When they continue to repress indigenous cultures and their rights.	The military is committed to protecting the environment during the conduct of its military training and testing activities. A comprehensive analysis of potential effects on environmental resources from Navy training and testing activities is presented in Chapter 3 of the EIS/OEIS. These resources include: water quality and sediment quality, marine habitats, marine mammals, fish, sea turtles, birds, and invertebrates. While some impacts would occur from training and testing activities, the analysis concludes that impacts would be minimal and would not have a significant impact on the environment. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities.
CNMIDEQ - 12	Comment Number - II.e. The green sea turtle is a cultural icon and revered by the indigenous presence in these islands. The take and disturbance of this species caused by military activities will have adverse affects on the already decimated turtle population. This take will only perpetuate the lost of cultural practices and beliefs in a community that has been historically repressed by foreign presence. A culture cannot persist without its natural resources. How can the military say that	The Navy is required, under Section 7(a)(2) of the ESA, to analyze proposed activities if they may affect ESA-listed species. The Final EIS/OEIS has been updated with the results and conclusions of the Section 7(a)(2) consultation between the Navy and the USFWS and NMFS as it relates to the green sea turtle. This includes any mitigation and monitoring requirements resulting from consultation that were included in Biological Opinions provided to the Navy from the USFWS and NMFS.

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	they are defending the rights of people? When they continue to repress indigenous cultures and their rights.	
CNMIDEQ - 13	Comment Number - II.f. The CNMI government has made rules and regulations to preserve their natural resources as a means to perpetuate their culture and boost their economy. In defiance, the military continues to resist these rules and regulations. Will the military be held responsible for these violations, by compensating the people of the CNMI for the take of their resources?	The military is committed to protecting the environment during the conduct of its military training and testing activities. Effects from training and testing activities were analyzed in Chapter 3 of the EIS/OEIS. While some impacts would occur from training and testing activities, the analysis concludes that impacts would be minimal and would not have a significant impact on the environment. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities.
CNMIDEQ - 14	Comment Number - II.g. Through time the military has taken, abused, and then returned lands in a decimated state. The military should be held accountable for their actions. Either they should clean up the mess they made at past sites prior to moving to a new site or they should go back to bombing those lands that are uninhabitable from past military activities.	The military is committed to protecting the environment during the conduct of its military training and testing activities. Effects from training and testing activities were analyzed in Chapter 3 of the EIS/OEIS. While some impacts would occur from training and testing activities, the analysis concludes that impacts would be minimal and would not have a significant impact on the environment. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities.
CNMIDEQ - 15	Comment Number - II.h. The Marianas Islands are unique and precious to the people of the CNMI, such a resource should not be compromised. Nevertheless, if the powers that be take our islands, will the people of the CNMI be compensated accordingly?	The military is committed to protecting the environment during the conduct of its military training and testing activities. Effects from training and testing activities were analyzed in Chapter 3 of the EIS/OEIS. While some impacts would occur from training and testing activities, the analysis concludes that impacts would be minimal and would not have a significant impact on the environment. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities.
CNMIDEQ - 16	**Section III** Comment Number - III.a.	The MITT EIS/OEIS analyzes a number of complex issues in which there is continuously evolving science. To fully consider the various potential impacts of each activity across the spectrum of environmental resources, the document is by necessity lengthy. Redundancy has been

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	This EIS is redundant, perplexing, and lengthy in ways that doesn't provide the reader information to properly understand the proposed activities and potential threats. Yet, it is vague and incomplete, leaving out critical information to properly review. How will future authors of the military's EISs remedy this problem?	reduced where possible, keeping in mind that many readers may focus on one specific resource or geographic area. The Navy attempted to make each such section complete by itself to aide in that type of review, which sometimes results in repetitive language. Without a more substantive comment describing where the document is vague or incomplete, no corrective action can be taken.
CNMIDEQ - 17	Comment Number- III.b. This EIS tries to promote a fallacy that the military has studied and is very knowledgeable of the natural resources and ecology of the Marianas. However, just the opposite is exposed when the document is reviewed. Inaccuracies pertaining to the presence and distribution of species abound, along with contradictive statements. Will these errors be corrected?	Any specific errors gathered from the public during the public comment period, or other errors found during the completion of the Final EIS/OEIS, will be corrected.
CNMIDEQ - 18	Comment Number - III.c. Throughout this document the Navy acknowledges the fatal effects that the proposed naval activities will have on plants, corals, fish, birds, marine mammals, and invertebrates; but it also concludes that the naval activities will have no impact on these populations. In essences this stance is a contradiction. Populations are made of individuals. A lost of an individual will have an effect on the population, albeit this lost may have limited effects on large populations. However, numerous indigenous and endemic organisms of the Marianas have small populations making the fecundity of every individual critical to local population dynamics, as such that a lost of a small number of individuals can have a transcending impact on the overall population. What actions will the military take to mitigate for these effects?	While it is true that an effect to individuals of a species is an impact, the Navy, per CEQ guidance, must focus on "significant" impacts. Effects from training and testing activities were analyzed in Chapter 3 of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. Given the spatial and temporal impacts of training and testing activities, the EIS/OEIS has determined that there are no population level significant effects, despite the impact upon a few members of the various species. The Navy is requesting for authorization from NMFS to take marine mammals incidental to the training and testing activities conducted in the Marianas pursuant to the MMPA. In addition, the Navy is consulting with NMFS and the USFWS for those actions that may affect ESA-listed species.
CNMIDEQ - 19	Comment Number - III.d. This document states that habitat value does not depend on	In Section 3.3 (Marine Habitats) of the EIS/OEIS, the analysis focuses on impacts on soft bottom habitat and hard bottom habitat and potential effect on the habitat as a result of training and testing activities. The

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	shape of the structure. I disagree with this. Substrate that is highly rugose (three dimensionally complex) often possess greater biodiversity and greater biomass than something that is less rugose, such as a rubble field. Greater rugosity often provides more holes and cracks which are preferred by most organisms relative to a rubble field. I use a rubble field for comparison because that may be the faith of CNMI's reefs after continued damage from military expended material and explosions. Why doesn't the military change its perception of habitat value based on shape of the structure?	analysis is based on best available data regarding location of habitat within the Study Area and, when available, the condition of habitat.
CNMIDEQ - 20	Comment Number - III.e. The federal government continues to restrict the indigenous presence from the taking endangered and threatened species. Yet, it is acceptable for the military to take these species. The federal government should be more consistent in regulating these takes if they want people to respect and abide to these regulations. What actions will the military take to mitigate for these effects?	The Navy is required, under Section 7(a)(2) of the ESA, to analyze proposed activities if they may affect ESA-listed species. The Final EIS/OEIS has been updated with the results and conclusions of the Section 7(a)(2) consultation between the Navy and the USFWS and the NMFS. The outcome of consultation with NMFS will be reflected in the ROD. The Final EIS/OEIS and ROD will incorporate any mitigation and monitoring requirements resulting from the consultations.
CNMIDEQ - 21	Comment Number - Ill.f. There are only a few beaches on Tinian making them a finite resource for this island. These beaches are known to serve as nesting habitat for the Green Sea Turtle. Due to the limited human population and isolation of these beaches these nest are often undetected by poachers and hatch successfully, serving as significant habitat to local turtle populations. The proposed amphibious landings at these beaches are likely to disrupt turtle nesting activities and destroy turtle nest. Although mitigation efforts involving beach observation are considered they are unlike to capture turtle nesting activity that occur at night and the presence of eggs that can take up to 55 days to hatch. Why doesn't the military have better mitigation practices to preserve this threatened species?	Section 3.5 (Sea Turtles) of the Final EIS/OEIS has been updated to address sea turtle nesting on Tinian. Additionally, Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) has been updated with mitigation measures that reduce or avoid impacts on nesting sea turtles. In addition, the Navy is required, under Section 7(a)(2) of the ESA, to analyze proposed activities if they may affect ESA-listed species. The Final EIS/OEIS has been updated with the results and conclusions of the Section 7(a)(2) consultation between the Navy and the USFWS as it relates to the sea turtles. This includes any mitigation and monitoring requirements resulting from the consultation. During consultation with USFWS, the Navy determined that Unai Chulu, Unai Babui, and Unai Dankulo would not be designated as landing zones for mechanized amphibious vehicles (AAVs) at this time. Should mechanized amphibious vehicles (AAV and LCAC) landings on those beaches become necessary,

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		the Navy will reinitiate consultation for those activities.
CNMIDEQ - 22	Comment Number- III.g. The proposed military activities violate numerous locally established rules and regulations: -) The use of explosives in the taking of fish -) The take of wildlife from a motorized vehicle -) The killing of any threatened, endangered, or protected species -) The take of land of indigenous organisms such as sea birds, forest birds, reptiles, and plants -) The take of forest and sea bird eggs -) Unpermitted land clearing and earth moving Just to mention a few. How will the disregard of these rules and regulations be addressed?	In the preparation of the MITT EIS/OEIS, the Navy has complied with all applicable environmental laws, including NEPA. Please refer to Chapter 6.0 (Additional Regulatory Considerations), Table 6.1-1 (Summary of Environmental Compliance for the Proposed Action).
CNMIDEQ - 23	Comment Number - III.h. The EIS infers that underwater explosions will have minimal impact on coral reef organisms. One needs to go just a few decades back in time, when dynamite fishing was practiced on Saipan. The adverse impacts of this method were quickly realized and the government placed a ban on dynamite fishing. Why does the military continue to disregard such local regulations without compensation?	In the preparation of the MITT EIS/OEIS, the Navy has complied with all applicable environmental laws, including NEPA. While underwater seafloor detonations are part of Proposed Action, detonations in shallow waters are restricted to Agat Bay Mine Neutralization Site, Outer Apra Harbor Underwater Detonation (UNDET), and Piti Point Mine Neutralization sites, which are located in waters that are previously disturbed, and are not known to support large invertebrate communities, which further reduces the potential for population level impacts.
CNMIDEQ - 24	Comment Number - III.i. The EIS acknowledges the enhanced threat of invasive species that comes with the increase of military activity and even discusses procedures that they follow to reduce the threat of these species. Unfortunately the document fails to present a response or mitigation plan and a corresponding budget if an invasive species introduction occurs because of military activities. This leads one to question the commitment of the	The U.S. Navy recognizes the importance of biosecurity, ecological integrity, and resiliency of island ecosystems to the potential introduction of invasive species to the Mariana Islands associated with military training and testing. The Navy has a number of policies in place to prevent, interdict, and control invasive species introductions in both terrestrial and marine environments. Specific policies for marine invasive species can be found at OPNAVINST 5090.1D Chapter 35-3.19. (Ship and Ballast Water), 5090.1D Chapter 35-3.1 (Environmentally Sound Ships), and 5090.1D Chapter 12-3.10 (Invasive Species). For

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	military to mitigate the introduction of invasive species. Will the military provide the public with a response or mitigation plan and a corresponding budget for invasive species introduction due to military activities?	potentially invasive terrestrial species, the Navy has in place a number of policies and procedures to reduce or remove species from potential introduction pathways. These measures include coordination with USDA APHIS for inspection procedures for incoming cargo, equipment, and personnel from foreign locations. This information has been added to Section 3.10 (Terrestrial Species and Habitats) as part of an overall invasive species discussion that includes terrestrial, marine, and freshwater invasive species. In conclusion, the Navy maintains that introduction of invasive species associated with military training and testing activities is low. It should be noted that the Navy or other military services does not have jurisdiction of other potential pathways for introduction (e.g., commercial activities, U.S. mail, non-DoD personnel).
CNMIDEQ - 25	Comment Number - III.j. Mitigation activities are insufficient and demonstrate the lack of reverence that the military has for the natural resources of the Marianas. Often mitigation is considered when no additional time or resources are required. Lookouts primary job is to watch for dangers and threats to the Navy's operations and property, marine mammals and sea turtles are secondary. The effectiveness of lookouts to detect these animals quickly diminishes at night or when visibility is bad such as during storms. In tum this also reduces the benefits of the Mitigation Zone Procedural Measures which is only enacted if marine mammals or sea turtles are detected by lookouts. The Mitigation Areas seem like a good idea, but the EIS fails to provide a map, which raises some suspicion as to the commitment of the Navy for this activity. In addition this mitigation activity contradicts the Navy's position on Avoiding Marine Species Habitats which was considered but eliminated. Can the military provide a better explanation for these mitigation activities?	As indicated in Section 3.4.3.1.3 (Long-Term Consequences to the Individual and the Population), the military evaluates and assesses the effectiveness of mitigation in minimizing impacts on marine species from training and testing activities. In addition, mitigation effectiveness is quantified and used in the analysis of predicted exposures of marine mammals to sonar and explosives. The analysis includes the probability of sighting a marine mammal, which varies by species, by using independently derived g(0) factors. The g(0) factors that include a measure of perception bias incorporate sea state as part of the derivation of the g(0). Refer to Section 3.4.3.3 (Implementing Mitigation to Reduce Sound Exposures) and the separate technical report, *Post-Model Quantitative Analysis of Animal Avoidance Behavior and Mitigation Effectiveness for the Mariana Islands Training and Testin*g for details on how mitigation is quantified and used in the analysis (www.mitt-eis.com). Navy Lookouts scan the sea surface for any potential risk to the military and non-military vessels in the area. This includes scanning for and avoiding marine mammals. Navy Lookouts are focused on the mitigation zone defined by the range to PTS or injury effects, which for activities using sonar is no more than 100 m, and for activities that use explosives ranges to a maximum of 265 m for mid frequency cetaceans, 485 m for low frequency cetaceans, and 855 m (bin E12) for high frequency cetaceans. Mitigation Areas are defined in the EIS/OEIS in Chapter 5 (Standard Operating Procedures, Mitigation,

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		and Monitoring) and include shallow coral reefs, hardbottom habitat, artificial reefs, and shipwrecks. These areas are located throughout the Study Area and are mapped individually in some of the resources sections (e.g., coral reefs appear on several maps in Section 3.3 Marine Habitats). Refer to Section 5.3.3.1.1.1 (Shallow Coral Reefs, Hardbottom Habitat, Artificial Reefs, and Shipwrecks) for information on how mitigation areas are utilized.
CNMIDEQ - 26	**Section IV** Comment Number - IV .a. Pertaining to MITT EIS section: 2.2.2 Amphibious Warfare Amphibious landings can potentially be harmful to the coral reef ecosystem and nesting sea turtles. How will the military assure the CNMI that coral reef organism or sea turtle and their eggs will not be harmed during amphibious landings? Will the reefs be monitored pre and post amphibious landings to assess the damage to the reef? Will the military immediately re-vegetate the area disturbed to prevent further erosions after the training exercise?	Amphibious vessels could contact sea turtle nesting beaches during Amphibious Assault and Amphibious Raid operations. These amphibious vessels would include, Mechanized and Utility Landing Craft, Air Cushioned Landing Craft, and other boats for transporting large numbers of people or equipment. Amphibious Assault and Amphibious Raid training activities could occur up to 12 times per year (6 Amphibious Assault and 6 Amphibious Raid) and would be conducted in the nearshore area including the surf zone up to the high tide line at Unai Chulu, Unai Babui, and Unai Dankulo, Tinian as well as Dry Dock Island in Apra Harbor and Dadi Beach on Guam. Prior to beach landings by amphibious vehicles, known sea turtle nesting beaches are surveyed by Navy biologists for the presence of sea turtle nests no more than 6 hours prior to a landing exercise. Areas free of nests are flagged, and vehicles are directed to remain within these areas. LCAC landings on Tinian are scheduled for high-tide. LCACs stay on-cushion or hover until clear of the water and within a designated Craft Landing Zone (CLZ). Within the CLZ, LCAC come off-cushion with the LCAC oriented to permit expeditious vehicle and cargo offload onto a cleared offload and vehicle traffic area. Although LCAC and expeditionary vehicle traffic typically do not leave ruts, some compaction of sand in vehicle tracks is possible. If restoration of beach topography is required it is conducted using non-mechanized methods. Additionally, Navy biologists monitor beaches during nighttime training landing exercises. If sea turtles are observed or known to be within the area, training activities are halted until all nests have been located and sea turtles have left the area. Identified nests are avoided during the night-time landing exercise.
CNMIDEQ - 27	Comment Number - IV.b.	Information regarding potential sediment runoff from military use of FDM has been added to Section 3.1 (Sediments and Water Quality) of

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	Pertaining to MITT EIS section: 2.2.3 Strike Warfare Strike warfare will result in land clearing and potential inadvertent fires, both of which can result in sedimentation events. How will the military assure the CNMI that water quality will be sustained? Will water quality be monitoring to assess the effects of strike warfare? Will the military immediately re-vegetate the area disturbed to prevent further erosions after the training exercise?	the EIS/OEIS. Information regarding how erosion from FDM may impact specific resources has been added to particular resource sections (e.g., marine communities, marine invertebrates, fish, sea turtles, and marine mammals). Further, the Final EIS/OEIS has been updated to reference the Mariana Islands Range Complex Operational Range Clearance Plan, dated June 2013. This plan outlines specific procedures and schedules for range clearance on FDM. The siting of targets and impact areas consider protections to relatively higher quality habitat in the northern portion of the island, the narrow land bridge, and various limestone cave features along the coast. The Navy believes that the location of the impact areas offer the least impacts to fulfill military mission requirements of the range. The Navy has conducted 13 annual marine ecological surveys of nearshore marine resources at FDM between 1999 and 2012 (no survey was performed in 2011). The 1999–2004 surveys were completed by a Navy contractor and a representative from the USFWS, the National Marine Fisheries Service and the Commonwealth of the Northern Mariana Islands. All surveys since 2004 have been performed by the Naval Facilities Engineering and Expeditionary Warfare Center's Scientific Diving Services (SDS). The use of Navy personnel is necessary because of EOD dive safety rules. The 2012 survey report presents the findings of the calendar year 2012 survey and compares those findings with the previous 12 surveys. Although minor ecological impacts, which could be attributed to military training, were detected in 2012 and previous surveys, no significant or substantial impacts to the physical or biological environment have been detected between 1999 and 2012. This conclusion was reached by all the investigators (1999–2012) and was based upon four criteria: (1) very few areas of disturbance have been detected, (2) most of the disturbed areas have been located in natural rubble environments, (3) the size of the disturbed areas were generally less than 2 square meters and, (4) substantial or complete recovery has occurred within 1 year. For water quality, the 2012 and previous reports noted mucus production in corals, which is an indicator of stress from pollutants and

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		sedimentation. None of the reporting years report mucus production to indicate stress. This factor and other factors of marine health in nearshore waters of FDM provide strong evidence that the military training activities have not had a significant adverse impact upon water quality.
CNMIDEQ - 28	Comment Number - IV.c. Pertaining to MITT EIS section: 3.0.5.2.3.6 Ground Disturbance and Wildfires This section summarizes an increase in explosives that will be used on FDM and mentions the likelihood of wildfires. This section focuses on the impacts of wildfires on species and habitats, but mentions nothing about erosion and successive water quality degradation that may result from the wildfires.	Wildfires may result from explosive ordnance on FDM. Subsequent runoff into the near shore environment does not appear to adversely impact water quality or ecological processes. Section 3.10.3.2.4 (Impacts from Wildfires) and Section 3.10.3.2.2 (Impacts from Military Expended Materials Including Explosive Munitions Fragments) discuss the potential impacts that explosions have on vegetation communities through a history of intense bombardment. Please see response to comment CNMIDEQ-27 for a discussion on reef health observations during the 13 years' worth of in water monitoring efforts around FDM.
CNMIDEQ - 29	Comment Number- IV.d. Pertaining to MITT EIS section: 3.1 Sediments and Water Quality The EIS analyzes four "stressors," namely: explosives and explosive by-products, metals, chemicals other than explosives, and other materials. There is NO mention of erosion (as a stressor that affects sediments and water quality). Erosion can/will be caused by explosive use and/or missile impacts on land, and amphibious landings. The EIS analyses the quality of sediments, but not the generation of additional sediments and other suspended particles.	Section 3.1.3.1.5 (Fate of Military Munitions in the Marine Environment) has been added to the Final EIS/OEIS to provide more detail on water quality issued associated with strike warfare exercises occurring at FDM. Please see response to comment CNMIDEQ-27 for a discussion on reef health observations during the 13 years' worth of in water monitoring efforts around FDM. While erosion, sedimentation, and temporary increases in turbidity would occur during amphibious landing activities and potentially use of explosives nearshore, analysis presented in Section 3.8 (Marine Invertebrates) in the Final EIS/OEIS concludes that no long term or population level impacts are anticipated on corals. The impact of landing craft (e.g., LCACs) on corals would be not be significant because: (1) the relatively small area that would be impacted (i.e., impacts would be localized); (2) the frequency of activities (up to 12 per year in any of three locations); and (3) effects would cease within minutes to hours of the conclusion of the activity (depending on the characteristics of the site, such as sediment type). Landing activities are not expected to result in lasting effects on the survival, growth, recruitment, or reproduction of

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		coral species at the population level. Similarly, any increases in erosion and subsequent sedimentation in nearshore areas would be infrequent, temporary, and affect a small area.
CNMIDEQ - 30	Comment Number - IV.e. Pertaining to MITT EIS section: 3.1 Sediments and Water Quality In the general descriptions of how the stressors affect the environment, the impact of large rivers on sediments and water quality is mentioned several times (pg 3.1-2 1st paragraph, pg3.1-3 2nd paragraph, pg3.1-3 4th paragraph; pg3.1-4 4th paragraph, pg3.1-5 last paragraph, 3.1-7 4th paragraph, and 3.1-42 3rd paragraph) implying that large rivers have a much greater impact on the environment than the training and testing activities, however, there are no large rivers in the study area - so mention of how large rivers affect sediments and water quality is irrelevant to this EIS. Especially section 3.1.3.3.8 Evaluation of Alternatives which states "*Potential impacts on sediments and water quality from chemicals other than explosives should be viewed in the following context: (1) near shore sediments and water quality in many areas have been negatively impacted; in particular, a wide variety of chemicals are delivered to the ocean by major river systems; and (2) the vast majority of those impacts are from human-generated and land-based activities. The numbers of military expended materials discussed below reflect amounts expended annually for each type of material under each alternative.* "	Please see response to comment CNMIDEQ-27. Information regarding potential sediment runoff from military activities is included in Section 3.1 (Sediments and Water Quality) of the EIS/OEIS. Information regarding how erosion may impact specific resources is included in particular resource sections (e.g., marine communities, marine invertebrates, fish, sea turtles, and marine mammals). The Final EIS/OEIS has been updated to remove reference to major river systems.
CNMIDEQ - 31	Comment Number- IV.f. Pertaining to MITT EIS section: 3 .1.1.1.2. 7 Influences of Marine Properties and Processes on Seawater Characteristics "*Runoff from coastal watersheds influences local and regional*	Please see response to comment CNMIDEQ-27. Information regarding potential sediment runoff from military activities is included in Section 3.1 (Sediments and Water Quality) of the EIS/OEIS. Information regarding how erosion may impact specific resources is included in particular resource sections (e.g., marine communities,

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	coastal water conditions, especially near large rivers." As stated above, there is no mention in this EIS of how the proposed activities will impact the quality of water runoff (added sediments?) from coastal watersheds - even though the EIS states here that runoff from coastal watersheds affect coastal water quality.	marine invertebrates, fish, sea turtles, and marine mammals).
CNMIDEQ - 32	Comment Number- IV.g. Pertaining to MITT EIS section: 3.1.3.I.1 lntroduction (to Environmental Consequences) " *... Detonating explosives may also disturb sediments and increase turbidity. Underwater explosions resuspend sediments in the water column. However, these impacts are minimal because, depending on site-specific conditions of wind and tidal currents, the sediment plume eventually dissipates as particles settle to the bottom or disperse. Therefore, this issue is not considered further.* " We believe this issue should be considered further. The re-suspension and distribution of sediments in the water column has effects on marine life - especially corals. The re-suspension of sediments will also (temporarily) violate CNMI water quality standards.	Information regarding potential sediment runoff from military use of FDM has been added to Section 3.1 (Sediments and Water Quality) the EIS/OEIS. Information regarding how beach erosion may impact specific resources has been added to particular resource sections (e.g., marine habitats, marine invertebrates, fish, sea turtles, and marine mammals). Based on the analysis presented in Section 3.1.4 (Summary of Potential Impacts [Combined Impacts of All Stressors] on Sediments and Water Quality), under the No Action Alternative, Alternative 1, and Alternative 2, chemical, physical, or biological changes in sediment or water quality would not be detectable and would be below or within existing conditions or designated uses.
CNMIDEQ - 33	Comment Number - IV .h. Pertaining to MITT EIS section: 3.1.3.1.4.1 State Standards and Guidelines "*There are no existing Guam and CNMI standards and guidelines for sediments and water quality related to explosives and explosive by products.* " There may be no CNMI standard or guidelines for water quality related to explosives in particular - the CNMI does have Water Quality Standards that cover among other contaminants: suspended solids, turbidity, oil and petroleum products, and toxic pollutants.	The discussion relates only to explosives and explosive by products for which the CNMI does not have specific standards in terms of acceptable concentration in seawater. Although the CNMI may have water quality standards for suspended solids, turbidity, oil and petroleum products, and toxic pollutants, these standards cannot be related directly to explosives and explosive by products for purposes of compliance. The Navy has completed a number of in-water dive surveys in waters around FDM and Tinian. At FDM, where most water quality impacts would be expected due to the type of training activities that occurs there, the Navy's dive surveys around FDM include direct observations of water quality indicators (e.g., the presence/absence of macrobioeroders, coral bleaching, stony coral mucus production). Section 3.1.3.1.5.3 (Farallon de Medinilla Specific Impacts) has been added to the Final EIS/OEIS to

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		summarize the dive surveys and results. As discussed in this section, water quality does not appear to be impacted in waters surrounding FDM and would not violate federal or CNMI water quality standards for any criteria (e.g., suspended solids, turbidity, oil and petroleum products, or toxic pollutants).
CNMIDEQ - 34	Comment Number - IV.i. Pertaining to MIT IS section: 3.1.3.1.6.4 Summary and Conclusions for Explosive and Explosive Byproducts "*Chemical, physical, or biological changes in sediment or water quality would not be detectable.* " What about quantity or volume of sediment? As the amount of explosives used between the no-action Alternative, Alternative I and Alternative 2 increases - the amount of sediment generated would likely increase - and may even result in a violation of CNMI Water Quality Standards.	The discussion relates only to explosives and explosive by products for which the CNMI does not have specific standards in terms of acceptable concentration in seawater. The majority of training and testing exercises that would involve explosives would be in areas outside the jurisdiction of the CNMI, and mostly in open water (outside of Commonwealth waters). For the training and testing exercises involving explosives on FDM, the intended targets are the center of the island within designated impact areas. Areas outside of designated impact areas are not targeted. Loose soil dislodged by explosions will have to be carried to the surrounding water by precipitation before it is deposited as sediment. It is anticipated that majority of the soil will stay within the land mass of FDM and only a small percentage will travel to the water.
CNMIDEQ - 35	Comment Number-IV.j. Pertaining to MITT EIS section: 3 .1.4 Summary of Potential Impacts Again, no mention of erosion as a potential stressor for sediment. Beach landings and other land based activities were not considered in the analysis. Why is Best Management Practices (BMP), which can help ease erosion, not mentioned?	Information regarding potential sediment runoff from military use of Tinian landing beaches during amphibious warfare has been added to Section 3.1 (Sediments and Water Quality) the EIS/OEIS. Information regarding how beach erosion may impact specific resources has been added to particular resource sections (e.g., marine habitats, marine invertebrates, fish, sea turtles, and marine mammals). It should be noted that amphibious training activities must be in adherence with COMNAVMARIANASINST 3500.4A, which mandates a number of protective measures that protect particular resources with ancillary protections for water quality. For example, low tide landings are prohibited, which is a measure designed to reduce the potential impact to coral heads. With higher distances between the amphibious vehicle and the benthic nearshore littoral zone, sediment plume severity is decreased. In addition, sea turtle mitigations include the restoration of beach contours using handtools, which is required after amphibious landing activities. This measure reduces the potential for disturbed unconsolidated sediments (beach deposits) to loosen and erode into the

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		near shore environment.
CNMIDEQ - 36	Comment Number - IV.k. Pertaining to MITT EIS section: 3.3 Marine Habitats The EIS states that most bombs will explode at the surface, so that means some may explode on the bottom. Underwater explosives will have similar effects as dynamite fishing. How does the military plan on compensating the CNMI for the lost of reef and reef organisms from underwater explosions?	Explosive bombs and other ordnance are used well out to see (>12 nm from shore) with the exception of ordnance used at the FDM bombing range. Bombs used at sea will either explode at the surface or within the water column, but not near the seafloor. The military does not target reefs or reef organisms and the use of explosive ordnance far offshore would not impact reefs. While seafloor detonations are part of Proposed Action and may occur anywhere in the Study Area, detonations in shallow waters are restricted to Agat Bay Mine Neutralization Site, Outer Apra Harbor Underwater Detonation (UNDET), and Piti Point Mine Neutralization sites, which are located in waters that are previously disturbed.
CNMIDEQ - 37	Comment Number-IV.l. Pertaining to MITT EIS section: 3.3.3.1.1.1 No Action Alternative Underwater explosions will have an effect on marine habitats. How will the organisms that utilize these habitats respond to these alterations?	Section 3.3 (Marine Habitats) of the Final EIS/OEIS describes the impacts from training and testing activities to the abiotic habitats only. Underwater seafloor detonations are likely to occur in the same area, which would decrease the total area impacted. These areas are primarily made up of soft bottom substrates, which would be expected to recover their previous structure. Therefore, underwater explosions would affect marine habitat structure in the Study Area, but these activities would occur in areas that have been previously disturbed, most impacts would be localized, and the areas are expected to recover. Impacts from underwater detonations to the organisms that utilize these habitats are discussed in the respective biological resource sections (Section 3.7 Marine Vegetation, Section 3.8, Marine Invertebrates, and Section 3.9, Fish).
CNMIDEQ - 38	Comment Number - IV.m. Pertaining to MITT EIS section: 3.3.3.1.2 Substressor Impact on Marine Vegetation as Essential Fish Habitat from Explosives (Preferred Alternative) Why does the EIS consider damages to the soft bottom to be short term and minimal when instead they may be	Underwater seafloor detonations in shallow waters are restricted to Agat Bay Mine Neutralization Site, Outer Apra Harbor Underwater Detonation (UNDET), and Piti Point Mine Neutralization sites, which are located in waters that are previously disturbed. The Final EIS/OEIS states that the Navy plans to use the same areas for underwater detonations to minimize impacts. The Final EIS/OEIS states that the effect to the habitat would be localized and the areas impacted are expected to

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	permanent? Has the military assessed the effects that these holes will have on sand movement?	recover due to tidal and wave energies in the area.
CNMIDEQ - 39	Comment Number- IV.n. Pertaining to MITT EIS section: 3.3.3.2.1.1 No Activities Alternative Most of the sandy beaches on Tinian are fronted by a reef crest and reef flat both of which are considered hard bottom. It would be difficult to avoid these habitats during an amphibious exercise. Why does the EIS not consider the damage that amphibious landing will have on these habitats?	Prior to any amphibious over-the-beach training activity conducted with larger amphibious vehicles such as LCACs or AAVs (e.g., Amphibious Assaults), a hydrographic survey and a beach survey would be required. The surveys would be conducted to identify and designate boat lanes and beach landing areas that are clear of coral, hard bottom substrate, and obstructions. LCAC landing and departure activities would be scheduled at high tide. In addition, LCACs would stay fully on cushion or hover when over shallow reef to avoid corals and hard bottom substrate. This is a standard operating procedure for safe operation of LCACs. Over-the-beach amphibious activity would only occur within designated areas based on the hydrographic and beach surveys. Similarly, AAV activities would only be scheduled within designated boat lanes and beach landing areas and would conduct their beach landings and departures at high tide one vehicle at a time within their designated boat lane (COMNAVMAR Instruction 3500.4A). Based on the surveys, if the beach landing area and boat lane is clear, the activity could be conducted, and crews would follow procedures to avoid obstructions to navigation, including coral reefs; however, if there is any potential for impacts to occur on corals or hard bottom substrate, the Navy will coordinate with applicable resource agencies before conducting the activity.
CNMIDEQ - 40	Comment Number - IV.o. Pertaining to MITT EIS section: 3.3.3.2.2 lmpacts from Military Expended Materials Why does the EIS not consider the secondary damage that Military Expended Materials will have on marine habitats after the initial impact? These materials and generated rubble can roll on the seafloor like a bowling ball causing further damage to marine habitats.	Military expended materials on the seafloor are likely to become biologically, chemically, or geologically incorporated into the habitat. If this does not occur, the likelihood of the item moving around and impacting habitat is low based on the relatively small size of most expended materials and that larger expended materials are used in deeper waters where there would be less tidal and wave energy impacts.

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CNMIDEQ - 41	Comment Number - IV.p. Pertaining to MITT EIS section: 3.3.3.2.2 Impacts from Military Expended Materials The EIS states: "*value of these substrates as habitat, however, does not depend on the shape of the structure*" Why does the EIS state this? It is not true. Often habitat that is more three dimensionally complex possess greater biomass and diversity than a flat habitat.	The Final EIS/OEIS states that the value of the substrate as habitat would not be altered in a manner that would impact that function. This is only pertaining to hard bottom habitat with a three-dimensional structure. While the potential impact from military expended materials would not change the nature and function of the structure, the shape may be altered. However, the Final EIS/OEIS has been updated to clarify the meaning of the "shape of the structure."
CNMIDEQ - 42	Comment Number- IV.q. Pertaining to MITT EIS section: 3.3.3.2.2 Impacts from Military Expended Materials How will the military address the marine debris generated by decelerators and parachutes?	While the Navy has not conducted specific studies on the time required for expended materials to decompose in the ocean, the information regarding potential effects of these materials to marine resources is included in the EIS/OEIS.
CNMIDEQ - 43	Comment Number - IV.r. Pertaining to MITT EIS section: 3.3.3.2.2 Impacts from Military Expended Materials How will the military assess the damage to marine habitats from exercises that sink ship hulls in deep water?	Section 3.3.3.2.2 (Impacts from Military Expended Materials) included the total impact footprint associated with a SINKEX. A SINKEX would occur over 50 nm from shore, where the substrate would be primarily clays and silts. The vessel hulk would create a hard substrate, which could act as an anchoring point for marine life in the open ocean where the predominant habitat is soft bottom. The Navy would not undergo any studies to determine the extent of the impact to the marine habitat based on the level of impacts expected.
CNMIDEQ - 44	Comment Number - IV.s. Pertaining to MITT EIS section: 3.3.3.2.2 Impacts from Military Expended Materials Although military expended material can serve as artificial reefs it does not take the place of the marine habitat that will be destroyed by military activities. Why doesn't the military	According to the NEPA regulations, NEPA imposes no substantive requirement to mitigate a project's adverse environmental impacts. However, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy evaluated the effectiveness and practicability of a number of potential mitigation measures. Through consultation and permitting with NMFS and USFWS, the Navy refined the mitigation measures, which are now presented in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring)

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	effective mitigate these activities?	of this Final EIS/OEIS. The military is committed to protecting the marine environment during the conduct of its training and testing activities. As described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy has used extensive measures to protect the marine environment while conducting military training and testing activities.
CNMIDEQ - 45	Comment Number- IV.t. Pertaining to MITT EIS section: 3.4 Marine Mammals Beak whale stranding on Saipan in 2012 just so happen the same time that the military was acoustic testing. How will the military assure the CNMI that such events will not occur during proposed military activities?	No information on a 2012 beaked whale stranding in Saipan can be found. Perhaps the commenter is referring to the 2011 stranding? Preliminary necropsy results from the beaked whale which stranded on Saipan in August 2011 indicated that individual was, according to researchers on hand, "very, very sick," had the worst kidneys ever seen, and was therefore euthanized. The diseased condition of this animal was in no way related to Navy sonar use or other activities. As discussed in the EIS/OEIS, incidents involving beaked whale strandings and mortality coincident with sonar use are relatively rare and have never occurred anywhere in the Pacific. Although the causes of strandings coincident with sonar use remain unknown, since 2006, the U.S. Navy has avoided the environmental and operational conditions that may have contributed to those strandings. Sonar has been ongoing for decades in the MITT Study Area by the U.S. Navy, including sonar from civilian fish-finders and depth sounders. Analysis of impacts of the proposed activities on beaked whale species is presented in Section 3.4 of the EIS/OEIS. The Navy developed a computer model to predict exposures to marine mammals, including beaked whales, which takes into account marine mammal density estimates, marine geologic features (e.g., water depth, bottom type), and the types of sound producing activities that would occur in the area. Conservative estimates of parameters are used in the model when data are scarce or not available (e.g., the greater of multiple density estimates). No mortalities or injuries of beaked whale species were predicted by the model. However, the Navy is seeking an authorization for take, given sensitivities these species may have to anthropogenic activities. The Navy's request includes two Ziphidae beaked whale takes annually to include any combination of Cuvier's beaked whale, Longman's beaked whale, and unspecified *Mesoplodon sp.* (not to exceed 10 beaked whales total over the 5-year length of the requested authorization).

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		The Navy has applied for a letter of authorization from NMFS concerning potential impacts of the proposed training and testing activities on all marine mammals protected under the MMPA and known to occur in the MITT Study Area.
CNMIDEQ - 46	Comment Number- IV.u. Pertaining to MITT EIS section: 3.7 Marine Vegetation The Acoustics and Physical Disturbance and Strike statements within the synopsis are a contradiction. First it states that: "*Underwater explosives could affect marine vegetation by destroying individual plants or damaging parts of plants".* Then it goes on to say that: " *The impact of these stressors are not expected to result in detectable changes in growth, survival, or propagation"*	The Final EIS/OEIS has been corrected. The synopsis now states that impacts on the population are not expected.
CNMIDEQ - 47	Comment Number -- IV.v. Pertaining to MITT section: Table 3.7-1 Major Groups of Marine Vegetation in the Mariana Islands Training and Testing Study Area Why is this table wrong? Sea grass is also found on the seafloor, All other plants are also found in the intertidal.	Table 3.7 in the Final EIS/OEIS has been corrected and now states that seagrass occurs on the seafloor also.
CNMIDEQ - 48	Comment Number - IV.w. Pertaining to MITT EIS section: 3.7.2 Affected Environment Numbers of species seem wrong. I don't think we have 10 species of seagrass and 16 species of mangroves in the Marianas.	The number of species discussed in Section 3.7.2 of the Final EIS/OEIS has been updated and now states that there are fewer mangroves in the area based on recently published information.
CNMIDEQ - 49	Comment Number - IV.x. Pertaining to MITT EIS section: 3.7.2.1 General Threats	The Final EIS/OEIS states that all vegetation species are susceptible to pollution including oil. Mangroves are a species that is more sensitive in

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	The EIS states that: "*mangroves would be the most susceptible marine vegetation because contact with oil can cause death, leaf loss and germination failure*" However, any species residing in the intertidal zone would be exposed to similar stressors, right?	the adult stages, which is why it is specifically discussed.
CNMIDEQ - 50	Comment Number - IV.y. Pertaining to MITT EIS section: 3.7.2.2.6.1 Seagrasses I don't think Tinian has seagrass beds along the northwestern, the northeastern, the southwestern and central eastern coastlines	Section 3.7.2.2.6.1 (Seagrasses) of the Final EIS/OEIS has been updated to reflect the most recent information from the Marine Resources Assessment.
CNMIDEQ - 51	Comment Number- IV.z. Pertaining to MITT EIS section: 3.7.2.2.6.2 Mangroves What 5 species of mangroves does CNMI have?	The number of species discussed in Section 3.7.2.2.6.2 (Mangroves) of the Final EIS/OEIS has been updated and now states that there are fewer mangroves in the area based on recently published information.
CNMIDEQ - 52	Comment Number- IV.aa. Pertaining to MITT EIS section: 3.7.3.1.1 Impacts from Explosives The EIS states that: "*If these vegetation types are near an explosion, only a small number of them are likely to be impacted relative to their total population level. The low number of explosions relative to the amount of seafloor macroalgae and single-celled algae in the Study Area also decreases the potential for impacts on these vegetation types.* " Not true. There are some species of algae that are uncommon such as Bornatella sphaerica, Halymenia dilatata, and Gibsmithia hawaiiensis. Due to their low numbers mortality of just a few individuals can have an adverse impact	These species noted in your comment are likely to be present on reefs. The seafloor detonations planned for the MITT Study Area would occur in designated underwater detonation sites that are not near reefs or other hard bottom habitat. Therefore, it is unlikely that these species would be impacted.

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	on population dynamics.	
CNMIDEQ - 53	Comment Number - IV.ab. Pertaining to MITT EIS section: 3.7.3.1.1 Impacts from Explosives The EIS states that: "*In addition, seafloor macroalgae are resilient to high levels of wave action (Mach et al. 2007)*" Not true for all alga species	Section 3.7.3.1.1 (Impacts from Explosives) of the Final EIS/OEIS has been updated and now states that some seafloor microalgae are resilient to high levels of wave action.
CNMIDEQ - 54	Comment Number- IV.ac. Pertaining to MITT EIS section: 3.7.3.1.1 Impacts from Explosives The EIS states that: "*Underwater explosions also may temporarily increase the turbidity (sediment suspended in the water) of nearby waters, incrementally reducing the amount of light available to marine vegetation. Reducing light availability will decrease, albeit temporarily, the photosynthetic ability of marine vegetation.*" Not true. If the sediments settle on the thallus of the algae, making the effects of sedimentation long lasting and potentially lethal.	The seafloor detonations planned for the MITT Study Area would occur in designated underwater detonation sites that are not near large groups of marine vegetation or reefs. Therefore, it is unlikely that there would be enough sediment displaced by the explosion to become lethal due to settling on the thallus of some algae. The likely impact, as discussed in the Final EIS/OEIS, is a decrease in light availability.
CNMIDEQ - 55	Comment Number - IV .ad. Pertaining to MITT EIS section: 3.7.3.1.1.1 No Action Alternative The EIS states that: "*Although marine vegetation growth in the immediate area of explosions would be inhibited, long-term survival, annual reproductive success, or lifetime reproductive success of the population would not be impacted since recovery is likely.*" Not true. There are some species of algae that are uncommon such as Bornatella sphaerica, Halymenia dilatata, and Gibsmithia hawaiiensis. Due to their low	The species provided in your comment are likely to be present on reefs. Seafloor detonations planned for the MITT Study Area would occur in designated underwater detonation sites that are not near reefs or other hard bottom habitat. Therefore, it is unlikely that these species would be impacted.

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	numbers mortality of just a few individuals can have an adverse impact on population dynamics.	
CNMIDEQ - 56	Comment Number - IV.ae. Pertaining to MITT EIS section: 3.7.3.1.1.2 Alternative 1 The EIS states that: "*Underwater explosions conducted for testing activities may injure or kill individual marine plants; however, exposure to these detonations would be limited to the vicinity of the explosions and would not pose a risk to marine vegetation communities*" Studies have shown that substrate altering disturbances such as ship groundings and storms can alter algal communities. Often a community composing of a diverse array of species exists prior to the disturbance. After the disturbance occurs the community can shift to a few opportunistic species that can alter the succession patterns.	The seafloor detonations planned for the MITT Study Area would occur in designated underwater detonation sites that are not near reefs or other hard bottom habitat. Also, these sites have been used in the past and are already disturbed. Therefore it is unlikely that these habitats would be impacted in manner that would cause a change in community structure.
CNMIDEQ - 57	Comment Number- IV.af. Pertaining to MITT EIS section: 3.7.3.1.1.3 Alternative 2 The EIS states that: "*Underwater explosions associated with testing activities under Alternative 2 would disturb approximately 4, 060 ft.2 (365 m2) per year of substrate in the Study Area*" What will be the total disturbed area at the end of the proposed activities? Will these explosion sites be monitored for recovery?	Underwater explosions occurring near the seafloor will only occur in the designated MITT mine neutralization sites (see Figure 3.3-6). The Final EIS/OEIS states that the Navy plans to use the same areas for these activities to minimize impacts.
CNMIDEQ - 58	Comment Number - IV.ag. Pertaining to MITT EIS section: 3.7.3.2 Physical Disturbance and Strike Stressors The EIS states that: "*Since the occurrence of marine algae is an indicator of marine mammal and sea turtle presence, some*	Some marine mammals and sea turtles feed in areas with higher densities of marine vegetation (for instance sea turtles may feed on seagrasses); therefore, mitigation measures that are implemented to avoid marine mammals and sea turtles would indirectly avoid marine vegetation.

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	mitigation measures designed to reduce impacts on these resources may indirectly reduce impacts on marine algae; see Section 5.3.2.2 (Physical Disturbance and Strike)." I don't see the connection. Could the authors elaborate on this point?	
CNMIDEQ - 59	Comment Number - IV .ah. Pertaining to MITT EIS section: 3.7.3.2.1 Impacts From Vessels and In-Water Devices The EIS states that: "*Seafloor macroalgae may be present in locations where these vessels and in-water devices occur, but the impacts would be minimal because of their resilience, distribution, and biomass. Because seafloor macroalgae in coastal areas are adapted to natural disturbances, such as storms and wave action that can exceed 33 ft. (I 0 m) per second (Mach et al. 2007)* " not true for all algae. Some are soft and delicate like Ventricaria ventricosa, Trichleocarpafragilis, and Rhipidosiphonjavensis	While there are some species that may not be as resilient, the impacts from these activities will not be widespread and therefore are not likely to result in population-level impacts.
CNMIDEQ - 60	Comment Number - IV.ai. Pertaining to MITT EIS section: 3.7.3.2.1.1 No Action Alternative "*Disturbances to marine vegetation caused by training activities may result in opportunities for invasive or nuisance species to colonize these areas. Per Chief of Naval Operations Instruction (OPNA VINST) 5090.1 C, the Navy will would prevent their introductions if possible, respond rapidly to control these species, monitor their populations, and restore the native species and habitats.*" Could the response plan and the associated budget be included in the EIS?	The response plan is not a supporting document for the Final EIS/OEIS; therefore, it is not included as an Appendix. The MITT EIS/OEIS is not a funding document; therefore, funding commitments for rapid response for potential invasive marine vegetation introductions are not included in the MITT EIS/OEIS. However, the Navy recognizes the importance of biosecurity, ecological integrity, and resiliency of island ecosystems to the potential introduction of invasive species to the Mariana Islands associated with military training and testing. The Navy has a number of policies in place to prevent, interdict, and control invasive species introductions in both terrestrial and marine environments. Specific policies for marine invasive species can be found at OPNAVINST 5090.1D. The Navy is involved with rapid response procedures with other stakeholder agencies, as well as a scientific diving program that includes monitoring for potentially invasive marine species.

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CNMIDEQ - 61	Comment Number- IV.aj. Pertaining to MITT EIS section: 3.7.3.2.1.2 Alternative 1 There are only a few beaches on Tinian. Unai Babui, Unai Chulu, Unai Dankulo are considered the majority of the beaches. These are unique for Tinan. I don't think it's appropriate for amphibious landings. Where will the tourist swim? Where will the turtles lay their eggs? Will there be enough habitat for nesting turtles?	Amphibious landing procedures have been included into the Standard Operating Procedures section of the mitigation section as well as Section 3.5 (Sea Turtles) of the Final EIS/OEIS. Prior to beach landings by amphibious vehicles, known sea turtle nesting beaches are surveyed by Navy biologists for the presence of sea turtle nests no more than 6 hours prior to a landing exercise. Areas free of nests are flagged, and vehicles are directed to remain within these areas. LCAC landings on Tinian are scheduled for high-tide. LCACs stay on-cushion until clear of the water and within a designated Craft Landing Zone (CLZ). Within the CLZ, LCAC come off-cushion with the LCAC oriented to permit expeditious vehicle and cargo offload onto a cleared offload and vehicle traffic area. Although LCAC and expeditionary vehicle traffic typically do not leave ruts, some compaction of sand in vehicle tracks is possible. If restoration of beach topography is required, it is conducted using non-mechanized methods. Additionally, Navy biologists monitor beaches during nighttime training landing exercises. If sea turtles are observed or known to be within the area, training activities are halted until all nests have been located and sea turtles have left the area. Identified nests are avoided during the night-time landing exercise.
CNMIDEQ - 62	Comment Number - IV.ak. Pertaining to MITT EIS section: 3.7.3.2.1.4 Substressor Impact on Marine Vegetation as Essential Fish Habitat from Vessels and In-Water Devices (Preferred Alternative) Macroalgae and submerged vegetation are highly susceptible to disturbance from vessels (ex. boats, amphibious landing craft). What studies show that seagrasses and macroalgae aren't susceptible to disturbances from boats? The paragraph goes on into another contradiction. First the paragraph says that "*activities would have no impact*", then it says that impacts will be "*minimal and short term*".	Section 3.7.3.2.1.4 (Substressor Impact on Marine Vegetation as Essential Fish Habitat from Vessels and In-Water Devices [Preferred Alternative]) of the Final EIS/OEIS has been updated with the appropriate impact analysis for Essential Fish Habitat.
CNMIDEQ - 63	Comment Number- IV.al. Pertaining to MITT EIS section: 3.7.3.2.2 Impacts from Military	The Navy continues to look for ways to lessen its environmental impacts related to marine debris. As discussed in the MITT EIS/OEIS, military expended material is not expected to pose a risk to the marine

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	Expended Materials Floating target fragments could be considered marine debris tomorrow. How does the military propose to address the influx of marine debris in the Marianas?	environment. Additional analysis can also be found in Section 3.3 (Marine Habitats), specifically in Section 3.3.3.2.2 (Impacts from Military Expended Materials).
CNMIDEQ - 64	Comment Number - IV.am. Pertaining to MITT EIS section: 3.7.3.2.3 Impacts from Seafloor Devices How will sites for anchor training be assess to assure the site is devoid of marine vegetation?	Section 3.7.3.2.3 (Impacts from Seafloor Devices) of the Final EIS/OEIS states that the areas where precision anchoring would occur are near ports over unconsolidated sediments that are lacking vegetation, and these areas have been previously disturbed.
CNMIDEQ - 65	Comment Number - IV.an. Pertaining to MITT EIS section: 3.7.3.3 Secondary Stressors The EIS states that: "*The analysis included in Section 3.1 (Sediments and Water Quality) determined that neither state or federal standards or guidelines for sediments or water quality would be violated by the No Action Alternative, Alternative 1, or Alternative 2.*" How does the military know without a doubt that military activities will not violate the water quality standards of total suspended solids and turbidity (measures of sedimentation)?	Information regarding potential sediment runoff from military use of FDM has been added to Section 3.1 (Sediments and Water Quality) of the EIS/OEIS. Information regarding how erosion from FDM may impact specific resources has been added to particular resource sections (e.g., marine habitats, marine invertebrates, fish, sea turtles, and marine mammals). Further, the Final EIS/OEIS has been updated to reference the Mariana Islands Range Complex Operational Range Clearance Plan, dated June 2013. This plan outlines specific procedures and schedules for range clearance on FDM. The siting of targets and impact areas consider protections to relatively higher quality habitat in the northern portion of the island, the narrow land bridge, and various limestone cave features along the coast. The Navy believes that the location of the impact areas offer the least impacts to fulfill military mission requirements of the range. The Final EIS/OEIS has been updated with additional information. Section 3.1.3.1.5.3 (Farallon de Medinilla Specific Impacts) has been added to include more information on FDM nearshore assessments. The Navy has conducted 13 annual marine ecological surveys of near shore marine resources at FDM between 1999 and 2012 (no survey was performed in 2011). The 1999–2004 surveys were completed by a Navy contractor and a representative from the USFWS, the National Marine Fisheries Service and the Commonwealth of the Northern Mariana

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		Islands. All surveys since 2004 have been performed by the Naval Facilities Engineering and Expeditionary Warfare Center's Scientific Diving Services (SDS). The 2012 survey report presents the findings of the calendar year 2012 survey and compares those findings with the previous 12 surveys. Although minor ecological impacts, which could be attributed to military training, were detected in 2012 and previous surveys, no significant or substantial impacts on the physical or biological environment have been detected between 1999 and 2012. This conclusion was reached by all the investigators (1999–2012) and was based upon four criteria: 1) very few areas of disturbance have been detected, 2) most of the disturbed areas have been located in natural rubble environments, 3) the size of the disturbed areas were generally less than 2 square meters and, 4) substantial or complete recovery has occurred within 1 year. For water quality, the 2012 and previous reports noted mucus production in corals, which is an indicator of stress from pollutants and sedimentation. None of the reporting years report mucus production to indicate stress. This factor and other factors of marine health in nearshore waters of FDM provide strong evidence that the military training activities have not had a significant adverse impact upon water quality. Off of Tinian, there is a potential for amphibious training activities to increase turbidity, and possible follow-on effects of sedimentation in reef environments. In a previous study of the impact of amphibious landings on corals at Unai Chulu in Tinian during Tandem Thrust 1999, it was observed that sediment plumes were generated in the track of the amphibious vehicles. The plumes remained localized in the track area, dissipated within minutes, and were not qualitatively different from episodes of sediment resuspension during periods of storm generated waves that occur routinely on Tinian. This information can be found in Section 3.1.3 (Environmental Consequences).
CNMIDEQ - 66	Comment Number - IV.ao.	Section 3.8 provides general reference to all coral species as well as information on threats facing all corals in the regions. While ESA

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	Pertaining to MITT EIS section: 3.8 Marine Invertebrates In general, this section provides extensive information on the 66 species of hermatypic corals that are proposed for listing under the Endangered Species Act. While this is a good start, it is negligent of the other roughly 200 species of coral found in the CNMI and the threats that they face. The authors seem to assume that the only corals of concern are those that are potentially going to be listed, while the focus should really be on the ecosystem as a whole.	conclusions focus on the proposed species for listing the analysis and NEPA conclusions focus on all invertebrate species populations. A general assumption that can be made is that if an impact is not expected for an ESA-species, then it is less likely for a species that is more abundant, under less of a threat, or not proposed for listing.
CNMIDEQ - 67	Comment Number - IV.ap. Pertaining to MITT EIS section: Table 3.8-1 Species Proposed for Endangered Species Act Listing within the MITT Study Area The table uses common names which are rather arbitrarily assigned, with some of them even being inaccurate from what is commonly found in the scientific literature. What source was used for the common names?	Many of the common names used here are from NOAA Pacific Region documents; however, genus and species names have been retained throughout the document as Navy acknowledges that common names can have local variants.
CNMIDEQ - 68	Comment Number - IV.aq. Pertaining to MITT EIS section: 3.8.2.1 Invertebrate Hearing and Vocalization Coral sensory capabilities are particularly sensitive during spawning events. They rely heavily on their limited sensory capabilities to find suitable substrate to settle upon. Any additional stressors (acoustic, propulsive, etc.) could make this already difficult process even harder.	Potential impacts of acoustic, direct strike, and impulsive stressors are discussed in relevant stressor sections in Section 3.8 (Marine Invertebrates) of the EIS/OEIS. Discussions of potential impacts on spawning events and recruitment into the reef habitat are included.
CNMIDEQ - 69	Comment Number - IV .ar. Pertaining to MITT EIS section: 3.8.2.3.2 Habitat and Geographic Range	NOAA Pacific Region documents, along with IUCN species accounts, were used to generally describe types of coral growth. However, the Final EIS/OEIS has been revised to use more commonly used terms for types of acroporid corals.

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	" ... *whereas clusters and semi-massive types* ... " The terms 'clusters' and 'semi-massive' are not typical when used in describing acroporid corals. What source was used and why wasn't more commonly used descriptors presented?	
CNMIDEQ - 70	Comment Number- IV.as. Pertaining to MITT EIS section: 3.8.3.3 Physical Disturbance and Strike Stressors "*With the exception of corals and other sessile benthic invertebrates, most mobile invertebrate populations recover quickly from non-extractive disturbance.* " What data is used to make this statement? Is there any data showing how invertebrates that rely on biogenic habitats react to non-targeted disturbances to their environment (ex., sea urchins)?	The Final EIS/OEIS has been updated with the scientific citation which discusses physical disturbance on benthic invertebrates.
CNMIDEQ - 71	Comment Number-IV.at. Pertaining to MITT EIS section: 3.8.3.3 Physical Disturbance and Strike Stressors "*If the sites of the activities are the same for repeated exercises, this could over time (years) alter the benthic composition, especially sessile invertebrates (e.g., coral).* " Is there a schedule/plan for when, where and how often exercises will occur? Will monitoring of these areas happen before, during and after training exercises?	With few exceptions, activities involving vessels and in-water devices are not intended to contact the seafloor. Corals proposed for listing under the ESA prefer shallow water habitat, where the majority of vessels used during training and testing activities would not operate. Except for amphibious activities, there is minimal potential strike impact and limited potential disturbance impact on benthic or habitat-forming marine invertebrates. Many corals and hardbottom habitat are fragile and particularly vulnerable to physical disturbance. However, the military takes measures to avoid running aground and would plan amphibious and other nearshore activities to avoid areas where corals proposed for listing under the ESA are known to occur. Prior to any amphibious over-the-beach training activity conducted with larger amphibious vehicles such as LCACs or AAVs (e.g., Amphibious Assaults), a hydrographic survey and a beach survey would be required. The surveys would be conducted to identify and designate boat lanes and beach landing areas that are clear of coral, hard bottom substrate, and obstructions. LCAC landing and departure activities would be scheduled at high tide. In addition, LCACs would stay fully on cushion or hover when over shallow reef to avoid corals and hard bottom

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		substrate. This is a standard operating procedure for safe operation of LCACs. Over-the-beach amphibious activity would only occur within designated areas based on the hydrographic and beach surveys. Similarly, AAV activities would only be scheduled within designated boat lanes and beach landing areas and would conduct their beach landings and departures at high tide one vehicle at a time within their designated boat lane (COMNAVMAR Instruction 3500.4A). Based on the surveys, if the beach landing area and boat lane is clear, the activity could be conducted, and crews would follow procedures to avoid obstructions to navigation, including coral reefs; however, if there is any potential for impacts on occur on corals or hard bottom substrate, the Navy will coordinate with applicable resource agencies before conducting the activity. Chapter 2 (Description of Proposed Action and Alternatives) of the EIS/OEIS includes details on the number of events that will occur annually and the general area in which they will occur. In addition, Appendix A (Training and Testing Activities Descriptions) provides more detail for these activities.
CNMIDEQ - 72	Comment Number - IV.au. Pertaining to MITT EIS section: 3.8.3.3.3 Impacts from Seafloor Devices "*With the exception of corals and other sessile benthic invertebrates, most mobile invertebrate populations recover quickly from non-extractive disturbance.* " What is the source for this information? Pollution can severely damage organisms.	The Final EIS/OEIS has been updated with the scientific citation that discusses physical disturbance on benthic invertebrates. Information provided in Herkul et al. 2011 was added to the Final EIS/EIS to provide better explanation of disturbance.
CNMIDEQ - 73	Comment Number - IV .av. Pertaining to MITT EIS section: 3.8.3.6 Secondary Stressors CNMI Earthmoving & Erosion Control Regulations (65-30-315) and CNMI Water Quality Regulations (65-130-530) are in place	All applicable federal and state regulations are included in Section 3.0.1 (Regulatory Framework) in the EIS/OEIS.

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	to help ensure that corals, reefs and other marine habitats are protected from disturbances. No where in the document are these regulations acknowledged.	
CNMIDEQ - 74	Comment Number - IV.aw. Pertaining to MITT EIS section: 3.9.3.1.1 Analysis Background and Framework The EIS says that military noises are bad for fish, yet this document does not address the impact it will have on this resource? Why does the EIS not address this impact?	Section 3.9.3.1 (Acoustic Stressors) of the EIS/OEIS addresses impacts from acoustic sources, including vessel noise, explosions, sonar, and launch/firing impact noise on fish.
CNMIDEQ – 75	Comment Number-IV.ax. Pertaining to MITT EIS section: 3.9.3.1.1.1 Direct Injury The military acknowledges that explosives kill fish. Why does the military continue such practices? Is the training really worth the squandering of our resources? Comment Number- IV.ay. Pertaining to MITT EIS section 3.9.3.1.3 Impacts from Explosives and Other Impulsive ound Sources The EIS continues to promote the fallacy that a lost of some individuals will not have an impact on the population, but this is not true, especially for those species that are rare and uncommon.	A thorough analysis of impacts on fish is in Section 3.9 (Fish) of the EIS/OEIS. The EIS/OEIS concluded there would be no long-term impacts on fish. Impacts on single individuals do not translate to impacts on the entire population or the resource as a whole. Based on the analysis, the proposed training and testing activities do not pose a significant risk to fish given that these same activities have been conducted for many years within the Study Area and in other Range Complexes with no indications of broad-scale impacts or of significant biological impact to fish locations. The scalloped hammerhead shark is the only ESA-listed fish within the Study Area. A detailed description and analysis has been included in the Final EIS/OEIS (Section 3.9.2.3, Scalloped Hammerhead Shark). While the use of explosives and other impulsive acoustic sources may affect and is likely to adversely affect scalloped hammerhead sharks, the Navy's Proposed Action would have a negligible effect on the habitat and mortality of the Indo-West Pacific distinct population segment and would not contribute to the trends that have led to this species' decline (Section 3.9.3.1, Acoustic Stressors).
CNMIDEQ – 76	Comment Number - IV.az. Pertaining to MITT EIS section: 3.10.2.1.5.2 Cliff-Line Vegetation	The Final EIS/OEIS has been updated to include detailed descriptions of target areas and ordnance use, based on a revised COMNAVMARIANAS 3500.4A (Marianas Training Manual, dated October 2013) and the MIRC Operational Range Clearance Plan (June 2013). Section 3.10 (Terrestrial

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	Photo showing the decline in shrubs and trees on Farallon de Medinilla 1944-2012. How will continued military activities impact the flora and fauna on this island?	Species and Habitats) has been updated with this information. In summary, Impact Area 1 contains high fidelity target structures and is comprised of vehicle shells and cargo containers. This area is authorized for inert ordnance only, and operators are required to report any live ordnance mistakenly dropped into Impact Area 1 to JRM Operations. Impact Area 1 contains nine targets of varying shapes and sizes, including four vehicles and five targets comprised of shipping containers. The target vehicles, rectangular target, the square target, and the L-shaped target only receive lightweight inert ordnance less than 100 lb. Strafing is prohibited on these targets. The H-shaped target may be targeted with inert ordnance less than 500 lb. with strafing also prohibited. The E-shaped target may be targeted with inert ordnance not exceeding 2,000 lb., and strafing is authorized on this target. Impact Area 2 may be used for both live and inert ordnance. Strafing is permitted in this area. Ordnance is prohibited from impacting the land bridge to the greatest extent possible. Operators are required to report ordnance observed impacting the land bridge. Impact Area 3 is south of the land bridge and is used for live and inert ordnance. Strafing is permitted in this area. Non-contiguous Point Targets are used for firing at vertical targets on the cliff, as part of Naval surface fire support training. There are six targets, all along the western side of FDM. Because of these training restrictions, the Navy has limited the targeted areas on FDM, which has apparently maintained higher quality habitat in the northern special use area.
CNMIDEQ - 77	Comment Number- IV.ba. Pertaining to MITT EIS section: 3.10.3.2.3 Impacts from Ground Disturbance There is no mention of beach landings as a stressor (only troop movements on land). Beach landings have specific impacts on the beach communities, especially turtle nesting sites.	Amphibious landing procedures have been included in Chapter 5 (Standard Operation Procedures, Mitigation, and Monitoring) as well as Section 3.5 (Sea Turtles) of the Final EIS/OEIS. Prior to beach landings by amphibious vehicles, known sea turtle nesting beaches are surveyed by Navy biologists for the presence of sea turtle nests no more than 6 hours prior to a landing exercise. Areas free of nests are flagged, and vehicles are directed to remain within these areas. LCAC landings on Tinian are scheduled for high-tide. LCACs stay on-cushion until clear of the water and within a designated Craft Landing Zone (CLZ). Within the CLZ, LCAC come off-cushion with the LCAC oriented to permit expeditious vehicle and cargo offload onto a

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		cleared offload and vehicle traffic area. Although LCAC and expeditionary vehicle traffic typically do not leave ruts, some compaction of sand in vehicle tracks is possible. If restoration of beach topography is required it is conducted using non-mechanized methods. Additionally, Navy biologists monitor beaches during nighttime training landing exercises. If sea turtles are observed or known to be within the area, training activities are halted until all nests have been located and sea turtles have left the area. Identified nests are avoided during the night-time landing exercise.
CNMIDEQ - 78	Comment Number-IV.bb. Pertaining to MITT EIS section: 5.3.1.2.1.2 High-Frequency and Non-Hull Mounted Midfrequency Active Sonar The Littoral Combat Ship seem like something that needs to train in shallow water. What type of impact will such a boat have on the nearshore environment?	Analysis of the LCS is included in the EIS/OEIS for all applicable resource areas and associated stressors (e.g., acoustic and physical disturbance and strike stressors) attributed to the LCS. The EIS/OEIS concluded that operation of the LCS would not result in any impacts in the nearshore environment.
CNMIDEQ - 79	Comment Number- IV.bc. Pertaining to MITT EIS section: 5.3.2 Mitigation Zone Procedural Measures Seems like the "Mitigation Zone Procedural Measures" is dependent on the "Lookouts" if the lookouts do not see the whale then the mitigation zone procedural measures will not be applied. Why aren't better checks employed to enact the "Mitigation Zone Procedural Measures"?	Mitigation Zone Procedural Measures are dependent on Lookouts spotting a marine mammal. Navy Lookouts focus observation on the mitigation zone defined by the range to PTS or injury effects, which for activities using sonar is no more than 100 m, and for activities that use explosives ranges to a maximum of 265 m for mid frequency cetaceans, 485 m for low frequency cetaceans, and 855 m (bin E12) for high frequency cetaceans. If available and compatible with the training or testing activity, passive acoustic monitoring to detect submerged and calling cetaceans may be used. However, most marine mammals do not have extended dive times and would likely surface frequently during the pre-activity observation of the mitigation zone. Refer to Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) for details on Lookout procedures relevant to specific activities. The Navy is formally consulting with the NMFS concerning the potential impacts of the proposed training and testing activities on all marine mammals protected under the MMPA and all threatened and endangered marine species listed under the ESA known to occur in the MITT Study Area. The

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		Navy has updated the Final EIS/OEIS based on Section 7 consultation.
CNMIDEQ - 80	Comment Number- IV.bd. Pertaining to MITT EIS section: 5.3.2.1.2. 1 Improved Extended Echo Ranging Sonobuoys Why are mitigation zones being reduced?	As shown in Table 5.3 2, the predicted maximum range to onset of PTS for Improved Extended Echo Ranging sonobuoys is approximately 563 yd. (515 m). This range was determined by the high-frequency cetacean functional hearing group. The remaining functional hearing groups had a shorter range to onset of PTS, so the mitigation zone will provide further protection for these species. The predicted average range to onset of TTS across all functional hearing groups is 434 yd. (397 m). Implementation of the 600 yd. (549 m) mitigation zone will reduce the potential for exposure to higher levels of energy that would result in injury and larger threshold shifts that would result in recovery (i.e., TTS) when individuals are sighted.
CNMIDEQ - 81	Comment Number - IV.be. Pertaining to MITT EIS section: 5 .3 .3 Mitigation Areas Can a map of the Mitigation areas be provided?	As described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring), these recommended mitigation areas may be based off endangered species critical habitats, endangered species reproductive areas, or bottom features. The size and location of certain habitat areas, such as the critical habitats, is subject to change over time, and maps purporting their location may also change. However, the Navy's effectiveness and operational assessments, and resulting mitigation recommendations are entirely dependent on the mitigation area defined in this document.
CNMIDEQ - 82	Comment Number- IV.bf. Pertaining to MITT EIS section: 5.3.3 Mitigation Areas "*Of note, the Marianas Trench Marine National Monument protects approximately 95,216 square miles of submerged lands and waters. Although the restrictions placed on the monument do not apply to military readiness activities, the Armed Forces shall ensure, by the adoption of appropriate measuresnot impairing operations or operational capabilities, that its vessels and aircraft act in a manner consistent, so far as is reasonable and practicable, with this proclamation (6*	The Marianas Trench National Monument (MTNM) was established to protect the submerged lands and waters of the Mariana Archipelago and was designated with the purpose of protecting the submerged volcanic areas of the Mariana Ridge, the coral reef ecosystem of the waters of surrounding islands, and the Marianas Trench. The Monument includes the submerged lands of the "Volcano Unit" and the water column and submerged lands within the "Island Unit." The prohibitions required by the proclamation do not apply to activities and exercises of the Armed Forces (including those carried out by the United States Coast Guard). However, when operations do occur in this area or any of the other Monuments, the military would follow the general mitigation protocols established in the final rule and LOA; for

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	January 2009). " What exactly does this mean?	example, by powering or shutting down sonar when marine mammals are detected within ranges where the received sound level is likely to result in temporary threshold shift (TTS) or injury and using exclusion zones that avoid exposing marine mammals to levels of explosives likely to result in injury or death of marine mammals.
CNMIDEQ - 83	**Section V** Comment Number- V.a. Pertaining to the Mitigation Activity of: Seasonal and/or Geograohic Limitations Sounds like a good idea. From what I understand historically humpback whales have not frequented these waters during calving season until recently. The marine monitoring team and others have documented an increased number of sightings over the past two years. These sightings have occurred during calving and breeding season, a critical time in their life cycle. This could be considered new knowledge, a reason for the military to review current procedures. Due to the seasonality of humpback activity in the Marianas, a seasonal limitation is appropriate when humpback whales are considered. What are the numbers of humpback whales in the marianas?	Given the lack of systematic survey data and limited number of humpback whale sightings in the Study Area, a Marianas-specific abundance estimate for humpback whales is not available. The current population estimates for the Western North Pacific stock of humpback whales (the stock most likely to be encountered within the MITT Study Area) is 938–1,107 animals (Allen and Angliss 2013 - Final Alaska 2012 Stock Assessment Report). As noted in the EIS/OEIS, humpback whales have been sighted during the Navy's routine aerial surveys of FDM on several occasions, including two sightings in 2006 (January and March) and another sighting in February of 2007, 18 mi. (29 km) north of Saipan. During the Navy-funded survey of the Study Area in January–April 2007, humpback whales were observed in waters northeast of Saipan. Acoustic detections of humpback song were also made during these sightings as well as on other occasions. The Navy subsequently funded small boat surveys around Guam and Saipan during the winter months (February and March) to investigate the presence of humpback whales around the Mariana Islands. Although no humpbacks were sighted during these surveys, the field team received consistent reports from local commercial sport fishing captains who described general humpback sightings as passing through Guam and Saipan around January, heading north, in a "traveling" mode. The captains also noted that humpback sightings are less common in February and March, but begin to pick up again sometime in April, with the animals generally traveling south. There is some speculation that humpbacks spend time during the winter near the more northern islands of the Mariana archipelago; however, this has not been confirmed. These anecdotal humpback reports from local fisherman and boat captains lend support to the idea that humpback whales could be in the process of expanding or re-occupying their historic winter range into the Marianas; however, current data are not able to support or refute this hypothesis. In summary, data on humpback whale abundance and distribution in the

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		Study Area are insufficient to make any meaningful procedural plans. The military cannot restrict training and testing to certain times of the year (seasons) or limit the extent of areas needed to conduct training and testing. Mitigation measures are in place to reduce or eliminate impacts on marine mammals, including humpback whales. Testing and training activities have been occurring in the region for decades coincident with the anecdotal increase in humpback sightings.
CNMIDEQ - 84	Comment Number - V.b. Pertaining to the Mitigation Activity of: Use of Dedicated or Independent Marine Mammal Observers to Implement Mitigation Why can't the military use their biologist as marine mammal observers?	The use of third-party observers or Navy biologists would compromise security for some activities involving active sonar due to the requirement to provide advance notification of specific times and locations of Navy platforms. Reliance on the availability of third-party or Navy biologists would impact training and testing flexibility. The presence of other aircraft in the vicinity of naval activities would raise safety concerns for both the independent observers and naval aircraft and vessels. Furthermore, vessels and aircraft have limited passenger capacity, and are intended to support only personnel essential to the operation and mission of the vessel or aircraft. Training and testing event planning includes careful consideration of this limited capacity in the placement of personnel on ships involved in the event. Inclusion of non-Navy or Navy biologist as observers onboard these vessels would require that in some cases there would be no additional space for essential Navy personnel required to meet the mission objectives.
CNMIDEQ - 85	Comment Number - V .c. Pertaining to the Mitigation Activity of: Use of Addi tional Detection Methods to Implement Mitigation (Shutdown Zones) A number of additional detection methods are being proposed. The military seems inflexible here. They should at least be able to enact an additional detection method other that lookouts, in particular a method that would be effective at night, in times of low visibility, or during high seas. Especially since the mitigation zone procedural measures is	The military will conduct passive acoustic monitoring during several activities with Navy assets, such as sonobuoys, already participating in the activity (e.g., sinking exercises, torpedo [explosive] testing, and improved extended echo ranging sonobuoys). Refer to Section 5.3.2 (Mitigation Zone Procedural Measures) for additional information on the use of passive acoustics during training and testing activities. The Navy does not have the resources to construct and maintain additional passive acoustic monitoring systems for each training and testing activity. Additional mitigation measures described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring), include powering down or shutting down sonar systems when marine mammals

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	only enacted when a lookout detects a marine mammal. Why aren't additional activities put into place to initiate the mitigation zone procedural measures?	are detected within the mitigation zone.
CNMIDEQ - 86	Comment Number- V.d. Pertaining to the Mitigation Activity of: Avoidance of Federal Marine National Monuments, including the Marianas Trench Marine National Monument What are the numbers of marine mammals found in the Marianas Trench Marine National Monument?	As noted in the EIS/OEIS (Section 3.4.1), prior to the Navy-funded 2007 line-transect survey there was little information available on the occurrence of marine mammals in the Study Area. The Navy conducted the first comprehensive marine mammal survey of waters off the Mariana Islands from 13 January to 13 April 2007. The survey was conducted using systematic line-transect survey protocol consistent with that used by the National Marine Fisheries Service (NMFS) Southwest Fisheries Science Center and allowed for the derivation of the first density estimates specific to the Study Area. However, sighting data were very limited and provided uniform density estimates for select species for the entire Study Area; current data are insufficient to provide density estimates specific to the Marianas Trench Marine National Monument. Density data used for the Navy's analysis were developed in consultation with NMFS' experts at the two science centers (Southwest Fisheries Science Center and Pacific Islands Fisheries Science Center); a description of the density data and associated sources are provided in the Navy's Pacific Marine Species Density Database Technical Report available from the MITT EIS/OEIS website (www.mitt-eis.com).
CNMIDEQ - 87	Comment Number - V.e. Pertaining to the Mitigation Activity of: Expansion of Exclusion Area Delineated for Use with Explosive Detonations The military recognizes that if the exclusion zone were enlarged it would reduce take therefore they should implement such augmentations, especially because it has no affect on readiness preparation. Why isn't the exclusion zone increased?	As a result of the updates to the acoustic propagation modeling, in some cases, the ranges to onset of TTS effects are much larger than those output by previous Phase I models. Due to the ineffectiveness and unacceptable operational impacts associated with mitigating these large areas, the Navy is unable to mitigate for onset of TTS for every activity. In this MITT analysis, the Navy developed each recommended mitigation zone to avoid or reduce the potential for onset of the lowest level of injury, permanent threshold shift (PTS), out to the predicted maximum range. In some cases where the ranges to effects are smaller than previous models estimated, the mitigation zones were adjusted accordingly to provide consistency across the measures. Mitigating to the predicted maximum range to PTS consequently also mitigates to the predicted maximum range to onset mortality (1 percent mortality), onset slight lung injury, and onset slight gastrointestinal tract injury,

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		since the maximum range to effects for these criteria are shorter than for PTS. Furthermore, in most cases, the predicted maximum range to PTS also consequently covers the predicted average range to TTS.
CNMIDEQ - 88	Comment Number - V.f. Pertaining to the Mitigation Activity of: Adopting Mitigation Measures of Foreign Nation Navies If other nations are implementing measures to protect marine mammals, why doesn't the US do the same?	Section 5.3.4.1.15 (Adopt Mitigation Measures of Foreign Nation Navies) in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) explains why mitigation measures implemented by foreign navies may not be appropriate for the training and testing activities proposed in the EIS/OEIS. The U.S. Navy implements the mitigation measures described in Chapter 5 and created specifically for the proposed activities in accordance with U.S. law and applicable regulations. Many foreign navies take a similar approach, creating mitigation appropriate for their activities and in accordance with their country's regulations and laws.
Guam Department of Agriculture Dipattamenton Agrikottura (Guam DoAg) - 1	Hafa Adai: The Draft Environmental Impact Statement/Overseas Environmental Impact Statement for the Mariana Islands Military Testing and Training (MITT DEIS) Volume I and II were released for public review September 13, 2013. The Guam Department of Agriculture, Division of Aquatic and Wildlife Resources requested and received a hard copy of the MITT DEIS for review pursuant to the National Environmental Policy Act of 1969 [42 U.S.C. 4321 *et seq.*; 83 Stat.852] (NEPA) on November 12, 2013. The proposed action by the US Department of the Navy (DON) includes reevaluation and reauthorization of the training and testing activities reviewed in the Marianas Islands Range Complex (MIRC) in May 2010, with an expansion of the study area to include high seas and transit corridors not previously approved, as well as adjustments to locations and tempo of training and testing activities. The actions are proposed to achieve and maintain military readiness, to support and to conduct current, emerging, and future training and Research, Development, Test and Evaluation activities, while enhancing	Thank you for your participation in the NEPA process. Your comment has been broken down into component parts to ensure that all comments provided in your letter are addressed. As a result, this portion of the comment does not contain a specific question or inquiry related to the EIS/OEIS. Therefore, no response is provided.

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	training resources through investment in Guam and the Commonwealth of the Northern Marianas Islands. The draft MITT DEIS commits at-sea and land-based training areas on Guam and CNMI, as well as transit corridors between Guam and CNMI.	
Guam DoAg – 2	As the local state agency mandated to monitor and protect Guam's biological resources, the Guam Department of Agriculture (DoAg) submits the following general comments to be addressed in the development of the MITT Final Environmental Impact Statement and Record of Decision. In addition, we have included comments in table form referencing specific document pages (see attachment). 1. First and foremost, DOD needs to provide a progressive, comprehensive plan for the recovery of native species on DOD property in consultation and coordination with DoAg. Without the ability to reintroduce federally endangered species on DOD property the cumulative impacts of DOD actions are jeopardizing the DoAg's ability to recover Guam's native species. Furthermore, DOD's failure to coordinate with DoAg as required by the Sikes Act of 1960 [16 U.S.C. *et seq.*; 74 stat. 1052], as amended, and recognize the DoAg's ability to assist DOD in meeting their Section 7 requirements under the Endangered Species Act of 1973 [16 U.S.C. 1531 *et seq*.: 87 Stat. 884], as amended, results in a waste of taxpayers' dollars. The DoAg further emphasizes the need to be consulted and notified in matters that may impact the natural resources of Guam.	The Navy is improving relationships with Sikes Act partners on Guam and the CNMI. While outside the current scope of this EIS/OEIS document, the Navy will continue to coordinate and discuss issues with DoAg regarding access for monitoring and management.
Guam DoAg - 3	2. Secondly, the Final EIS needs to outline how DON will address long-standing issues regarding timely access for the DoAg Division of Aquatic and Wildlife Resources (DAWR) staff	While outside the current scope of this EIS/OEIS document, the military will continue to coordinate and discuss issues with DoAg regarding

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	to all DOD lands for the purpose of monitoring and management of Guam's natural resources. The DoAg-DAWR staff could complete monitoring of resources under annual federal funded grant objectives, without cost, or at a much lower cost to DON that is currently being contracted and assist with meeting Sikes Act coordination obligations. The current access requirements for DoAg-DAWR staff are cumbersome and prevent timely coordination as opposed to those procedures for federal employees and contractors.	access for monitoring and management.
Guam DoAg - 4	3. The Final MITT DEIS needs to address another long-standing issue that is DOD's failure to comply with local laws. The MITT activities and study area include the Piti Marine Preserve Area that extends to the 600-foot contour. Any take of nonpelagic fishes within this area is a violation of Guam law.	Please see Section 3.0.1 (Regulatory Framework) for a complete list of Federal Statues and Executive Orders addressed in Chapter 3 (Affected Environment and Environmental Consequences). In addition, refer to Chapter 6.0 Additional Regulatory Considerations and Table 6.1-1 Summary of Environmental Compliance for the Proposed Action. As part of this process, the Navy has consulted under the Marine Mammal Protection Act, Endangered Species Act, and Magnuson-Stevens Fishery Conservation Management Act.
Guam DoAg - 5	4. The Final MITT DEIS must mitigate the cumulative impacts to recreational fishing in the oceanic areas that will be impacted by the proposed action. The NEPA documents for other proposed military activities indicate the closure of important fishing areas such as Ritidian and Pati Point. The additional loss of key recreational fishing areas proposed in the Draft MITT EIS is unacceptable.	The military is aware of the importance of recreational fishing to the local community and to the tourism industry and its benefit to the local economy. The majority of military activities would occur far from shore (greater than 3 nm), which limits the potential for effects to recreational fishing which occurs predominantly in nearshore waters (less than 3 nm from land). The military continues to interact with the local community to mitigate the potential effects of temporary closures on recreational fishing and other uses of the marine environment. For example, the military allows access to the northern portion of W-517 (south of Guam) during activities that occur far from that area in the southern portion of W-517 so that fishers or other mariners can transit to and fish on White Tuna Banks and other nearby popular fishing sites. Previously, any activities occurring in W-517 would have required closure of the entire warning area regardless of where the activity took place within W-517. In the CNMI, the military is also planning to announce upcoming periods when the 12 nm danger zone surrounding FDM will not be used for several consecutive days, allowing mariners to plan to fish in or transit through the danger zone (between 3 and 12 nm from shore). The 3 nm

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		danger zone surrounding FDM is permanently closed for safety reasons. The military announces temporary closures at least 7 days in advance of an activity to help minimize potential conflicts with non-military activities. Chapter 4 (Cumulative Impacts) presents the analysis of cumulative impacts as it relates to other proposed military activities in the Study Area (see Table 4.3-1 [Other Actions and Other Environmental Considerations Identified for the Cumulative Impacts Analysis]).
Guam DoAg - 6	5. Other boaters, including divers and other recreational users, also frequent many areas within the MITT study area. There is no clear indication of how extensive closures will be - do events last for an hour, or a day, or a week? The Final EIS and ROD need to minimize closure of areas regularly used by recreational boaters and identify clearly the space and time of the closures.	Area closures are minimized to only those times when activities occur. These closure times are available via Local Notice to Mariners, Notice to Airmen, as well as via various other announcements.
Guam DoAg - 7	6. Prior to training exercises, the DON and USCG issue NOTMARs and NOTAMs to announce an exercise and to notify the public of potential hazards in the exercise area. DON must ensure these notices are adequately distributed to the public and with a much larger area proposed in the MITT distribution must be assessed for adequacy.	The notices are distributed through all appropriate channels and disseminated to all areas of concern. The U.S. Coast Guard in Guam uses their radios and Global Maritime Distress and Safety System (GMDSS) to broadcast radio warnings to mariners throughout the Mariana Islands naval area on VHF-FM, NAVTEXT, and HF narrow band. In addition, Local Notices to Mariners are published weekly by the U.S. Coast Guard that includes timely warnings for hazard areas associated with military training in the Marianas Islands. The appropriate way to receive these warnings is via Local Notices to Mariners and/or Broadcast Notices to Mariners. Notices to Airmen are issued by the FAA. The Navy works with the U.S. Coast Guard and the FAA on Guam to issue warnings of military hazard areas via the appropriate means of Local Notices to Mariners, Broadcast Notices to Mariners, and Notices to Airmen. Within the Socioeconomics section (3.12) of the EIS/OEIS, the discussion states that in addition to issuing NOTAMs and NOTMARs to announce scheduled training and testing events, upcoming events are communicated to stakeholders (e.g., local mayors, resources agencies, and fishers) using a telephone tree and e-mail distribution developed by Joint Region Marianas with stakeholder input. Notices are also sent to

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		the NOAA, local cable channels, and emergency management offices.
Guam DoAg - 8	7. The ROD must clearly indicate how the Micronesia Biosecurity Plan will be implemented, including funding mechanisms, to prevent the spread of invasive alien species (lAS) throughout the region. For example, I00% inspection rates for brown treesnake (BTS) at ports of exit from Guam and entry points to other regional areas are necessary to ensure BTS does not impact bird, bat and lizard populations on other islands. These populations are necessary for the recovery of Guam's native ecosystem. Although there are currently BTS inspections of cargo and vessels from Guam, there is a potential for the system to be overwhelmed by the increase in tempo of activities. The MITT DEIS also needs to be mindful of other IAS that Guam could infect CNMI with that would be devastating to endangered wildlife and their habitats, i.e., little fire ant and coconut rhinoceros beetle.	The U.S. Navy recognizes the importance of biosecurity, ecological integrity, and resiliency of island ecosystems to the potential introduction of invasive species to the Mariana Islands associated with military training. The Navy has a number of policies in place to prevent, interdict, and control invasive species introductions in both terrestrial and marine environments. Specific policies for marine invasive species can be found at: OPNAVINST 5090.1D Chapter 35-3.19. (Ship and Ballast Water), 5090.1D Chapter 35-3.1 (Environmentally Sound Ships), and 5090.1D Chapter 12-3.10 (Invasive Species). For potentially invasive terrestrial species, the Navy has in place a number of policies and procedures to reduce or remove species from potential introduction pathways. These measures include coordination with USDA APHIS for inspection procedures for incoming cargo, equipment, and personnel from foreign locations. This information has been added to Section 3.10 (Terrestrial Species and Habitats) as part of an overall invasive species discussion that includes terrestrial, marine, and freshwater invasive species. In conclusion, the Navy maintains that introduction of invasive species associated with military training activities is low. It should be noted that the Navy or other military services does not have jurisdiction of other potential pathways for introduction (e.g., commercial activities, U.S. mail, non-DoD personnel).
Guam DoAg - 9	8. Consistent monitoring of behavior and distribution of Mariana fruit bat/island swiftlet/common moorhen/megapode (and other terrestrial species of regional concern) must be conducted prior to and after MITT related activities in order to evaluate the impact of activities, particularly on species of greatest conservation need. Appropriate measures must be incorporated to reduce impacts to terrestrial species, as well as measures to avoid impacting species that aggregate when feeding in open water ocean. Impacts to aggregations of individuals in the expanded areas of MITT activities may impact species on a population level.	Joint Region Marianas maintains a robust monitoring program for natural resources, including special status species such as the Mariana fruit bat, Mariana common moorhen, and Micronesian megapode. Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the Final EIS/OEIS has been updated to include the final conservation measures resulting from the Navy's Section 7 consultation with the USFWS Pacific Islands Fish and Wildlife Office and NMFS. These measures fulfill the Navy's obligations under Section 7(a)(2) of the ESA for the proposed training activities. Many of the projects included in the Joint Region Marianas Integrated Natural Resources Management Plan satisfy the Navy's obligations under Section 7(a)(1) of the ESA. In total, these measures and projects reduce to the maximum extent practical potential impacts on species while meeting the Navy's regulatory

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		requirements and ensuring no net loss of the military mission.
Guam DoAg - 10	9. The assessment of potential effects to marine animals and habitat from underwater demolition needs more clarity and analysis. The habitat mapping needs to be more detailed, the Cetacean species that utilize the area proposed for the MITT need to be identified, as well as the impacts such activity will have on these species. The analysis also needs to include the impacts to sea turtles. The presence of ESA-listed sperm whales is well documented within three to five miles offshore in the Agat area. Effects to this species and the mitigation for these actions are not addressed in the MITT DEIS. The increased boat activity greatly increases the potential for boat strike of sperm whales. Navy lookouts undergo extensive training in order to qualify as a watch stander. Have the use of these watch standers been successful? How is success measured?	The potential effects on marine mammals and their habitat from underwater detonations (no underwater demolition activities are proposed) is described in detail in Section 3.4.4.2 (Impacts from Explosives). Briefly, the Navy's acoustic effects model and post modeling analysis use the characteristics of the environment (e.g., water depth), the net explosive weight of explosives used during an activity, and the density estimate for marine mammals known to occur in the area of the activity to estimate how marine mammals may be affected by use of underwater explosives. The analysis predicts that up to 18 behavior exposures, 6 TTS level exposures, and 1 PTS exposure would occur annually. No series injury or mortalities are predicted (see Section 3.4.4.2.3). A similar process is used to estimate impacts on sea turtles (Section 3.5, Sea Turtles). No model is available for quantitatively analyzing impacts on other living marine resources (e.g., fish); however, a comprehensive qualitative analysis is conducted for these resources with multiple references to the latest peer-reviewed scientific research. Cetacean species known to occur in the MITT Study area are described in detail in Section 3.4.1 (Introduction) and 3.4.2 (Affected Environment) of the Marine Mammals section (Section 3.4). Potential impacts on marine mammals from the proposed activities are described in terms of stressors. The stressors resulting from the proposed activities include: acoustic, energy, physical disturbance and strike, entanglement, ingestion, and secondary stressors. Impacts from these stressors are described in detail in Section 3.4.4 (Analysis of Effects on Marine Mammals). The Navy's acoustic effects model predicts that the vast majority of effects will be temporary effects to behavior or hearing sensitivity. No mortality or serious injury is predicted or anticipated. A similar analysis is conducted for sea turtles in Section 3.5 (Sea Turtles). Potential effects of the proposed activities on sperm whales are addressed in the EIS/OEIS in Section 3.4 (Marine Mammals). Sperm whales are described as part of the affected environment in Section 3.4.2.12. Section 3.4.2.3 (Vocalization and Hearing of Marine Mammals) groups sperm whales as mid-frequency cetaceans consistent with similar

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		groupings made by the scientific community (e.g., Southall et al. 2007). Sperm whale density estimates based on recent survey data and, if no survey data are available, habitat suitability data are incorporated into the Navy's acoustic effects model, which estimates marine mammal exposure to sonar and explosives throughout the MITT Study Area. Most proposed activities occur greater than 3 nm from shore limiting impacts on nearshore habitats and species. The acoustic effects model, which uses a number of conservative assumptions, predicts 655 behavioral effects and 75 TTS level effects on sperm whales from sonar and other active acoustic sources. No impacts on sperm whales from explosives are predicted (see Section 3.4.4.1.3, Predicted Impacts from Sonar and Other Active Acoustic Sources, and Section 3.4.4.2.3, Predicted Impacts from Explosives). The Navy formally consulted with NMFS concerning the potential impacts of its proposed training and testing activities on all threatened and endangered species in the region, including sperm whales. The Navy updated Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the Final EIS/OEIS based on Section 7 consultation. The Navy trains Lookouts to observe for marine mammals and to avoid potential impacts on marine mammals from acoustic stressors and vessel strikes. Lookouts have been effective in spotting animals and enabling vessels to avoid marine mammals. Lookout effectiveness is demonstrated by the fact that there has never been a marine mammal strike by a Navy vessel in the MITT Study Area.
Guam DoAg - 11	10. DoAg is concerned about the impact of landing craft exercises on the dolphins that reside in Agat Bay. The DON contended unavoidable impacts. The Navy recognizes the common occurrence of spinner dolphins within Agat Bay and has developed mitigation measures in consultation with NMFS under provisions of the MMPA. Beachmasters are shore-based observers with binoculars whose sole purpose is to ensure safety of craft including avoidance of marine and terrestrial animals. Beachmasters were to work with environmental monitors and the natural resource managers. These measures have been utilized - how successful have they been and how has that success been measured?	Spinner dolphins have not been observed during landing activities conducted at Dadi Beach in Agat Bay. Beachmasters would be stationed during future landing activities in Agat Bay and are expected to be successful in spotting spinner dolphins should they be present in the Bay during an activity. Spinner dolphin groups are relatively easy to detect, because of their typically large group size and active surface presence. Details on mitigation measures protective of marine mammals, specifically Lookout measures, and standard operating procedures for vessel movements are described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring). Observing for marine mammals, including spinner dolphins in Agat Bay, prior to and during landing activities minimizes the potential for impacts on the dolphins.

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Guam DoAg - 12	11. The MITT DEIS must address impacts to the existing community of resource users and the need to mitigate economic impacts by avoiding near shore populations and their habitats. The training activities themselves present additional challenges that may alter the landscape far beyond the closure period. The potential loss of marine life, whether through injury, mortality or simply scaring them out of the area, presents significant economic issues for tour operators who rely on a healthy population of marine animals for their tours. The underwater detonations, for example, could lead to the relocation of Agat Bay's resident dolphin pod, disrupting the dolphin-watch boats and other tours. The Navy recognizes the common occurrence of spinner dolphins within Agat Bay and has developed mitigation measures in consultation with NMFS under provisions of the MMPA, however more effort needs to be made to minimize impacts through avoidance and relocation of activities to areas of less impact.	The majority of military activities occur far (greater than 3 nm) from shore and would not impact nearshore resources. Analyses presented in individual resource sections of the EIS/OEIS (e.g., Section 3.4, Marine Mammals, and Section 3.5, Sea Turtles) indicates that no mortalities are anticipated from the proposed activities. Specifically for marine mammals, the vast majority of predicted impacts from acoustic stressors (e.g., sonar and explosives) are temporary behavioral and hearing impacts. Long-term consequences are not anticipated (see Section 3.4.3, Environmental Consequences). As presented in Section 3.4.3.1.2.5 (Physiological Stress) of the EIS/OEIS, the Navy is aware of the literature and has accounted for any activities involving repeated disturbances to marine mammals. The Proposed Action, however, does not involve the frequency or type of activities (such as daily whale watching) that have been shown in some cases to cause long-term impacts on dolphins or other marine mammals. Section 3.4.4.2.3.1 (No Action Alternative, Alternative 1, and Alternative 2) details the expected effects from underwater detonations on spinner dolphins and other marine mammals. Given the research to date on marine mammals subjected to much more intense activity than is proposed by the Navy for Agat Bay (see Section 3.4.3.1.2.6, Behavioral Responses, and references cited in the EIS/OEIS including, for example, Bejder et al. 2006; Carrera et al. 2008; Hewitt 1985; Wursig et al. 1998; Lemon et al. 2006; Lusseau et al. 2006), it is not expected that spinner dolphins would "relocate" from Agat Bay. The military has been conducting similar activities in the area for years without any observed impact to marine mammal populations. Consistent with the analysis presented in Section 3.4 (Marine Mammals), significant impacts on tourism activities that rely on marine wildlife are not anticipated. Beachmasters are used during these activities as shore-based observers with binoculars whose sole purpose is to ensure safety of craft including avoidance of marine and terrestrial animals. Spinner dolphin groups are relatively easy to detect because of the size of the group and surface behaviors. As described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring), surveying for marine mammals, including resting spinner dolphins, is conducted prior to conducting the activity in an effort to avoid impacts on these

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		animals.
Guam DoAg - 13	12. It is probable that sea turtles would be affected by landing-craft training activities. The Navy agreed that landing craft training activities could potentially affect sea turtles within the MIRC. The Navy consulted with NMFS and USFWS Pacific Islands Field Office under provisions of Section 7 of the ESA to avoid, minimize and offset potential impacts associated with MIRC training on sea turtle nesting activity and activity in near shore and open ocean marine environments. How have these activities impacted sea turtles? What measures would be used to protect sea turtles in MITT. The use of LCACs and other equipment on sandy beaches can negatively impact sea turtle nesting and hatching success. Consultation with the local resource agency in addition to the Navy surveys can help avoid possible interactions.	Section 3.5 (Sea Turtles) of the Final EIS/OEIS has been updated to address sea turtle nesting on Tinian. Additionally, Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) has been updated with mitigation measures that reduce or avoid impacts on nesting sea turtles. Impacts on sea turtles are included in the Section 7 ESA consultation between the Navy and the USFWS. The Navy has updated the Final EIS/OEIS based on Section 7 consultation.
Guam DoAg - 14	13. The Final MITT DEIS must clarify impacts and identify necessary mitigation for fish mortality associated with soft bottom detonation operations in Apra Harbor. How have these activities in the MIRC impacted soft bottom habitat for species of ecological as well as fishery resource importance? Fish mortality associated with training activities within the MIRC are discussed in EIS, Section 3.9 (Fish and Essential Fish Habitat) but no mitigation is proposed to address this issue.	As described in Section 3.9 (Fish), disturbance, injury, or mortality to individual fish located in close proximity to an activity using explosives may occur. However, the duration of individual explosions is very limited, and training and testing activities involving explosives are infrequent and dispersed throughout many locations within the Study Area. Consequently, repeated exposure of individual fish to sounds from underwater explosions is not likely, and most effects are expected to be short-term and localized. Long-term consequences for populations would not be expected. The Final EIS has been updated to address the recent listing of the scalloped hammerhead shark under the ESA. It is possible that the scalloped hammerhead may occur in the vicinity of underwater detonation sites, including the Outer Apra Harbor site; however, the probability of a hammerhead being in the vicinity of an explosion is considered remote. There are currently no mitigation measures specific to the scalloped hammerhead shark. In the Biological Evaluation presented to the NMFS, the Navy determined that scalloped hammerhead sharks in the vicinity of an explosion may be adversely affected by the explosion. The Navy is formally consulting with the NMFS concerning the potential impacts of the military training and testing activities on the scalloped hammerhead shark. Any reasonable

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		and prudent measures and terms and conditions set forth in the applicable Biological Opinion as a result of Section 7 consultation will be incorporated into the Record of Decision. In response to consultation with NMFS on the EFHA and potential impacts to coral reefs, the Navy has revised underwater detonations at the Outer Apra Harbor Underwater Detonation Site from 20 lb. net explosive weight (NEW) to 10 lb.
Guam DoAg - 15	14. DoAg requests more effort made to either find alternatives that will cause fewer impacts, or to provide environmental and compensatory mitigation to offset impacts to the open ocean and near shore marine environments and the species that inhabit them. The Final MITT DEIS should include (similar to MIRC) a Range Monitoring Plan, reporting requirements, adaptive management, etc. Components of the monitoring and mitigation plans should be in cooperation with NMFS, USFWS and DoAg-DAWR. Monitoring and mitigation will be used both as: I) a planning tool to focus Navy monitoring priorities (pursuant to ESA/MMPA requirements) across Navy Range Complexes and Exercises; and 2) an adaptive management tool, through the consolidation and analysis of the Navy's monitoring and watch stander (lookout) data, as well as new information from other Navy programs (e.g., research and development), and newly published non-Navy information.	The Navy developed the alternatives considered in this EIS/OEIS after careful assessment by subject matter experts, including military units and commands that utilize the ranges, military range management professionals, and Navy environmental managers and scientists. A change in training and testing activities would fail to meet the Purpose and Need and would not allow the Navy to meet its obligations under Title 10. As a complement to the Navy's commitment to avoiding and reducing impacts associated with military training and testing activities through mitigation, the Navy will undertake monitoring efforts to track compliance with take authorizations, help evaluate the effectiveness of implemented mitigation measures, and gain a better understanding of the effects of the Proposed Action on marine resources. The Navy's overall monitoring approach will seek to leverage and build on existing research efforts whenever possible.
Guam DoAg - 16	Thank you for the opportunity and consideration of DoAg's comments on the Draft MITT EIS. We look forward to reviewing a more complete analysis of impacts in the final EIS that clearly identifies and addresses the potential impacts associated with the MITT activities and includes viable options for avoidance and mitigation. We look forward to the Navy's response to our comments pertaining to the Navy's MITT DEIS.	Thank you for participating in the NEPA process.

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Guam DoAg - 17	1; (MITT-DEIS-OEIS Volume 1); TOC-iii; Subject 3.0 Affected Environment and Environmental Consequences; There is no mention of the impacts on the Mariana Trench. What will be the impacts to the Mariana Trench?	No specific impacts within the Mariana Trench were identified in the EIS/OEIS. However, when activities do occur in this area, the Navy would follow the general mitigation protocols established in the final MMPA rule and LOA.
Guam DoAg - 18	3; (MITT-DEIS-OEIS Volume 1); ES-13; Acoustics; statement: Use of acoustics and underwater explosives may result in marine mammal mortality; The use of acoustics and explosives that may impact marine mammals is by definition "take"	The military is formally consulting with the NMFS concerning the potential impacts of the military training and testing activities on all marine mammals protected under the MMPA and all threatened and endangered marine mammals listed under the ESA known to occur in the MITT Study Area. The Navy has updated the Final EIS/OEIS based on Section 7 consultation.
Guam DoAg - 19	4; (MITT-DEIS-OEIS Volume 1); ES-13; Section 3.4 Marine Mammals; Activities may result in Entanglement, and other harassments-ingestion of expended material, secondary stressors, etc.; These actions define specifically "take" of marine mammals that may be in the area. There should be information related to the survivorship of marine mammals in these situations.	While entanglement and ingestion stressors have the potential to impact marine mammals, the analysis in the EIS/OEIS concludes that the probability of entanglement or ingestion of expended materials is negligible and would not result in Level A or Level B harassment of marine mammals. Refer to Section 3.4.4.5 (Entanglement Stressors) and 3.4.4.6 (Ingestion Stressors) for the analysis of impacts from these stressors. The military is not aware of any studies on survivorship of marine mammals that have encountered expended materials. This type of data would be very difficult to acquire.
Guam DoAg – 20	5; (MITT-DEIS-OEIS Volume 1); ES-14; Sea Turtles; use of sonar and other active acoustic devices may affect green, loggerhead, olive ridley, hawksbill, and leatherback sea turtles.; The actions described indicate there will be take. What are the mitigative actions?	The Navy formally consulted with USFWS and NMFS concerning the potential impacts of its military training and testing activities on all threatened and endangered species within the MITT Study Area. The Navy has updated the Final EIS/OEIS based on Section 7 consultation.
Guam DoAg - 21	6; (MITT-DEIS-OEIS Volume 1); ES-15; Marine Birds; Acoustics, physical disturbance, and strikes may impact resident seabirds; How was it determined that it will most likely not impact sea birds?	The impact conclusions for marine birds presented in the Executive Summary have been updated in the Final EIS/OEIS to be consistent with conclusions made in Section 3.6 (Marine Birds). As discussed in Section 3.6 (Marine Birds), the Navy's obligations under the MBTA for military readiness activities are to assess potential adverse impacts on species' populations. The Navy's analysis includes assumptions that some seabirds may be injured or killed during military training activities, but these impacts would not adversely impact species on a population level. This analysis has included a statistical analysis of 17-years of census data

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		collected at FDM. The data indicate no significant changes in population trends of the three booby species included in the analysis on FDM.
Guam DoAg - 22	7; (MITT-DEIS-OEIS Volume 1); ES-17; Marine invertebrates; No effects on corals, EFH, etc.; The effects of actvities such as, explosives, sonar, and other such activity may impact EFH. Needs further analysis.	As presented in the Final EIS/OEIS, each stressor discussion presents a discussion of impact on sedentary invertebrate beds and reefs as essential fish habitat. Additionally, an EFH analysis has been prepared for MITT, and where relevant, discussion on EFH has been added into the Marine Habitats, Fish, and Marine Invertebrates sections of the Final EIS/OEIS.
Guam DoAg - 23	9; (MITT-DEIS-OEIS Volume 1); ES-18; Fish; No effects on fish; Although there are no listed fish or critical habitat, impacts to fish will occur with the proposed use of explosives, weapons, etc.	The Executive Summary provides a summary of the document. Section 3.9 (Fish) of the EIS/OEIS provides an analysis in greater detail. Although potential impacts on certain fish species from the Proposed Action may include injury or mortality, impacts are not expected to decrease the overall fitness of any given population.
Guam DoAg - 24	10; (MITT-DEIS-OEIS Volume 1); ES-19; Terrestrial Species and Habitats; No effects on listed species. No training in areas identified as critical habitat; Mariana crows and Micronesian kingfishers are not found on FDM. The megapode and moorhen may be affected by activities. The no impact to the megapode needs to be explained further.	The Executive Summary has been corrected in the Final EIS/OEIS and is consistent with the Section 3.10 (Terrestrial Species and Habitats). Activities on FDM may affect, and likely adversely affect, the Micronesian megapode. In other areas where the military trains and collocated with megapode habitat, military training activities described in this EIS/OEIS may affect, but not likely adversely affect, Micronesian megapodes.
Guam DoAg - 25	13; (MITT-DEIS-OEIS Volume 1); 2-23; Sonar and other acoustic sources; What are the impacts of such devices on marine mammals and other marine animals? Animals that rely on accoustic communication may be impacted by these devices.	Section 3.4.4.1 (Impacts from Sonar and Other Active Acoustic Sources) and Section 3.4.4.2 (Impacts from Explosives) discuss potential impacts on marine mammals from acoustic stressors. The military developed and used a model to quantitatively predict impacts on marine mammals from acoustic sources. No mortalities are predicted. The only injuries predicted are for PTS, and the majority of impacts are either TTS or behavioral response, both of which are temporary. Potential masking of echolocation and other marine mammal vocalizations is discussed in Section 3.4.3.1.2.4 (Auditory Masking) and 3.4.3.1.2.6 (Behavioral Responses). Use of Navy sonar is not expected to have long-term effects on marine mammal vocalizations or interfere with echolocation.

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Guam DoAg - 26	14; (MITT-DEIS-OEIS Volume 1); 2-23 2.3.1; Sonar and other accoustic sources; The impact of passive sonar on marine mammals is indicated as not significant. What evidence is there to support the statement?	Passive sonar only involves listening and has no acoustic output or impact on the environment.
Guam DoAg - 27	15; (MITT-DEIS-OEIS Volume 1); 2-23; 2.3.1 ; 2.3 Descriptions of sonar, ordnance, munitions…; The paragraph defines SONAR but does not describe the range. When SONAR is used what is its range/radius of impacts? How far away does a whale/dolphin need to be to avoid being affected?	Tables 3.4-10, 3.4-11, 3.4-12, and 3.4-13 in Section 3.4.4 describe the range to effects (e.g., range to PTS) on marine mammals from sonar and explosives.
Guam DoAg - 28	16; (MITT-DEIS-OEIS Volume 1); 2-23; 2.3.2 Extended echo ranging sonobuoys; This device explodes to provide sonar and active source of sonar information - what is the impact to marine mammals?	Potential impacts on marine mammals from the use of sonobuoys, including extended echo ranging sonobuoys, were analyzed using the Navy's acoustic effects model for predicting exposures on marine mammals from acoustic sources. See Section 3.4.4.1 Impacts from Sonar and Other Active Acoustic Sources for details. As described in Section 3.0.4.1.6 (Classification of Acoustic and Explosive Sources), the military grouped sound sources with similar characteristics (e.g., frequency range, source level) into bins, such that the number of exposures on marine mammals from specific sources is not available. The vast majority of exposures from all sonar and explosive sources were at the TTS and behavioral level. Mitigation measures specific to extended echo ranging sonobuoys are described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring), and Section 5.3.2.1.2.1 (Improved Extended Echo Ranging Sonobuoys).
Guam DoAg – 29	17; (MITT-DEIS-OEIS Volume 1); 2-37; 2.3.6; Military expended materials; There is a list of 8 types of military expended debris - sonobuoys, toropedo launch accessories, decelerators/parachutes, projectiles and bombs, missiles and rockets, countermeasures, targets and ballast/anchors. 18; (MITT-DEIS-OEIS Volume 1); 2-39; 2.3.6; Military expended materials; There are listed 80 proposed training activities. Debris produced by AAW and STW would be of concern.	The Navy shares your concern regarding marine debris. While the Navy has not conducted specific studies on the time required for expended materials to decompose in the ocean, the information regarding potential effects of these materials to marine resources is included in the EIS/OEIS. Impacts from military expended materials could be short-term and local. Most other materials from military expended materials would not be harmful to the marine environment. Chemical, physical, or biological changes in sediment or water quality would not be detectable. Please refer to Chapter 3.1, Sediments and Water Quality for a detailed analysis.

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Guam DoAg - 30	19; (MITT-DEIS-OEIS Volume 1); 2-42; 2.4.1; Table 2.4-1; Major Training activities - Assurance that no invasive species are being transported with the movement of personnel, vessels and equipment needs to be addressed. Up to 78 training days are indicated in the table.	The U.S. Navy recognizes the importance of biosecurity, ecological integrity, and resiliency of island ecosystems to the potential introduction of invasive species to the Mariana Islands associated with military training. The Navy has a number of policies in place to prevent, interdict, and control invasive species introductions in both terrestrial and marine environments. Specific policies for marine invasive species can be found at OPNAVINST 5090.1D Chapter 35-3.19. (Ship and Ballast Water), 5090.1D Chapter 35-3.1 (Environmentally Sound Ships), and 5090.1D Chapter 12-3.10 (Invasive Species). This information has been added to Section 3.10 (Terrestrial Species and Habitats) as part of an overall invasive species discussion that includes terrestrial, marine, and freshwater invasive species. In conclusion, the Navy maintains that introduction of invasive species associated with military training activities is low. It should be noted that the Navy or other military services does not have jurisdiction of other potential pathways for introduction (e.g., commercial activities, U.S. mail, non-DoD personnel).
Guam DoAg - 31	20; (MITT-DEIS-OEIS Volume 1); 2-62; 2.7.3; The replacement of old aircraft with new ones is planned. What information is available that noise and discharge from new aircraft will not impact listed species?	Noise generated by new aircraft is expected to be similar to noise from existing aircraft engines. Potential impacts from aircraft noise are specifically addressed in the various resource sections in Chapter 3 of the EIS/OEIS. The Navy formally consulted with USFWS and NMFS concerning the potential impacts of its military training and testing activities on all threatened and endangered species in the region. The Navy has updated the Final EIS/OEIS based on Section 7 consultation.
Guam DoAg - 32	21; (MITT-DEIS-OEIS Volume 1); 2-69 thru 2-91; 2.8.2; Table showing the No action, Alternative 1-preferred, and Alternative 2; There are activities within the No Action Alternative that already have been approved. The Preferred and Alternative 2 propose large increases in activities for the various exercises and weapons and missile explosives.	Increases in training and testing activities and associated impacts for Alternatives 1 and 2 are presented in Chapter 3 of the EIS/OEIS. Please refer to Table ES.6-1 Summary of Environmental Impacts for the No Action Alternative, Alternative 1, and Alternative 2. This table includes a summary of impacts for all resources analyzed in the EIS/OEIS.
Guam DoAg - 33	22; (MITT-DEIS-OEIS Volume 1); 3.0-1; Affected Environment and Environmental Consequences; The impact due to sound	Potential impacts from sound are specifically addressed in sections: 3.4 Marine Mammals, 3.4.3.1 Acoustic Stressors; 3.5 Sea Turtles, 3.5.3.1 Acoustic Stressors; 3.6 Marine Birds, 3.6.3.1 Acoustic Stressors; 3.7

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	on biological resources would be significant.	Marine Vegetation, 3.7.3.1 Acoustic Stressors; 3.8 Marine Invertebrates, 3.8.3.1 Acoustic Stressors; 3.9 Fish,3.9.3.1 Acoustic Stressors; and 3.10 Terrestrial Species, 3.10.3.1 Acoustic Stressors. of the EIS/OEIS: The Navy formally consulted with USFWS and NMFS concerning the potential impacts of its military training and testing activities on all threatened and endangered species in the region. The Navy has updated the Final EIS/OEIS based on Section 7 consultation. Impacts associated with sound vary based on the distance an animal is to the sound source, the type of sound, the hearing range of the animal, and the intensity of the sound.
Guam DoAg - 34	23; (MITT-DEIS-OEIS Volume 1); 3.3-20; 3.3.3.1.1.2; Acoustic stressors - Training activities- underwater detonations ; Training activities under Alternative I would disturb approx 18,3000 sq. ft. (1,700 sq. m .) per yer of substrate in the study area. ; Mitigation will be needed to address the impacts to fish in the study area. Fish are important to the coral reef ecosystem and highly valuable to residents of Guam.	There are no mitigation measures for fish as there are no ESA-listed species and no population level impacts would occur.
Guam DoAg - 35	24; (MITT-DEIS-OEIS Volume 1); 3.3-20 and 21; Acoustic stressors - Testing Activities and Training Activities ; Training activities=--50 explosions/yr. Testing Activities= 24 underwater detonations . All localized in the Study Area. ; Not clear if the 24 detonations are part of the 50 explosions per year, or if they are additional. Needs clarification.	The 24 detonations shown in Table 3.3-3 under Alternative 1 are specifically for testing activities. The 50 detonations under Alternative 1 (20 detonations for Mine Neutralization and 30 detonations for Underwater Demolition Qualification/Certification) are specifically for training activities. For both training and testing activities, a total of 74 detonations under Alternative 1 would be conducted.
Guam DoAg - 36	25; (MITT-DEIS-OEIS Volume 1); 3.3-30-31; 3.3.3.2.2; Impacts from Military Expended Materials; In heavily used coastal areas around FDM, annual monitoring since 1999 has determined that impacts to the marine habitats from military expended materials have been insignificant. What exactly was being monitored since 1999 in FDM? Where are the reports of the monitoring? The results of the monitoring needs to be shared with local/regional resource agencies. As activities increase there will be greater impacts to marine habitat,	The Final EIS/OEIS has been updated with additional information from dive surveys conducted off the coast of FDM. The report information has been added to Section 3.1 (Sediments and Water Quality), with specific new text in Section 3.1.3.1.5.3 (Farallon de Medinilla Specific Impacts) in the Final EIS/OEIS. It should be noted that local resource agency personnel have participated in these surveys.

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	especially if debris from the action is not recovered .	
Guam DoAg - 37	26; (MITT-DEIS-OEIS Volume 1); 3.3-23; 3.3.3.2.1- Impacts from vessels and In-Water Devices; Vessels, in-water devices ...could accidently impact any habitat types ... The shore ...typically high dynamic because of its constant exposure to wave action and cycles of erosion and sedimentation .... ; MITT activities near shore and in deep waters will generate stress on the habitat typeswhich will be in addition to the natural wave action and weather. Habitat Recovery will be prolonged and may result in declining fish populations.	The impacts on habitat from vessels and in-water devices are discussed in Section 3.3.3.2.1 (Impacts from Vessels and In-Water Devices), which states, “The impact of vessels on the substrate in the surf zone would be minor because of the dispersed nature of the amphibious landings and the dynamic nature of sediments in areas of these high-energy surf zones.” Additionally, hard bottom habitats, which would take longer to recover, are avoided for these activities. Prior to landing activities with larger vessels, pre-landing surveillance is conducted to avoid obstacles. It is unlikely that any impact would be long-term or impact fish populations.
Guam DoAg - 38	27; (MITT-DEIS-OEIS Volume 1); 3.6-15; Table 3.6-5; 3.6.2.6.1 Guam - Known Rookery/Nesting Locations on Department of Defense Owned or Leased Lands within the MITT Study Area; Table identifies Pati Point to Tagua Point in AAFB as Rookery/Nesting Locations for Black noddies and brown noddies. ; Andersen Housing area is a nesting location for noddies and white terns. Needs to be added.	The Andersen housing area has been identified in the text and on the map. It should be noted that the additional information added to the Final EIS/OEIS does not change the impact assessment.
Guam DoAg - 39	28; (MITT-DEIS-OEIS Volume 1); 3.6 Migratory Birds; No discussion on foraging grounds for seabirds within the Study Area near Guam.	Please see Section 3.6.2.6.1 (Guam) for a discussion of foraging habitats for migratory shorebirds and seabirds. Section 3.6.3.1.2.3 (No Action Alternative) states that: "The underwater seafloor detonations sites within Apra Harbor, Piti Point Floating Mine Neutralization Site, Agat Bay Floating Mine Neutralization Site, and the Small Arms Firing Area are within the nearshore environment of Guam that is likely a primary foraging habitat for seabird species that roost and breed on the island."
Guam DoAg – 40	29; (MITT-DEIS-OEIS Volume 1); 3.6-53 and 54; 3.6.3.1.2.4 Alternative 1 - Acoustic Stressors; Impacts from Alternative I Training and Testing Actions; Mitigative actions will need to be defined to address impacts on great frigate bird populations within the study area.	Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) in the Final EIS/OEIS and Section 3.6 (Marine Birds) and Section 3.10 (Terrestrial Species and Habitats) have been updated with additional information from COMNAVMARIANASINST 3500.4A, which includes restrictions for FDM to minimize impacts on marine birds.
Guam DoAg - 41	30; (MITT-DEIS-OEIS Volume 1); 3.6-62 and 64; 3.6.3.1.3.5	The Navy agrees that silhouettes/shadows of overflying aircraft may

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	Alternative 1 - Aircraft and vessel noise; Impacts from Alternative 1 training and testing actions; Impact of fixed wing aircraft shadows above nesting birds should be examined	induce behavioral modifications of nesting birds. For instance, in Section 3.6.3.1.3.1 (Fixed-wing Aircraft), the EIS/OEIS stated: "While the experiment provided good control on simulated aircraft noise levels, preliminary observations of tern colonies responses to balloon overflights suggest that visual stimulus is likely to be an important component of disturbance from overflights (Brown 1990)." While important, the noise generated from passing overcraft likely induces responses before the visual stimulus. Therefore, the focus of the analysis was on acoustic disturbance of rookeries and roosting birds.
Guam DoAg - 42	31; (MITT-DEIS-OEIS Volume 1); 3.6-95 and 96; Marine birds - table 3.6-7 Summary of ESA effects determinations for Seabirds for the Preferred Alternative; A summary table on effects determination for all migratory birds present within the MITT study area for the preferred alternative should be provided. ESA protected species, as identified in Table 3.6-7, are not likely to occur within the MITT study Area	This table is intended to show only ESA-listed species and would be inappropriate to include non-ESA-listed species. Migratory Bird Treaty Act (MBTA) determinations, in accordance with 50 C.F.R. Part 21.15, are provided in the following section (Section 3.6.4.3, Migratory Bird Treaty Act Determinations).
Guam DoAg - 43	32; (MITT-DEIS-OEIS Volume 1); 3.7-10; 2nd; 3.7.3.1.1.2 Alternative 1 Marine Vegetation; Underwater and surface explosions… not expected to pose a risk to seagrass because: (1) impact area of underwater explosions is very small relative to seagrass distribution; Clarification for 'small' and 'distribution' is needed. Seagrass is important habitat for sea turtles and impacts to the marine habitat/vegetation are important.	The locations of bottom-laid explosions for the Piti Floating Mine Neutralization Site, Outer Apra Harbor Underwater Detonation Site, and Agat Bay Mine Neutralization Site are shown in Figure 2.1-5 of the Final EIS/OEIS. These activities would occur in areas that have been previously disturbed and are unlikely to support marine vegetation. The underwater detonation area in Apra Harbor is located in a sandy habitat where there are no seagrass beds or other marine vegetation located (Figure 3.7-1). The offshore underwater mine neutralization sites are located in areas with water depths that are unlikely for marine vegetation to occur in (Figure 3.7-2).
Guam DoAg - 44	33; (MITT-DEIS-OEIS Volume 1); General comment; Under preferred Alternative for Marine Habitat and vegetation, it is stated that acoustic stressors impact them less than 1 percent of designated areas within the MITT study area. The vast majority of the study area includes deep open waters with much less being near shore habitats. One percent is relatively high when impacts on seagrass or the shore are considered.	The acoustic stressors discussed in the Final EIS/OEIS that have the potential to impact marine habitats and vegetation include underwater explosions on or near the seafloor. These explosions will occur in the designated MIRC mine neutralization sites or in open ocean areas, both of which are not colonized by any marine vegetation.

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Guam DoAg - 45	34; (MITT-DEIS-OEIS Volume 1); General comment; MITT EFHA report states preferred alternative will have minimal and short term impacts on Marine Vegetation within the Study Area. There is no reference to indicate how this was determined.	The Final EIS/OEIS includes an updated analysis from the EFHA which is available to the public on the MITT EIS/OEIS website (mitt-eis.com).
Guam DoAg - 46	36; (MITT-DEIS-OEIS Volume 2); 3.8-55; 3.8.3.1.2.2 Alternative 1 Marine Inverts; No explosions would occur in areas known to support coral species proposed for listing; Adjacent areas that may have coral species proposed for listing should be avoided to allow for increased distribution of listed corals.	As indicated in Section 3.8 (Marine Invertebrates) of the Final EIS/OEIS, if an area is thought to contain ESA-listed coral species, activities involving explosives will not occur in that area. Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) has been updated to include conservation measures developed during the Section 7 ESA consultation between the Navy and the NMFS.
Guam DoAg - 47	37; (MITT-DEIS-OEIS Volume 2); 3.10-53; 3.10.3.1.1.2 Alternative 1 Acoustic stressors- terrestrial Species and Habitats; …the most important stressors for wildlife communities… on FDM are percussive force…2 habitat alteration; Fruitbats and megapodes in FDM will be impacted; mitigation is needed to address both species of concern	Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) has been updated to include conservation measures developed during the Section 7 ESA consultation between the Navy and the USFWS. Specifically for Micronesian megapodes and fruit bats on FDM, the Navy will continue to implement targeting and access restrictions to minimize to the maximum extent practical potential impacts on these species. These measures include: (1) no targeting of the northern Special Use Area and no targeting of the narrow land bridge, (2) only targeting Impact Areas 1, 2, and 3 during air-to-ground bombing exercises and air-to-ground missile and gunnery, and (3) restricting access to the island to people authorized by MIRC Operations.
Guam DoAg - 48	38; (MITT-DEIS-OEIS Volume 2); 3.10-55; 3. 10.3. 1.2 Impacts from Aircraft Noise - Terrestrial Species and Habitats; AAFB completed an Aircraft noise and wildlife response study ...to monitor the effects of noise events associated with aircraft ops to fruit bat and crow; Study was focused on a small sample sizes (<30 bats at colony, one crow in MSA). The study should not be used as reference to impacts for bats within the MITT Study Area . Guam's population is small and should be treated as a population worth saving.	The Navy has compiled the available sources for assessing impacts associated with noise impacts on Mariana fruit bats. The study was conducted when crows were still extant on Guam. The available studies represent the best available science. The Navy agrees that silhouettes/shadows of overflying aircraft may induce behavioral modifications of nesting birds. For instance, in Section 3.6.3.1.3.1 (Fixed-Wing Aircraft), the EIS/OEIS stated: "While the experiment provided good control on simulated aircraft noise levels, preliminary observations of tern colonies responses to balloon overflights suggest that visual stimulus is likely to be an important component of disturbance from overflights (Brown 1990)." While important, the noise generated from passing overcraft likely induces responses before the visual stimulus.

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		Therefore, the focus of the analysis was on acoustic disturbance of rookeries and roosting birds.
Guam DoAg - 49	39; (MITT-DEIS-OEIS Volume 2); 3.10-55; 3. 10.3. 1.2 Impacts from Aircraft Noise - Terrestrial Species and Habitats; AAFB completed an aircraft noise and wildlife response study ..to monitor the effects of noise events associated with aircraft ops to fruit bat and crow.; The shadows of aircraft passing over roosting or nesting areas will impact bats and nesting birds.	Please see response to comment Guam DoAg-48.
Guam DoAg - 50	40; (MITT-DEIS-OEIS Volume 2); 3.10-57; 3. 10.3. 1.2.2 Alternative I and Alternative 2 - Terrestrial Species and Habitats; Combat search and rescue training on Rota under Alt. I and Alt. 2 will not change relative to the No Action Alt .... Aircraft overflights assoc. with training activities may affect, but not adversly affect, fruit bats and crows on Rota.; Aircraft overflights will adversely affect nesting crows and colonial bats . Increased nest abandonment, flushing and abandonment of colony are likely impacts, If pups are present, flushing may cause mortality to unprotected young.	The analysis for crows and bats on Rota was updated in the Final EIS/OEIS. Clarifications have been added as to where and what types of training may occur on Rota. Further, military aircraft when not performing operations (e.g., requests for search and rescue from the U.S. Coast Guard or local authorities) or during landings and takeoffs from the Rota International Airport, will maintain a 1,000-foot exclusion bubble from the coastline and above ground level on the entire island of Rota. Further, during the Section 7 ESA consultation process, the Navy conferred with the USFWS to determine the locations of bat colonies on Rota. While it would not be prudent to show the locations of bat colonies in a public document, the USFWS Biological Opinion concurs that training activities are not proximate to fruit bat locations. The USFWS will update JRM when colony locations change, as these locations can be dynamic.
Guam DoAg - 51	41; (MITT-DEIS-OEIS Volume 2); 3.10-60; Table 3. 10-6 - Terrestrial Species and Habitats ; Within the Terrestrial Resource Potentially Impacted column, DEIS should include Guam's Species of Greatest Conservation Need within the MITT Study Area. The white-throated ground dove may occur in AAFB and Fena proper and should be included in the table .	Table 3.10-6 has been updated with a list of Guam's Species of Greatest Conservation Need.
Guam DoAg - 52	42; (MITT-DEIS-OEIS Volume 2); 3.10-9; Table 3.10-3 - Terrestrial Species and Habitats ; Include Guam in the table for the White throated ground dove. The white throated ground	Table 3.10-3 has been updated with a list of Guam's Species of Greatest Conservation Need.

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	dove is known to occur on Guam (AAFB, NavMag) .	
Guam DoAg - 53	43; (MITT-DEIS-OEIS Volume 2); 3.10-72; 3.10.3.3. I Impacts from Invasive Species Introductions - Terrestrial Species and Habitat; After identifying pathways associated with a particular activity, risks are reduced by implementing policies and procedures to reduce to occur within a particular introduction pathway.; Previous NEPA and Section 7 documents indicate that a Micronesia Biosecurity Plan would be developed to address the increase in military activities within the region. DoD must assure Federal and Local resource agencies of 100% inspection rates to prevent the spread of IAS through military actions.	The U.S. Navy recognizes the importance of biosecurity, ecological integrity, and resiliency of island ecosystems to the potential introduction of invasive species to the Mariana Islands associated with military training. The Navy has a number of policies in place to prevent, interdict, and control invasive species introductions in both terrestrial and marine environments. Specific policies for marine invasive species can be found at: OPNAVINST 5090.1D Chapter 35-3.19. (Ship and Ballast Water), 5090.1D Chapter 35-3.1 (Environmentally Sound Ships), and 5090.1D Chapter 12-3.10 (Invasive Species). For potentially invasive terrestrial species, the Navy has in place a number of policies and procedures to reduce or remove species from potential introduction pathways. These measures include coordination with USDA APHIS for inspection procedures for incoming cargo, equipment, and personnel from foreign locations. This information has been added to Section 3.10 (Terrestrial Species and Habitats) as part of an overall invasive species discussion that includes terrestrial, marine, and freshwater invasive species. In conclusion, the Navy maintains that introduction of invasive species associated with military training activities is low. It should be noted that the Navy or other military services does not have jurisdiction of other potential pathways for introduction (e.g., commercial activities, U.S. mail, non-DoD personnel).
Guam DoAg - 54	44; (MITT-DEIS-OEIS Volume 2); 3.10-75; 3. 10.4.1 Combined Impacts of all stressors - Terrestrial Species and Habitats ; Although noise may have a greater impact on species within the SA, visual stressors should also be addressed. Nesting birds and fruit bats in a colony may be disturbed by near night aircrafts, especially in large-scale exercises or activities. Stress in nesting crows was observed when the shadows of F-16 jets passed over. When the Pati colony had over 25 bats, almost all reacted (moved to lower canopy) to a HC5 hovering above the roosting trees.	The Navy agrees that silhouettes/shadows of overflying aircraft may induce behavioral modifications of nesting birds. For instance, in Section 3.6.3.1.3.1 (Fixed-wing Aircraft), the EIS/OEIS stated: "While the experiment provided good control on simulated aircraft noise levels, preliminary observations of tern colonies responses to balloon overflights suggest that visual stimulus is likely to be an important component of disturbance from overflights (Brown 1990)." While important, the noise generated from passing overcraft likely induces responses before the visual stimulus. Therefore, the focus of the analysis was on acoustic disturbance of rookeries and roosting birds.
Guam DoAg - 55	45; (MITT-DEIS-OEIS Volume 2); 3.10-76 and 77; 3.10.4.2.2 Summary of Endangered Species Act Effects Determination -	The Navy's Section 7 ESA consultation and the USFWS Biological Opinion take into account other federal actions. In the Final EIS/OEIS,

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	Terrestrial Species and Habitats; USFWS PIFWO issued BO for proposed training activities within the MIRC. ; The BOs issued for the MIRC, ISR STRIKE, NWF BEDDOWN, KILOWHARF, Marine Relocation, etc. are specific to each proposed project. Additional activities within the MITT should be concerned with the cumulative impact to the natural resources within Guam and CNMI.	consideration of other federal actions is included in Chapter 4 (Cumulative Impacts).
Guam DoAg - 56	46; (MITT-DEIS-OEIS Volume 2); 3.12-20; Table 3. 12-6: Galvez Bank and Santa Rosa Reef - Socioeconomic Resources ; Location of W-51 7 Missile Training Hazard Area should be strategically placed further away from the Galvez Banks, Santa Rosa Reef and White Tuna Banks. The MITT Study Area is large enough to cater to the adjustment	The military allows access to the northern portion of W-517 during activities that occur far from that area in the southern portion of W-517 so that fishers can transit to and fish on White Tuna Banks and other nearby popular fishing sites. The military recognizes the importance of these fishing sites and will continue to work with local fishers to minimize restrictions on access to these sites. Previously, any activities occurring in W-517 would have required closure of the entire warning area regardless of where the activity took place within W-517.
Guam DoAg - 57	47; (MITT-DEIS-OEIS Volume 2); 3.13-8; 3. 13.2.7 High Explosive Ordnance Detonation Safety - Public Health and Safety ; ...the Navy uses the following general and underwater detonation procedures:. ... ; There are no references referring to the retrieval of detonation debris or the recovery of ordnance that failed to explode. This is a public safety hazard.	The Navy complies with all applicable laws and regulations for military expended munitions and range clearance for the training and testing activities proposed within the MITT EIS/OEIS Study Area. For the UNDET (Underwater Detonation) and Mine Clearance events conducted at the locations designated in Chapter 2 and as described in Appendix A, fuses and explosives are completely consumed in the detonation, and no explosive material is left behind.
Guam DoAg - 58	48; (MITT-DEIS-OEIS Volume 2); 3.13-4; 3. 13.2.2 Safety and Inspection Procedures - Public Health and Safety; Military personnel are responsible for ensuring that impact areas and targets are clear before commencing hazardous activities. ; What measures will ensure that the general public (fishers) are notified prior to commencing any exercises in water?	Section 3.12 (Socioeconomics) of the Final EIS/OEIS discusses fishing within the MITT EIS/OEIS, additional information has been inserted which describes the various means of communicating restrictions, as well as additional specifics regarding the three categories of Notices to Mariners: the Local Notice to Mariners (LNMs), the Notice to Mariners (NTMs), and the Marine Broadcast Notice to Mariners (BNMs). In addition to issuing NOTAMs , LNMs, NTMs, and BNMs to announce scheduled training and testing events, upcoming events are communicated to stakeholders (e.g., local mayors, resource agencies, and fishers) using a telephone tree and e-mail distribution developed by Joint Region Marianas with stakeholder input. Notices are also sent to

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		the NOAA, local cable channels, and emergency management offices. The military has also requested that the U.S. Coast Guard issue Notices to Mariners to announce when plans to use an area change (e.g., W-517), and access to the area will no longer be restricted (as previously published) and will now be accessible. Actions like notifying mariners when plans change are intended to reduce potential impacts on accessibility and improve communication between the military and local communities. The Navy also plans to announce time periods when FDM will not be in use for several consecutive days, allowing mariners to plan activities (e.g., fishing) in waters between 3 and 12 nm surrounding FDM.
Guam DoAg - 59	49; (MITT-DEIS-OEIS Volume 2); 4-18; 4.4.4 Marine Habitats - cummulative impacts ; The area of hard bottom potentially impacted represents a negligible percentage (less than 1 percent as analyzed in Section 3.3, Marine Habitats) of the total hard bottom habitat in the Study Area. ; The percentage refers to the entire Study Area. The percentage impacted should be specific to total area of hard bottom substrates present within the site of activity. The impact to hard bottom substrates will be greater then the one percent referenced in the DEIS.	The EIS/OEIS states in Section 3.3.4 (Summary of Potential Impacts [Combined Impacts of All Stressors] on Marine Habitats), that the total impact footprint from training and testing activities ranges from 1,517,636 square feet (0.04 square nautical mile) under the No Action Alternative to 1,875,313 square feet (0.05 square nautical mile) (see Table 3.3-8 for details). The impact area is significantly less than 1 percent of the total Study Area. The majority of military expended material would be used in the open ocean, where substrates would primarily be clays and silts with few benthic invertebrates. Military expended material in the coastal portions of the Study Area would be limited to small-caliber projectiles, flares, and target fragments. Bottom laid detonations would mainly occur over soft bottoms which will recover quickly.
Guam DoAg - 60	50; (MITT-DEIS-OEIS Volume 2); 3.3-17; Figure 3.3-6: Fish Aggregating Devices Near Guam - Marine Habitats; Piti Floating Mine Neutralization on Site is within a Marine Preserve Area. The site should be moved to another area that is not a preserve.	The Piti Floating Mine Neutralization Site was previously approved in the MIRC EIS/OEIS and is not located within a Marine Preservation Area.
Guam DoAg - 61	51; (MITT-DEIS-OEIS Volume 2); 3.3-17; Figure 3.3-6: Fish Aggregating Devices Near Guam - Marine Habitats; Outlet Apra Harbor Underwater Detonation site is within the area where nesting sea turtles occur. Exercises should not occur	The Final EIS/OEIS has been updated to reflect the roles of Lookouts prior to underwater detonations. Lookouts note presence or absence of marine mammals or sea turtles, and exercises do not proceed if those

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	when turtles are present or during nesting activities. Measures to inspect for presence of sea turtles within the site prior to commencing exercise are needed	species are within a defined range from each activity.
Guam DoAg - 62	52; (MITT-DEIS-OEIS Volume 2); 4-13; Sediments and water quality - Cumulative Impacts; The long term impacts would arise from unexploded ordance...would be negligible because :. ..; DoD should be held accountable for cleaning debris within the Study Area. No remnants or debris should be left in the environment.	The Navy complies with all applicable laws and regulations for military expended munitions for the training and testing activities proposed within the MITT EIS/OEIS Study Area. The analysis presented in the EIS/OEIS considered military expended materials in the environment. Impacts from military expended materials could be short-term and local. Most other materials from military expended materials would not be harmful to the marine environment. Chemical, physical, or biological changes in sediment or water quality would not be detectable. Please refer to Chapter 3.1, Sediments and Water Quality for a detailed analysis.
Guam DoAg - 63	54; (MITT-DEIS-OEIS Volume 2); 4-18; Marine Habitats - cumulative impacts; The area of hard bottom potentially impacted represents a negligible percentage of the total hard bottom habitat in the Study Area.; Analysis needs to be more specific and assess impacts to marine habitat (hard bottom habitat) specifically where activities occur and not generally over the entire Study Area. Damages to hard bottom habitat will require a long-term recovery which is not condusive to maintaining healthy local populations.	The EIS/OEIS states in Section 3.3.4 (Summary of Potential Impacts [Combined Impacts of All Stressors] on Marine Habitats), that the total impact footprint from training and testing activities ranges from 1,517,636 square feet (0.04 square nautical mile) under the No Action Alternative to 1,875,313 square feet (0.05 square nautical mile) see Table 3.3-8 for details. The impact area is significantly less than 1 percent of the total Study Area. The majority of military expended material would be used in the open ocean, where substrates would primarily be clays and silts. Military expended material in the coastal portions of the Study Area would be limited to small-caliber projectiles, flares, and target fragments, which are unlikely to have any significant impact on hard bottoms. Additionally, bottom laid detonations would mainly occur over soft bottom habitat.
Guam DoAg - 64	55; (MITT-DEIS-OEIS Volume 2); 4-19; Marine Mammals - cumulative impacts; Mortality or injury could be caused by underwater explosions or vessel strikes ...sonar use. ; EIS proposes for a 'watchman' crew member on ships to determine if study area is cleared from marine mammals before activities commence. DoD will need to ensure that the study area is cleared of nonparticipants as the EIS mentions. DoD should be responsible to recover and seek treatment for	The Navy will post Lookouts to survey the mitigation zone for the presence of marine mammals prior to and during a training or testing activity. As part of the military's standard operating procedures, Lookouts survey the area for non-participants prior to and during a training or testing activity to ensure the safety of the public and military personnel. If non-participants are present, the activity will not commence or will be halted until the range is clear (see Section 3.13, Public Health and Safety). The recovery and treatment of injured marine

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	any injured marine mammals within the Study Area.	mammals is under the jurisdiction of the National Marine Fisheries Service (NMFS) and the focus of their stranding programs. As noted in Section 5.5.2.2 (Stranding Response Plan) the Navy will coordinate with NMFS regarding the content of a stranding response plan as part of the MMPA permitting process for the EIS/OEIS.
Guam DoAg - 65	56; (MITT-DEIS-OEIS Volume 2); 4-22; Sea Turtles - cumulative impacts; Impacts of Alt. 1 and 2 that might contribute to cumulative impacts on sea turtles include mortality, injury, and short-term disturbance or behavioral modification ... caused by explosions, vessel strikes or injury caused by sonar use. ; Watchman' crew should also be on alert for sea turtles the heavily use the areas within the Study Area. Additional stress to the species should be avioded for the conservation of the species. DoD should be responsible to recover and seek treatment for any injured sea turtles within the Study Area.	While the EIS/OEIS modeling does indicate take of sea turtles species, the modeling was performed without consideration of mitigation measures. Mitigation measures to reduce take are proposed by the Navy and have been discussed with USFWS and NMFS through formal consultation. The Final EIS/OEIS has been updated to reflect any mitigation and monitoring requirements resulting from this consultation in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) in the EIS/OEIS. Lookouts observe for any objects on the ocean surface as a potential hazard, which would include sea turtles. Additionally, as listed in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the Final EIS/OEIS, if any injury or death (marine mammal or sea turtle) is observed during training or testing activities, the Navy will immediately halt the activity and report the incident, including dead or injured animals, to NMFS or the United States Fish and Wildlife Service, as appropriate.
Guam DoAg - 66	57; (MITT-DEIS-OEIS Volume 2); 4-26; Marine Birds - Cumulative Impacts; Most of the proposed activities would be widely dispersed in offshore areas ...potential for interactions ...is low. ; During seasonal fishing (tuna season) marine birds (noddies, terns) forage in large groups. Offshore activities may impact marine birds within the Study Area.	There are no specific at-sea mitigations for seabirds; however, many of the at-sea compliance measures for marine mammals and at-sea restrictions of military activities afloat (listed in OPNAVINST 5090.1D) reduce the impact of military training and testing activities on marine birds. The military avoids areas where marine mammal foraging may occur (upwellings) which may also attract seabirds, as well as other restrictions cited in OPNAVINST 5090.1D for garbage handling at sea. Figure 3.6-3 has been removed from the document as this figure only showed a temporary foraging location (foraging areas are more dynamic spatially and temporally than suggested on the figure).
Guam DoAg - 67	58; (MITT-DEIS-OEIS Volume 2); 4-26; Marine Birds - Cumulative Impacts; it is unlikely that training and testing activities would influence nesting . .. ; Preferred Alternative	The text has been corrected in Chapter 4 (Cumulative Impacts) to be consistent with statements in Section 3.6 (Marine Birds). In summary, it is the Navy's determination that military training activities may impact

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	training activities will impact nesting marine birds on FDM, Tinian, Rota. Guam.	nesting activities within the MITT Study Area, particularly FDM. However, these effects will not adversely impact marine bird populations. This statement is in accordance with 50 C.F.R. Part 21, and supported by statistical analysis added to the Final EIS/OEIS. The results of the statistical analysis of 17 years of monthly and quarterly bird counts of the three booby species that nest on FDM are included in Section 3.6.2.6 (Rookery Locations and Breeding Activities within the Mariana Islands Training and Testing Study Area). The results of the statistical analysis do not show any significant changes in population trends for the three booby species included in the analysis.
Guam DoAg - 68	59; (MITT-DEIS-OEIS Volume 2); 4-26; Marine Birds - Cumulative Impacts; While limited amount of mortality could occur, no population level impacts would be expected. ; Offshore foraging areas should be avoided. A loss of large numbers of individuals may impact populations.	There are no specific at-sea mitigations for seabirds; however, many of the at-sea compliance measures for marine mammals and at-sea restrictions of military activities afloat (listed in OPNAVINST 5090.1D) reduce the impact of military training and testing activities on marine birds. The military avoids areas where marine mammal foraging may occur (upwellings) which may also attract seabirds, as well as other restrictions cited in OPNAVINST 5090.1D for garbage handling at sea. Figure 3.6-3 has been removed from the document as this figure only showed a temporary foraging location (foraging areas are more dynamic spatially and temporally than suggested on the figure).
Guam DoAg - 69	60; (MITT-DEIS-OEIS Volume 2); 4-27; Marine Vegetation - Cumulative Impacts; Draft EIS/OEIS does not describe mangrove habitats. How will the proposed MITT activities impact mangroves within the MITT area?	Mangroves habitats are discussed and analyzed in Section 3.7 (Marine Vegetation). Activities are unlikely to occur in areas with mangroves. There are no mangroves located in the vicinity of the underwater detonation sites.
Guam DoAg - 70	61; (MITT-DEIS-OEIS Volume 2); 4-27; Marine Vegetation - Cumulative Impacts; Most training and testing activities would occur in areas where seagrasses and other attached marine vegetation do not grow.; Marine vegetation areas should be highlighted as areas of concern and no activities should occur there.	The Final EIS/OEIS includes maps showing areas of marine vegetation and other habitats in Sections 3.3, 3.7, and 3.8.
Guam DoAg - 71	62; (MITT-DEIS-OEIS Volume 2); 4-28; Marine Invertebrates - Cumulative Impacts; .. .many of these actions and their associated cumulative impacts on marine invertebrates	Chapter 4.0 (Cumulative Impacts) in the EIS/OEIS analyzes cumulative impacts for each resource addressed in Chapter 3 (Affected Environment and Environmental Consequences. Cumulative impacts on

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	cannot be determined ... ; Cumulative impacts on marine invertebrates are not discussed in the DEIS must be determined with specificity and certainty prior approval of the EIS.	marine invertebrates are specifically addressed in Section 4.4.8 (Marine Invertebrates) of the EIS/OEIS.
Guam DoAg - 72	63; (MITT-DEIS-OEIS Volume 2); 4-28; Marine Invertebrates - Cumulative Impacts; Any impacts from the Proposed Action resulting injury or mortality would be to a relatively small number of individuals.; How is 'relatively small number' defined in the EIS? What is the amount being compared to? The biological resources within the MITT Study Area is minimal as is.	Because of the large number of animals (e.g., coral polyps) in a population (a coral community within a reef), the analysis balanced both quantitative and qualitative methods, but focused on the difference between individual impacts versus impacts on a species population impact. While it is true that a fatal effect to even one member of a population is an impact, the Navy, per CEQ guidance, must focus on "significant" impacts. Given the spatial and temporal impacts of these actions, the EIS/OEIS has determined that there are no population level effects, despite the impact upon a few members of the various species.
Guam DoAg - 73	64; (MITT-DEIS-OEIS Volume 2); 4-28; Fish - Cumulative Impacts; ...many of these actions and their associated cumulative impacts on fish cannot be determined …; Cumulative impacts from other actions for fish not discussed in this EIS must be determined with specificity and certainty proir approval of the EIS.	Chapter 4.0 (Cumulative Impacts) in the EIS/OEIS analyzes cumulative impacts for each resource addressed in Chapter 3 (Affected Environment and Environmental Consequences). Cumulative impacts on fish are specifically addressed in Section 4.4.9 (Fish) of the EIS/OEIS.
Guam DoAg - 74	65; (MITT-DEIS-OEIS Volume 2); 4-28; Fish - Cumulative Im pacts; Any impacts from the Proposed Action resulting injury or mortality would be to a relatively small number of individuals.; How is 'relatively small number' defined in the EIS? What is the amount being compared to? The biological resources within the MITT Study Area are minimal as is.	The analysis of the impacts on fish as a result of the military training and testing activities is discussed in greater detail in Section 3.9 (Fish) in the EIS/OEIS. Any impacts resulting in injury or mortality are not expected to cause a population level impact.
Guam DoAg - 75	66; (MITT-DEIS-OEIS Volume 2); 4-28; Fish - Cumulative Impacts; No population level impacts are anticipated.; EIS stated 'Many of the actions and their associated cumulative impacts on fish cannot be determined with any specificity or certainty at this time' but they conclude that overall injury and mortality on fish would be low because no population level impacts arc not anticipated? It is not clear how the EIS indicates low impacts on fish when it can't determine the	The cumulative analysis in the Final EIS/OEIS considers impacts from activities that are similar in nature to the Proposed Action. Some of these activities are widespread and the impacts are not easily quantifiable; however, while not quantifiable, any anticipated impacts on fish from military training and testing activities would be extremely small in comparison to commercial and recreational fishing activities.

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	impacts from all the actions.	
Guam DoAg - 76	67; (MITT-DEIS-OEIS Volume 2); 4-29; Terrestrial Species and Habitats - Cumulative Impacts; EIS identifies 'Critical Habitat' for Guam and Rota, however, it does not address habitat that is essential for the recovery of federal and locally listed endangered species. Designated areas proposed for the MITT are in highly sensitive areas for the recovery of endangered species.	The Navy is required to consult on potential impacts on designated Critical Habitat. Based on the analyses, the Navy determined that the proposed action will have no effect on the Micronesian kingfisher, Guam rail, and Mariana crow. The Navy's determination is made based on two criteria: (1) recovery actions (e.g., reintroductions) are not likely to occur within the Action Area within the foreseeable future, and (2) the Navy's Proposed Action does not require removal of 'recovery habitat.' The Navy's next evaluation of training and testing activities will include a reevaluation of the status of recovery actions.
Guam DoAg - 77	68; (MITT-DEIS-OEIS Volume 2); 4-29; Terrestrial Species and Habitats - Cumulative Impacts; EIS fails to discuss invasive species impacts. Most of the NAVY fleet will arrive from other US bases where invasive species may occur. Mitigation to inspect vessels prior to approaching the islands must be conducted before docking.	The U.S. Navy recognizes the importance of biosecurity, ecological integrity, and resiliency of island ecosystems to the potential introduction of invasive species to the Mariana Islands associated with military training and testing. The Navy has a number of policies in place to prevent, interdict, and control invasive species introductions in both terrestrial and marine environments. Specific policies for marine invasive species can be found at: OPNAVINST 5090.1D Chapter 35-3.19. (Ship and Ballast Water), 5090.1D Chapter 35-3.1 (Environmentally Sound Ships), and 5090.1D Chapter 12-3.10 (Invasive Species). For potentially invasive terrestrial species, the Navy has in place a number of policies and procedures to reduce or remove species from potential introduction pathways. These measures include coordination with USDA APHIS for inspection procedures for incoming cargo, equipment, and personnel from foreign locations. This information has been added to Section 3.10 (Terrestrial Species and Habitats) as part of an overall invasive species discussion that includes terrestrial, marine, and freshwater invasive species. In conclusion, the Navy maintains that introduction of invasive species associated with military training and testing activities is low. It should be noted that the Navy or other military services does not have jurisdiction of other potential pathways for introduction (e.g., commercial activities, U.S. mail, non-DoD personnel).
Guam DoAg - 78	69; (MITT-DEIS-OEIS Volume 2); 4-29; Terrestrial Species and Habitats - Cumulative Impacts ; The only significant impacts to	The text has been corrected in Chapter 4 (Cumulative Impacts) for consistency with statements in Section 3.10 (Terrestrial Species and

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	a terrestrial species, from training and testing activities would be on the Micronesian megapode.; EIS should include the possible impacts on the Mariana fruit bat and the breeding sites for marine birds.	Habitats). Based on the analyses conducted, the Navy determined that military training activities may affect and likely adversely affect Mariana fruit bats and Micronesian megapodes on FDM. In addition, Section 3.6 (Marine Birds) states that military training activities may impact nesting activities within the MITT Study Area, particularly FDM.
Guam DoAg - 79	70; (MITT-DEIS-OEIS Volume 2); Standard Operating Procedures, Mitigation, and Monitoring; The chapter defines standard operation procedures, mitigation and monitoring for the MITT activities. It fails to provide how DoD will implement activities to minimize or avoid any impacts to the resources.	The Navy is required, under Section 7(a)(2) of the ESA, to analyze proposed activities if they may affect ESA-listed species. The Final EIS/OEIS has been updated with the results and conclusions of the Section 7(a)(2) consultation between the Navy and the USFWS and NMFS. This includes any mitigation and monitoring requirements resulting from consultation. DoD is obligated to implement mitigation requirements that are identified as part of the consultation and outlined in the Biological Opinions.
Guam DoAg - 80	71; (MITT-DEIS-OEIS Volume 2); 5.69; Standard Operating Procedures, Mitigation, and Monitoring - Reporting ; The EIS identifies the Navy's commitment to documenting and reporting relevant aspects of training and testing activities. It fails to identify what resource agencies it will be reporting to. Will the local agencies receive reports?	The Navy formally consulted with USFWS and NMFS on threatened and endangered species that could potentially be affected by the proposed military training and testing activities within the MITT Study Area. The Biological Opinions and Letter of Authorization have reporting requirements that the Navy needs to comply with. Section 5.5.2 (Reporting) of the Final EIS/OEIS describes the reporting requirements. These reports are available upon request from USFWS and NMFS.
Guam DoAg - 81	72; (MITT-DEIS-OEIS Volume 2); General comment; Access to DoD lands should be granted to GovGuam natural resource agencies, including UOG's Marine Lab professors and personnel.	The Navy will work with GovGuam regarding access to DoD lands.
Guam DoAg - 82	73; (MITT-DEIS-OEIS Volume 2); General comment; Coordination with local agencies to develop and implement mitigation actions.	Mitigation measures are coordinated with the USFWS and NMFS as part of the formal consultation process. The Final EIS/OEIS has been updated with the results and conclusions of the Section 7(a)(2) consultation between the Navy and the USFWS and NMFS. This includes any mitigation and monitoring requirements resulting from consultations.
Guam DoAg - 83	74; (MITT-DEIS-OEIS Volume 2); General comment; Summary of past EIS's and the cumulative impacts on resources should	Cumulative impacts are addressed in Chapter 4 (Cumulative Impacts) of the EIS/OEIS. The analysis includes the incremental impact of the action

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	be included in the FEIS.	when added to the other past, present, and reasonably foreseeable future actions.
Governor Eloy S. Inos (Governor-Northern Mariana Islands) - 1	MITT EIS/OEIS Project Manager: As Governor of the Northern Mariana Islands, I send you these comments on the Navy's Draft Environmental Impact Statement ("DEIS") for training and testing within the Mariana Islands Range Complex. In short, this Administration is deeply concerned about the impacts of these proposed activities on marine wildlife in the CNMI, particularly on marine mammals, which remain grossly understudied in the region. My specific comments with respect to the DEIS are provided below. However, many of the political leaders of the Northern Mariana islands, myself included, are profoundly troubled by the expansive efforts of the Department of Defense to acquire additional property and control over our islands and the waters adjacent thereto for military (or defense responsibility) purposes. These DOD efforts to increase control over property belonging to the CNMI is in conflict and contrary to Section 802 of the Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America (in which the United States affirmed that it has no need for or intention to acquire any greater interest in property belonging to the CNMI). The MITT final environmental impact statement evaluating training and testing within the Mariana Islands Range Complex must consider the military's proposal to control more CNMI property in relation to the provisions in Section 802 of the CNMI Covenant.	The Navy shares your concern for marine life. Potential effects from Navy training and testing activities were analyzed in Chapter 3 of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. Furthermore, the Navy has invested heavily on marine species monitoring in the Mariana Islands since 2007. This includes implementing a comprehensive marine species monitoring plan where methods such as visual surveys, photoidentification, biopsy sampling, tagging (both marine mammals and sea turtles) and passive acoustic monitoring are used. The National Marine Fisheries Service Pacific Islands Fisheries Science Center has been funded to conduct much of the work for the Navy in the region, and has given local presentations and encouraged local scientists to become involved. The exercise and monitoring reports prepared for the Marianas can be found at www.navymarinespeciesmonitoring.us The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. The acquisition of additional property is not part of the MITT FEIS/OEIS Proposed Action. Other military activities discussed in Chapter 1 Purpose and Need (e.g., CJMT) could involve the acquisition of land (see Section 1.10 Ongoing Environmental Documents in the Study Area).
GovInos - 2	Specifically, as the DEIS indicates, the Navy intends to further intensify its activities around the islands, as part of an increased deployment into the Western Pacific that began in	Impacts of the proposed action have been vigorously analyzed and regulatory authorizations and consultations are underway.

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	the last decade. Under its preferred alternative, the Navy would annually run approximately 2500 hours of hull-mounted, mid-frequency sonar and many more thousands of hours of other active acoustics (DEIS at 3 .0-25); and each year it would detonate approximately 984 in-water explosives with a net explosive charge of 5 lb. or greater (DEIS at 3.0-28), in addition to thousands of smaller explosives and other types of ordinance. 2 Collectively, these activities are associated with a variety of environmental impacts on marine mammals and other marine biota, including disruptions in foraging and other vital behaviors, hearing loss, physjcal injury such as lung damage, and mortality. The DEIS itself estimates that Navy activities would take marine mammals approximately 409,970 times during the proposed 5-year authorization period, including some 133,510 instances of temporary hearing loss and 285 cases of permanent hearing loss or injury (DEIS at 3.0-1 14, 115, 143, 147).	The Navy is consulting with NMFS concerning potential impacts of the military training and testing activities on all marine mammals protected under the MMPA and all threatened and endangered marine mammals listed under the ESA known to occur in the MITT Study Area. The Navy has updated the Final EIS/OEIS based on the ongoing consultation with NMFS and will incorporate all reasonable and prudent measures, and terms and conditions that are set forth in the Biological Opinion in the Record of Decision.
GovInos - 3	Over the last several years, the scientific literature on anthropogenic noise, much of it funded by the Navy, has begun to produce evidence of population-level effects from range activity on disparate marine mammal taxa. This includes evidence of substantial demographic alteration in beaked whales resident to the Navy's AUTEC testing range in the Bahamas (Claridge 2013; see also Tyack et al. 2011, New et al. 2013), and evidence of disruption by naval mid-frequency sonar of metabolic rates in blue whales on the Navy's Southern California range, which the authors conclude may pose a significant risk to the recovery of blue whales in the Pacific (Goldbogen et al. 2013). These new studies join a larger cohort on diverse sources of anthropogenic noise, showing effects that are conducive to long-term impacts on individuals and populations (e.g., Miller et al. 2009, Hatch et al. 2012, Melcon et al. 2012, Rolland et al. 20 12, DeRuiter et	This issue was reviewed and the references cited were used in the development of the EIS/OEIS; however, based on this comment, an expanded discussion has been added to Section 3.4.5.2 (Summary of Observations During Previous Navy Activities). The conclusions presented in each of these references are discussed in the section.

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	al. 2013).	
GovInos - 4	We are further concerned that the Navy's take estimates, high as they may be, undercount exposures to disruptive levels of anthropogenic noise and to injury from in-water detonations. To take but one example, the Navy heavily reduces its estimates of marine mammal hearing loss, injuries, and mortalities on the assumption that its lookouts will detect marine mammals as effectively as experienced biologists in a NOAA line-transect survey (DEIS at 5- 17). This assumption is implausible for many reasons, beginning with the high sea states typically found in our region. which impede aerial and ship-based surveillance. Moreover, a series of recent controlled exposure and opportunistic studies indicate that the Navy's risk functions, used to estimate adverse exposures to midfrequency sonar, are excessively high and non-conservative for a number of species (Melcon et al. 2012, DeRuiter et al. 2013, Goldbogen et al. 2013, Harris et al. 2013).	Please refer to the EIS/OEIS beginning with Section 3.4.3.2 (Marine Mammal Avoidance of Sound Exposures) for a complete discussion of the adjustments made to the preliminary modeling. There is no assumption that Navy Lookouts will detect marine mammals as effectively as experienced biologists and the two are engaged in different activities under very different conditions. As detailed in Section 3.4.3.3 (Implementing Mitigation to Reduce Sound Exposures), line-transect surveys and subsequent analyses are typically used to estimate cetacean abundance and differ greatly from military training so the use of g(0) as a relative sighting factor is conservative for the following reasons: (1) Mitigation zones for military training and testing events are significantly smaller (typically less than 1,000 yd. radius) than the area typically searched during line-transect surveys, which includes the maximum viewable distance out to the horizon; (2) military events can involve more than one vessel or aircraft (or both) operating in proximity to each other or otherwise covering the same general area. Additional vessels and aircraft can result in additional watch personnel observing the mitigation zone resulting in more observation platforms and observers looking at the mitigation zone than the two primary observers used in marine mammal surveys upon which g(0) is based; (3) A systematic marine mammal line-transect survey is designed to sample broad areas of the ocean, and generally does not retrace the same area during a given survey. Therefore, in terms of g(0), the two primary marine mammal survey observers have only a limited opportunity to detect marine mammals that may be present during a single pass along the trackline. In contrast, the small- and medium-caliber gunnery exercises noted in the comment involve an area-focused event, where participants, impacts, and Lookouts are focused on the same small area through the duration of the exercise. Both of these circumstances result in a longer observation period of a focused area with more opportunities for detecting marine mammals, than are offered by a systematic marine mammal line-transect survey that only passes through an area once. With regard to the behavioral risk function, the lower threshold for the risk function is 120 dB SPL which, in some contexts and conditions, is close to ambient sound levels (Hawaiian

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		waters when chorusing humpback whales are present for example). The cited references (also addressed in the EIS/OEIS), in no way indicate the current response threshold is "non-conservative" as the context for any exposure is also as critical, and if in some cases more critical, than the actual sound level (see Southall et al. 2007 for a discussion of the importance of context).
GovInos - 5	Additionally, the Navy does not include any beaked whale mortalities within its take estimates, despite a previous stranding (one live) of two individual beaked whales on Saipan August 201 1 (Schofield 2011), which we believe may have been coincident with a naval exercise, and a long record of association of naval sonar with beaked whale mortality and injury (e.g., Evans and England 2001 , Fernandez et al. 2005, Hooker et al. 2009, Hooker et al. 2011). Relatively naïve populations of beaked whales, such as are found around our islands, may be at particular risk to this type of impact (Cox et al. 2006). Similarly, the Navy predicts that not a single marine mammal mortality would result from the use of underwater explosives, notwithstanding the many hundreds of detonations it proposes or the reported death of several common dolphins during a recent mine countermeasures exercise in its Silver Strand facility off San Diego, California (U.S. Navy 2011).	Preliminary necropsy results from the beaked whale which stranded on Saipan in August 2011 indicated that the individual was, according to researchers on hand, "very, very sick", had the worst kidneys ever seen, and it was therefore euthanized. The diseased condition of this animal was in no way related to Navy sonar use or other activities. As discussed in the EIS/OEIS, incidents involving beaked whale strandings and mortality coincident with sonar use are relatively rare and have never occurred anywhere in the Pacific. Note that the references cited in the comment were presented and cited in the EIS/OEIS. Although there remain unknowns regarding the causes of strandings coincident with sonar use, since 2006, the U.S. Navy has avoided the environmental and operational conditions that may have contributed to those strandings. Sonar use in the MITT Study Area has been ongoing for decades by the U.S. Navy, and along with the sonar from civilian fish-finders and depth sounders, beaked whales inhabiting the area should not be naive to sonar sound sources. Analysis of the impact of the proposed activities on beaked whale species is presented in Section 3.4 of the Final EIS/OEIS. The Navy developed a computer model to predict exposures to marine mammals, including beaked whales, which takes into account marine mammal density estimates, marine geologic features (e.g., water depth, bottom type), and the types of sound producing activities that would occur in the area. Conservative estimates of parameters are used in the model when data are scarce or not available (e.g., the greater of multiple density estimates). No mortalities or injuries of beaked whale species were predicted by the model from any source, including explosives. The use of sonar resulted in Level B exposures (i.e., TTS and behavioral) of beaked whale species. The Navy has and will continue to work closely with the National Marine Fisheries Service (NMFS) to mitigate potential effects to marine mammals. As a result of this coordination with NMFS, the Navy is requesting 2 Level A (injury or

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		mortality) takes of beaked whales per year in recognition of the uncertainty associated with how beaked whales respond to anthropogenic sounds. The take request includes any combination of Cuvier's beaked whale, Longman's beaked whale, and unspecified *Mesoplodon sp*. (not to exceed 10 beaked whales total over the 5-year length of requested authorization).
GovInos - 6	Active acoustics and explosives present a particular hazard to island-associated populations, as these populations are typically low in abundance, genetically isolated from others in their region, and range-limited. In Hawaii, for example, a multinational antisubmarine warfare exercise was associated with a mass embayment of 150-200 melonheaded whales (Southall et al. 2006, Brownell et al. 2009). Had the event not occurred in a well-populated area, and had rescuers not succeeded, after more than 24 hours, in leading the group back out to sea, mortalities would have exceeded the limit of what NMFS then considered sustainable for the population by a factor of 10 or more. As is the case with Hawaii (Faerber and Baird 2010), standings could well go undetected within the CNMI given low population density and other factors, reducing the likelihood of effective rescue and response. Further, island-associated populations may be subject to repeated sub-lethal effects from high-intensity noise-effects to which, given the unpredictability of the activity. they are unlikely to habituate (Wright et al. 2007; see also Tyack et al. 2011, DeRuiter et al. 2013).	While the continued historic use of sonar and explosives requires mitigation to reduce the potential impacts on marine species (as detailed in Chapter 5, Standard Operating Procedures, Mitigation, and Monitoring, of the EIS/OEIS), there has been no evidence of any long-term impacts on populations of marine mammals in the Pacific. Please see the Final EIS/OEIS Section 3.4.5.2 (Summary of Observations During Previous Navy Activities) which provides a comprehensive discussion on this topic. It is not correct to state that the multinational antisubmarine warfare exercise was associated with the event involving 150–200 melon-headed whales in Hanalei Bay in July 2004. Please see the discussion of this in the Technical Report – "Marine Mammal Strandings Associated With U.S. Navy Sonar Activities," which is available on the MITT EIS/OEIS website. As presented in that report, such events have occurred in other locations (500 to 700 melon-headed whales and Risso's dolphins also entered into Sasanhaya Bay, Rota in July 2004; 300 to 350 melon-headed whales in Manila Bay [Bataan], Philippines in February 2009) without any apparent cause. For that reason and many others, as described in the technical report, it is incorrect to presume that sonar use caused the event. As presented in the stranding technical report, the NMFS report on the Hanalei stranding concluded that sonar use was a "plausible, if not likely, contributing factor in what may have been a confluence of events" (Southall, et al., 2006). The lead author later clarified this finding stating, "To be clear, and contrary to certain media and other characterizations, the carefully worded and qualified Hanalei event report did not conclude that active military sonar *caused* this event. We do not know what caused it," (emphasis in the original Southall, et al., 2006). While it is clear that some strandings could go undetected in CNMI, the analysis presented in the EIS/OEIS and as

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		detailed in Section 3.4.5.2 (Summary of Observations During Previous Navy Activities) provide details on research, monitoring before, during, and after training and testing events across the Navy since 2006 showing why it is unlikely there will be impacts on populations of marine mammals having any long-term consequences as a result of the proposed continuation of training and testing in the ocean areas historically used by the military including the Study Area.
GovInos - 7	For these reasons, we make the following essential recommendations for the establishment of marine mammal mitigation areas within the CNMI and for additional effort at baseline data acquisition. **A. Habitat Protection Areas** There is general consensus within the scientific community that protecting important habitat represents the most effective means currently available of reducing the impacts of mid-frequency sonar on marine mammals (*e.g.,* Agardy et al. 2007, Parsons et al. 2008, Dolman et al. 2009, OS PAR Commission 2009. Convention on Biological Diversity 2012). Indeed, the U.S. National Oceanic and Atmospheric Administration itself reached this conclusion, in its 2010 review of naval sonar mitigation, noting the inadequacy of other Navy measures (Lubchenco 2010). Analogously, proper siting, in conjunction with an effective real-time monitoring protocol, can reduce risk of marine mammal injury and mortality from underwater detonations.	Please see Section 5.3.4.1.11 (Avoiding Marine Species Habitats) for a discussion on this topic. As presented in Section 5.3.3 (Mitigation Areas), the Navy is proposing to implement several mitigation measures within pre-defined habitat areas in the Study Area. The Navy formally consulted with USFWS and NMFS concerning the potential impacts of its proposed continuation of training and testing activities on all threatened and endangered species in the region. The Navy has updated the Final EIS/OEIS based on the ongoing consultation with NMFS and will incorporate all reasonable and prudent measures, and terms and conditions that are set forth in the Biological Opinion in the Record of Decision.
GovInos - 8	Nonetheless, no portion of the vast Mariana Island Range Complex was excluded by the Pacific Fleet from training and testing activities during the present five-year authorization period (75 Fed. Reg. 45527, 45549-45553). Nor does the Navy's new DEIS propose any such mitigation for marine mammals and sea turtles during the next authorization period, beginning in 2015.[1] Instead, while noting that "·practical science-based mitigation measures, including temporal or geographic constraints within	Mitigation areas are discussed in Section 5.3.3 (Mitigation Areas) of Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring). Recommended mitigation areas may be based off endangered species critical habitats, endangered species reproductive areas, or bottom features (note that the NMFS has not designated any critical habitat for ESA-listed species in the MITT Study Area). Mitigation areas as described above may be identified for marine mammals and sea turtles, if appropriate.

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	the study area," could be implemented later in the regulatory process, the DEIS suggests that to identify them now would be "premature" (DEIS at 2-51). [1] While the DEIS proposes restrictions on certain bombing and mine countermeasure activities in the immediate vicinity of shallow coral reefs, shipwrecks, and live hard-bottom habitat (DEIS at 5.50), no protective areas for marine mammals and other marine wildlife, and none for the vast majority of the Navy's activities, are suggested.	The Navy consulted with the NMFS concerning the potential impacts of the proposed training and testing activities on marine mammals protected under the MMPA (all marine mammals) and those that are also listed under the ESA. The Navy also consulted with NMFS for potential impacts on sea turtles, which area all protected under the ESA. The Navy has updated the Final EIS/OEIS based on the ongoing consultation with NMFS and will incorporate all reasonable and prudent measures, and terms and conditions that are set forth in the Biological Opinion in the Record of Decision. The Navy considers identification of any mitigation areas prior to the completion of consultation premature. Section 5.3.4.1.6 (Limiting Access to Training and Testing Locations) and Section 5.3.4.1.7 (Avoiding Locations Based on Bathymetry and Environmental Conditions) explain why the military cannot impose geographic limitations on training and testing activities. Reasons cited in the sections referenced above include (1) an increased safety risk to personnel, (2) an unacceptable impact on the effectiveness of training and testing activities that would affect military readiness, and (3) impractical burden with regard to implementation. The potential effects on marine mammals and sea turtles from sonar and other active acoustic sources and explosives were quantitatively analyzed using the Navy's acoustic effects model. No mortality or serious injury are predicted from acoustic source by the model and post-modeling analysis, which quantifies the benefits of the mitigation described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring). The vast majority of predicted effects on marine mammals and sea turtles are temporary effects to behavior or hearing sensitivity (see Section 3.4.4.1.3, Predicted Impacts from Sonar and Other Active Acoustic Sources, 3.4.4.2.3, Predicted Impacts from Explosives, and for sea turtles Section 3.5.3.1.7.1, Model-Predicted Impacts).
GovInos - 9	Respectfully, we believe that the National Environmental Policy Act, with its emphasis on transparency and public participation, requires consideration of reasonable alternatives and mitigation measures at the	Please see Section 2 (Description of the Proposed Action and Alternatives) of the EIS/OEIS with regard to discussion of the proposed action and alternatives considered. Please see Section 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS with

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	present stage of review, and we believe that such consideration cannot be premature while the Navy is already engaged in extensive training and testing activity around our islands.	regard to the consideration of standard operating procedures that are essential to maintaining safety and mission success, and in many cases have the added benefit of reducing potential environmental impacts, as well as the mitigation measures that are designed to help reduce or avoid potential impacts on marine, terrestrial, and cultural resources.
GovInos - 10	The CNMI believes that the following habitat-based mitigation measures are reasonable, conservative, science-based, and necessary to minimize risk. (1) *Marine Mammal Mitigation Zone #1.*— Exclude sonar and explosives training and testing from the vicinity of the islands of the CNMI, landward of the 3500m isobath. Island association, and the genetic or social isolation of island populations, has been observed in odontocete species in various parts of the world, including the Society Islands, American Samoa, the Canary Islands, and the Hawaiian Islands (e.g., Mayr and Ritter 2005, Oremus et al. 2007, 2012, Johnston et al. 2008). The main Hawaiian Islands, which fall at roughly the same latitude as the Northern Marianas, provide the most direct point of comparison. Multiple lines of evidence (tagging, mark-recapture, and biopsy) show that every odontocete species that has been examined there is distinct from other populations within the Hawaiian EEZ and Central Pacific (e.g., Andrews et al. 2006, McSweeney et al. 2007, Baird et al. 2008, McSweeney et al. 2009, Oleson et al. 2010). In some instances, the population structuring is even more discrete, with island-specific populations occurring in some species and island-specific social clustering in some populations (e.g., Aschettino et al. 2011, Martien et al. 2011, Baird et al. 2012). While biopsy and full mark-recapture results are not yet available for the CNMI, initial satellite-tagging data are indicative of site fidelity for several species, including spinner dolphins, bottlenose dolphins, rough-toothed dolphins, and short-finned pilot whales (Hill et al. 2013a). Additionally, spinner dolphins, bottlenose dolphins, and short-	As described in the response to the previous comment (GovInos - 9), the military cannot impose geographic limitations on training and testing activities based on bathymetric features. Reasons cited above include (1) an increased safety risk to personnel, (2) an unacceptable impact on the effectiveness of training and testing activities that would affect military readiness, and (3) impractical burden with regard to implementation. This process is further detailed in Section 5.2.3 (Assessment Method). As noted in Section 5.3.4 (Mitigation Measures Considered but Eliminated), the mitigation measures suggested within the comment were given consideration. Specifically, with regard to excluding sonar and explosives training and testing within the 3,500 m isobaths around land, please see Section 5.3.4.1.6 (Limiting Access to Training and Testing Locations) and Section 5.3.4.1.7 (Avoiding Locations Based on Bathymetry and Environmental Conditions). Restricting activities that use acoustics (e.g., sonar or explosives) to beyond the 3,500 m isobaths would not allow the military to conduct activities requiring a shallow water environment. Training personnel to conduct activities in shallow water is a key mission requirement. Military devices designed to be used in a shallow water environment must be tested in shallow water to ensure they will function as intended once they are delivered to operational forces. There are some historically conducted activities (examples such as pierside sonar testing and divers demolition training) that could not occur in deep water offshore. Additionally, the majority of proposed training and testing activities using sonar or explosives are conducted offshore, greater than 3 nm, and often much farther, from shore. Please also see the discussion in Section 5.3.4.1.7 (Avoiding Locations Based on Bathymetry and Environmental Conditions), Section 5.3.4.1.10 (Avoiding Locations Based on Distances from Isobaths or Shorelines), and Section 5.3.4.1.11 (Avoiding Marine Species Habitats). Finally, please see Section 3.4.5.2 (Summary of Observations During Previous Navy Activities) describing the ongoing 8

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	finned pilot whales have been resighted at the same and other islands within the small study area over the course of three survey years (NMFS 2013b). Further analysis of population structure, distribution, and abundance is essential; however, based on our knowledge of other island systems, the first few years of data from the Marianas, and the distinct risks posed to resident marine mammal populations, near island habitat should be protected. In Hawaii, insular populations of odontocetes are generally concentrated within the 3500m isobath around the islands (NOAA 2012; Baird et al. 2013). Movements of spinner dolphins, bottlenose dolphins, rough-toothed dolphins, and short-finned pilot whales within the CNMI, and sightings of beaked whales, appear consistent with this finding (Hill et al. 2013a). Although the Navy tends to site sonar activities beyond 3nm and explosives activities beyond 12nm from shore *(see* DEIS at 2-69 to 2-90), these distances are insufficient to protect important near-island habitat, as the bathymetry generally extends beyond them.	years of data regarding the lack of any apparent population level impact on marine mammals in and around the locations where Navy has routinely trained for decades. As noted in the comment, in Hawaii, there are many small populations of island associated species and there is no evidence from Hawaii, despite years of monitoring, that ongoing Navy activities (occurring more often and of larger intensity than in the MITT Study Area) have resulted in any population level effects.
GovInos - 11	(2) *Marine Mammal Mitigation Zone #2.*— Exclude sonar and explosives training and testing from the West Mariana Ridge to the 3500m isobath around the ridge, between roughly 13° and 18°N. A chain of conical seamounts (extinct volcanoes) comprises the West Mariana Ridge. On the far side of the Mariana Basin. Some seamounts (including the Pathfinder, Arakane, and Suruga Seamounts between 142°-143°E) rise to summits less than 50m below sea level (Miller et al. 2008). These seamounts support a rich diversity of coral reef and continental slope species, and previous surveys have shown dense concentrations of biological productivity: high planktonic production, and large schools of small and predatory fishes including skipjack and other species of tuna (Tsukomoto 2006; Miller et al. 2008).	The Navy does not anticipate any impacts on seamount habitats as a result of military training and testing activities involving the use of sonar or explosives. With regard to marine mammals, the mitigation measures involving the use of sonar and explosives are presented in Section 5.3.2 (Mitigation Zone Procedural Measures) and implemented as appropriate wherever the military trains and tests. These procedures are designed to be effective at reducing potential impacts, are practical to implement, and will not impact the readiness mission. Please see Section 5.3.4.1.7 (Avoiding Locations Based on Bathymetry and Environmental Conditions), for additional discussion of this previously proposed mitigation measure and its consideration. With regard to the presence of beaked whales on or near the West Mariana Ridge, please see the discussion in Section 3.4.5.2 (Summary of Observations During Previous Navy Activities) describing the ongoing 8 years of data regarding the lack of any apparent population level impact on marine mammals including the population of beaked whales routinely present in and around the

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	Consistent with this, multiple sightings of several cetacean species known to prefer high bathymetric relief were made during the Navy's 2007 line-transect survey on or near the West Mariana Ridge, including two of the survey's three beaked whale sightings (U.S. Navy 2007 at 3-17, 3-20, 3-21, 3-23). Similarly, recent analysis of passive acoustic data acquired during the same survey showed multiple detections of comparable species around the ridgeline (U.S. Navy 2012 at 107, 108), and recent satellite tagging effort showed use of the ridge by at least one false killer whale tagged off Rota (Hill et al. 2013a). The evidence is indicative of a biologically important feature that should be protected. A buffer area should be established around both Marine Mammal Mitigation Zones. For its Humpback Whale Cautionary Area off the Maui Complex, in the Hawaiian Islands, the Navy applies a buffer of 5km (5O C.F.R. § 216. 1 74(a)(1)(xxvii)). Given, however, the large numbers of marine mammal takes that are nominally expected to occur at greater distances (DEIS at 3.4-109), the CNMI believes that the Navy should establish a wider buffer for its powerful category MF1 sonar systems, to the maximum extent practicable.	Navy's Southern California instrumented range. For over 3 decades, this ocean area west of San Clemente has been the location of the Navy's instrumented training range and is one of the most intensively used training and testing areas in the Pacific, given the proximity to the Naval installations in San Diego. The Navy's use of the area has not precluded beaked whales from also continuing to inhabit the area, nor have there been documented declines or beaked whale mortalities associated with Navy training and testing activities.
GovInos - 12	**B. Additional Effort to Acquire Baseline Data** In 2011, an independent Scientific Advisory Group, which the Navy convened to evaluate its monitoring program across all of its offshore ranges, found a high need for baseline data acquisition within the Mariana Island Range Complex (Scientific Advisory Group 2011. U.S. Navy 2013). Consistent with this, and pursuant to the terms of its current Marine Mammal Protection Act authorization, the Navy is funding a multi-year marine mammal research effort here. This research, which is largely implemented through small-vessel surveys around Rota, Saipan, and Tinian (in addition to Guam),	Thank you for your participation in the NEPA process. Your comment has been broken down into component parts to ensure that all comments provided in your letter are addressed. As detailed in the EIS/OEIS in Section 3.4.5.2 (Summary of Observations During Previous Navy Activities), the Navy, in coordination with NMFS, has developed a comprehensive planning approach to conducting monitoring and research. Research methods and objectives have been prioritized based on available funding and research questions that will augment existing baseline data.

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	includes mark-recapture, tagging, and biopsy studies, and should aid in defining population structure, estimating abundance, and determining distribution of marine mammal populations in our region (U.S. Navy 2012). The present effort also includes two placements of High-Frequency Acoustic Recording Packages (HARPs), one west of Saipan and one offTinian, for acquiring information on baleen whales and other species further offshore (U.S. Navy 2012). The CNMI commends the Navy on this much-needed research program and strongly supports its continuation beyond the present 5-year authorization cycle. In addition to the small-vessel and HARP-based research described above. which should continue to remain the priority, and after careful review of the 2012-2015 monitoring plan (U.S. Navy 2012), we make the following recommendations for further study. (1) *Conduct small-vessel surveys in the islands north of Tinian.*- Although the Navy has historically used areas north of Tinian for training, particularly on and around Farallon de Medinilla, small-vessel surveys are currently limited to Guam and the southern portion of the CNMI (U.S. Navy 2012). It is necessary to expand this effort to the northern islands to acquire a more complete picture of population structure, abundance, and habitat use in the region. As with the present effort in the south, surveys should be conducted across multiple seasons and for more than one year, analogous to the multi-island survey effort taking place around the main Hawaiian Islands.	
GovInos - 14	(2) *Conduct a towed passive acoustic survey.*- Research in the Southern California Bight indicates that towed passive acoustic surveys greatly improve the effectiveness of visual surveys in detecting and defining beaked whale habitat (Yack et al. 2013). In the Marianas, where routinely high sea states exacerbate the difficulties inherent in beaked whale visual detection, use of such surveys may be essential for beaked whales, and useful for other species. Optimally, the survey	As detailed in the EIS/OEIS in Section 3.4.5.2 (Summary of Observations During Previous Navy Activities), the Navy, in coordination with NMFS, has developed a comprehensive planning approach to conducting monitoring and research. Research methods and objectives have been prioritized based on available funding and research questions that will augment existing baseline data.

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	should be run in line transects; alternatively, it may be possible to acquire sufficient data using relatively inexpensive drift recorders, without the use of a survey vessel (pers. comm., SWFSC). (3) *Acquire passive acoustic data on the West Mariana Ridge*.- As noted above, the Navy has installed two HARPs off Saipan and Tinian, to supplement its small-vessel survey effort with data on marine mammal occurrence further offshore (U.S. Navy 2012). For analogous reasons, we recommend that a similar effort be made for the West Mariana Ridge, a prominent oceanographic feature that, again, is likely to represent high-use habitat for marine mammals and their prey. (4) *Ensure finding for full analysis of photo-ID and mark-recapture data.*- While the Navy's Marine Species Monitoring Plan for Fiscal Years 2013-15 supports analysis of photo-ID and mark-recapture data for purposes of producing marine mammal abundance estimates (U.S. Navy 2012), it does not specifically provide for analysis of the same data for other critical purposes, such as defining population structure and determining species distribution. The Navy should clarify that support will be provided for these purposes.	
GovInos - 15	The CNMI looks forward to working with the Navy on implementing these provisions and furthering our mutual interests in the protection of marine species.	Thank you for your participation in the NEPA process.
Marine Mammal Commission Letter to Hawaii (MMC) - 1	Dear Sir or Madam: 24 October 2013 The Marine Mammal Commission (the MMC), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the Navy's Draft Environmental Impact Statement/Overseas Environmental Impact Statement (DEIS) for training and research, development, test, and evaluation	Thank you for your participation in the NEPA process. Your comment has been broken down into component parts to ensure that all comments provided in your letter are addressed. As a result, this portion of the comment does not contain a specific question or inquiry related to the EIS/OEIS. Therefore, no additional response is provided.

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	activities to be conducted from 2015 to 2020 within the Mariana Islands Training and Testing study area (MITT; 78 Fed. Reg. 56682). The DEIS discusses the impacts of those activities on marine mammals in the western Pacific Ocean. The MMC has commented on other draft environmental impact statements and previously proposed regulations for similar activities at other Navy training ~ nd testing study areas, including the Hawaii-Southern California Fleet Training and Testing study area HSTT 10 July 2012, 5 November 2012, 7 March 2013 MMC letters). **BACKGROUND** The Navy proposes to conduct training and testing activities (1) at both at-sea ranges near and land-based training areas on Guam and the Commonwealth of the Northern Mariana Islands (the CNMI), (2) in operating areas and special-use airspace in the region of the Mariana Islands that are part of the Mariana Islands Range Complex (MIRC) and the Complex's surrounding seas, and (3) in the transit corridor between the MIRC and the Hawaii Range Complex. The activities would involve the use of low-, mid-, high- and very high-frequency sonar, weapons systems, explosive and non-explosive practice munitions and ordnance, high -explosive underwater detonations, expended materials, airguns, electromagnetic devices, high-energy lasers, vessels, underwater vehicles (including gliders), and aircraft.	
MMC - 2	RECOMMENDATIONS The Marine Mammal Commission recommends that, prior to issuing the final environmental impact statement/ overseas impact statement, the Navy- • revise its DEIS by expanding the range of alternatives under consideration to include at least one with lesser levels of	The Navy explored a variety of alternatives and concluded that the three alternatives presented in the EIS/OEIS were the only reasonable alternatives that met training and testing requirements. The development of alternatives and discussion of alternatives eliminated from further consideration is presented in Section 2.5 (Alternatives Development). The Navy developed the alternatives considered in this EIS/OEIS after careful assessment by subject matter experts, including military units

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	training and testing activities; **RATIONALE** **No Action Alternative** In this and several prior environmental impact statements for various range complexes and training and testing study areas, the Navy has used the term " no action" to mean continued use at the current level. The Navy cites guidance from the Council on Environmental Quality (CEQ) as the basis of its selection of this baseline as the No Action Alternative against which other alternatives are compared. CEQ has published guidance (http://ceq.hss.doe.gov/nepa/regs/40/1-10.HTM) that posits two alternative interpretations of what constitutes no action. The first is that the action would not take place at all. Under that alternative, the impacts of the other alternatives would be assessed against not conducting any training or testing activities. As characterized by the Navy (page 2-54 of the DEIS), the second interpretation "allows the No Action Alternative to be thought of in terms of continuing with the present course of action until that action is changed." The referenced guidance states that- The first situation might involve an action such as updating a land management plan where ongoing management programs initiated under existing legislation and regulations will continue, even as new plans are developed. In these cases "no action" is "no change" from current management direction or level of management intensity. To construct an alternative that is based on no management at all would be a useless academic exercise. Therefore, the "no action" alternative may be thought of in terms of continuing with the present course of action until that action is changed. Consequently, projected impacts to alternative management schemes would be compared in the EIS to those impacts projected for the	and commands that utilize the ranges, military range management professionals, and Navy environmental managers and scientists. A reduction in training and testing activities would fail to meet the Purpose and Need and would not allow the Navy to meet its obligations under Title 10. Refer to Section 2.5 (Alternatives Development) of the EIS/OEIS for an explanation of the alternatives development.

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	existing plan. *In this case, alternatives would include management plans of both greater and lesser intensity, especially greater and lesser levels of resource development.* (Emphasis added.) The Navy has chosen to use a continuation of current activities as the No Action Alternative. The MMC understands that choice and considers it reasonable as long as the environmental impacts of all major current activities have been appropriately assessed. However, the MMC has serious concerns regarding the selection of the other alternatives because, as a set, they do not satisfy the requirement under the applicable guidance that the DEIS consider management of both greater and lesser intensity. The Navy suggested in its DEIS that it need not consider any alternative under which reduced training and testing would be conducted. Specifically, the Navy states that such an alternative cannot be considered because it would not allow it to meet its mandates under 10 U.S.C. § 5062. However, the guidance provided by CEQ on No Action Alternatives explains that- the regulations require the analysis of the no action alternative even if the agency is under a court order or legislative command to act. This analysis provides a benchmark, enabling decision makers to compare the magnitude of environmental effects of the action alternatives. It is also an example of a reasonable alternative outside the jurisdiction of the agency which must be analyzed. Thus, even though the Navy may prefer a different alternative that enables it to meet fully its obligations under Title 10, such alternatives must be analyzed in the DEIS. Therefore, the MMC recommends that the Navy revise its DEIS by expanding the range of alternatives under consideration to include at	

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	least one with lesser levels of training and testing activities.	
MMC - 3	• either adjust its density estimates for all species by adding some measure of uncertainty (e.g., two standard deviations) or to use the upper confidence interval and then re-estimate the numbers of takes accordingly; **Uncertainty in density estimates** The Navy estimated marine mammal densities in MITT based on (1) models that use direct survey sighting data and distance sampling theory, (2) models that use known or inferred habitat associations to predict densities (e.g., relative environmental suitability (RES) models), typically in areas where survey data are limited or non-existent, or (3) extrapolation from neighboring regional density estimates or population/ stock assessments based on expert opinion (Department of the Navy 2013). The Navy did note that estimates from both RES models and extrapolated densities include a high degree of uncertainty (Department of the Navy 2013)-although it doesn't appear that the Navy included a measure of uncertainty (i.e., standard deviation, coefficient of variation, etc.) in those estimates. For example, the Navy indicated that, in the absence of any other density data in this region, the minke and humpback whale density estimates were based on an LGL Limited (2008) survey in southeast Asia. Similarly, the data regarding Kogia spp. originated from line-transect surveys in Hawaii (Barlow 2006). The Navy believes that those data provide a reasonable approximation given their habitat assumptions (i.e., a mix of bathymetry but primarily deep water habitat), but noted the uncertainty regarding how representative these density data are to MITT. Further, the Navy used data from Fulling et al. (2011) to estimate the densities of various mysticetes and odontocetes. Although those surveys were conducted in Guam and the CNMI, Fulling et al. (2011) acknowledged that	The Navy coordinated with both the Pacific Islands Fisheries Science Center (PIFSC) and Southwest Fisheries Science Center (SWFSC) to identify the best available density estimates for marine mammals occurring in the Study Area. In all cases, a conservative (i.e., greater) estimate was selected. The use of a mean density estimate is consistent with the approach taken by NMFS to estimate and report the populations of marine mammals in their Stock Assessment Reports and the estimated mean is thus considered the "best available data." Adjusting the mean estimates as suggested would result in unreasonable measures, particularly given the very high coefficients of variation (CVs) associated with most marine mammal density estimates. Further, the Navy's acoustic model includes conservative estimates of all parameters (e.g., assumes that the animals do not move horizontally, assumes they are always head-on to the sound source so that they receive the maximum amount of energy, etc.) resulting in a more conservative (i.e., greater) assessment of potential impacts.

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	their estimates were probably of low precision and were underestimated because sighting conditions during the surveys were poor, with 66 percent of the total effort occurring in Beaufort sea states of 4 to 7. The MMC understands that density data are not available for all areas in which activities occur, and in areas where such data are available the densities could be underestimated. However, the MMC continues to believe that action proponents, including the Navy, should use the best available density estimate plus some measure of uncertainty (i.e., mean plus two standard deviations, mean plus the coefficient of variation, the upper confidence interval) for each species. If one uses a "best" density estimate, there is a 50 percent change that the actual density is either greater or lesser than that estimate. In this case, the density estimates from Fulling et al. (2011) have an associated coefficient of variation, and that uncertainty could be incorporated into the density estimates. Further, the Navy indicated that uncertainty characterized in the original density data references were catalogued and retained for potential later use. Therefore, those values should be readily available for analysis. Therefore, the MMC recommends that NMFS require the Navy either to adjust its density estimates for all species by adding some measure of uncertainty (e.g., two standard deviations) or to use the upper confidence interval and then re-estimate the numbers of takes accordingly.	
MMC - 4	• (1) use 145 rather than 152 dB re 1 µPa~-sec as the temporary threshold shift (ITS) threshold for high-frequency cetaceans exposed to acoustic sources, (2) use 169 rather than 172 dB re 1 µPa~-sec as the TIS thresholds for mid- and low-frequency cetaceans exposed to explosive sources, (3) use 145 rather than 146 dB re 1 µPa~ -sec as the TTS threshold for high-frequency cetaceans for explosive sources, and (4)(a) adjust the permanent threshold shift (PTS) thresholds for high-frequency cetaceans exposed to acoustic sources and	The temporary threshold shift thresholds used for the analysis in the EIS/OEIS were derived in concert with the National Marine Fisheries Service and are based on independent, peer-reviewed scientific studies. The development of these thresholds and criteria is detailed in the Technical Report "Criteria and Thresholds for U.S. Navy Acoustic and Explosive Effects Analysis" (Finneran and Jenkins 2012) that is referenced in the Final EIS/OIES (see Section 3.4.3.1.4, Thresholds and Criteria for Predicting Acoustic and Explosive Impacts on Marine Mammals) and available on the MITT EIS/OEIS website (www.mitt-

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	behavioral thresholds for low-, mid-, and high-frequency cetaceans exposed to explosive sources (i.e., by 20 and 15 dB, respectively) and (b) adjust the behavioral thresholds for low-, mid-, and high-frequency cetaceans exposed to explosive sources (i.e., by 5 dB) based on those decreases in the TTS thresholds; **Criteria and thresholds** The Navy proposed to estimate the numbers of takes resulting from its activities by adjusting received sound levels at different frequencies based on the hearing sensitivity of various groups of marine mammals at those frequencies. The adjustments were based on "weighting" functions derived by Southall et al. (2007) and Finneran and Jenkins (2012; Type I and Type II weighting functions, respectively). Type I weighting functions (see Figure 1 in Southall et al. 2007) are flat over a wide range of frequencies and then decline at the extremes of the animal's hearing range. Type II weighting functions (Finneran and Jenkins 2012) are used only for cetaceans and combine the precautionary Type I curves developed by Southall et al. (2007) with equal loudness weighting functions derived from empirical studies of bottlcnose dolphins (Finneran and Schlundt 2011). The MMC considers the theory behind those weighting functions to be reasonable. However, the amplitudes of the final Type II weighting functions appear to have been shifted, lowering the sound exposure levels (SELs) at all frequencies by roughly 16-20 dB (compare Figures 2 and 6 of Finneran and Jenkins (2012)). For sonar-related activities, Finneran and Jenkins (2012) reduced the TTS thresholds for acoustic sources for low- and mid-frequency cetaceans (see Table 2 in Southall et al. 2007 for information on functional hearing groups) by 17 dB, assuming they rounded up from 16.5 dB. However, they only reduced the TTS threshold for high-frequency cetaceans by 18.3 rather than 19.4 dB (Table 4 in Finneran and Jenkins	eis.com). It should be noted that these criteria and thresholds are largely identical to the NMFS proposed "Draft Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammals" (still in review as of March 2014) and the Navy is therefore confident that the current thresholds used in the analysis reflect the use of the best available science at this time. The same offset between impulsive and non-impulsive temporary threshold shift, for the only species where both types of sound were tested (beluga), was used to convert the Kastak data (which used non-impulsive tones) to an impulsive threshold. This method is explained in Finneran and Jenkins (2012) and Southall et al. (2007). The comment is not accurate in characterizing frequency weighting; therefore, refer to Section 3.4.3.1.4.2 (Frequency Weighting) and Finneran and Jenkins (2012) regarding the integration of the concept to account for the frequency bandwidth of hearing in marine mammals. As presented in Finneran and Jenkins (2012) the thresholds incorporate new findings since the publication of Southall et al (2007) and the evolution of scientific understanding since that time. Please note that Dr. Finneran was one of the authors for Southall et al. (2007) and so is completely familiar with the older conclusions presented in the 2007 publication and therefore was able to integrate that knowledge into the development of the refined approach presented in Finneran and Jenkins (2012) based on evolving science since 2007.

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	(2012)). Because data are lacking for TTS thresholds for high-frequency cetaceans exposed to acoustic (i.e., tonal) sources, Finneran and Jenkins (2012) indicated that a 6-dB correction factor then was added to the TTS threshold (because it was derived from exposure to non-explosive impulsive sources (i.e., from airguns) rather than acoustic sources) based on the method outlined in Southall et al. (2007). However, the MMC's understanding is that Southall et al. (2007) did not use a 6-dB correction factor to extrapolate between impulsive and acoustic thresholds, but rather to estimate PTS thresholds from TTS thresholds based on peak pressure levels. Therefore, the MMC does not support the increase of the reduced TTS threshold by 6 dB for the high-frequency cetaceans. Further, it is unclear how the explosive thresholds (i.e., for underwater detonations) were adjusted downward to account for the amplitude decrease in the Type II weighting functions. For example, Finneran and Jenkins (2012) indicated that they used Finneran et al. (2002) TTS data of 186 dB re 1 μPa^2-sec to determine the TTS threshold for explosives for mid-frequency cetaceans, which also was supported by Southall et al. (2007). But if one uses the purported method of subtracting 16.5 dB from that threshold, the resulting Type II weighted SEL would be 169.5 (it appears it should be rounded down to 169 based on the Finneran and Jenkins (2012) document) rather than 172 dB re 1 μPa^2-sec. Finneran and Jenkins (2012) proposed to use 172 dB re 1 μPa^2-sec for low-frequency cetaceans as well. Lastly, they appear to use a correction factor of 18 rather than 19.4 to adjust the Type II weighted SEL for high-frequency cetaceans. The MMC is concerned that the TTS thresholds for explosive sources that the Navy used not only are greater than they should be based on the methods described but also are used as the basis for the PTS and behavioral thresholds. Thus, if those thresholds were not adjusted by the appropriate amplitude factor, the Navy may have underestimated the numbers of takes of marine mammals. To address these concerns, the MMC recommends that the Navy (1) use 145	

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	rather than 152 dB re 1 µPa^2-sec as the TTS threshold for high-frequency cetaceans exposed to acoustic sources, (2) use 169 rather than 172 dB re 1 µPa^2 -sec as the TTS thresholds for mid- and low-frequency cetaceans exposed to explosive sources, (3) use 145 rather than 146 dB re 1 µPa^2-sec as the TTS threshold for high -frequency cetaceans for explosive sources, and (4)(a) adjust the PTS thresholds for high-frequency cetaceans exposed to acoustic sources and behavioral thresholds for low-, mid-, and high-frequency cetaceans exposed to explosive sources (i.e., by 20 and 15 dB, respectively) and (b) adjust the behavioral thresholds for low-, mid-, and high-frequency cetaceans exposed to explosive sources (i.e., by 5 dB) based on those decreases in the TTS thresholds.	
MMC - 4	• (1) use 171 and 194 dB re 1 µPa~ -sec as the TIS thresholds for phocids and otariids, respectively, exposed to explosive sources and (2) adjust the PTS and behavioral thresholds by 15 and 5 dB, respectively, for both phocids and otariids based on those decreases in the TTS thresholds; **Rationale** For determining TTS thresholds for pinnipeds for underwater detonations, the Navy used data from Kastak et al. (2005) and extrapolation factors from Southall et al. (2007). Kastak et al. (2005) estimated the average SEL for onset-TTS for pinnipeds exposed to octave-band underwater sound centered at 2.5 kHz (i.e., mid-frequency sound). However, underwater detonations produce broadband sound in the low-frequency range. The MMC recognizes that the data provided by Kastak et al. (2005) may be the only data available, but it is unclear if those data provide an appropriate basis for estimating the relevant thresholds. More importantly, the extrapolation factors from Southall et al. (2007) were not stated specifically in the Navy's analysis for underwater detonations, but it appears that the Navy used 6 dB. As noted in the previous paragraph, Southall et al. (2007) seem to have used 6 dB as	A summary of the thresholds used in the analysis are presented in Section 3.4.3.1.4 (Thresholds and Criteria for Predicting Acoustic and Explosive Impacts on Marine Mammals). Given there are no pinnipeds in the MITT Study Area, there can be no exposures to phocids and otariids, and any concern over pinniped thresholds is misplaced since it has no bearing on the analysis in the MITT EIS/OEIS. There are no presentations of thresholds for pinnipeds (phocid and otariid) in the MITT EIS/OEIS, so Navy cannot respond to the MMC comment based on text that does not come from the MITT EIS/OEIS that is being considered.

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	the extrapolation factor for determining PTS thresholds from TTS thresholds based on peak sound pressure levels, not for extrapolating from acoustic to explosive thresholds. Further, Southall et al. (2007) determined the TTS threshold for harbor seals exposed to pulsed sound (explosive sources) by using a correction factor of 12 dB to reduce the Type I threshold of 183 dB re 1 μPa^2 -sec for mid-frequency cetaceans, which equates to 171 dB re 1 μPa^2-sec. The MMC believes that threshold should have been used by the Navy rather than the 177 dB re 1 μPa^2-sec. Similarly, the threshold for otariids should be 194 rather than 200 dB re 1 μPa^2-sec. Further, as stated previously, the TTS thresholds serve as the basis for the PTS and behavioral thresholds and could have been underestimated. Therefore, the MMC recommends that the Navy (1) use 171 and 194 dB re 1 μPa^2-sec as the TTS thresholds for phocids and otariids, respectively, exposed to explosive sources and (2) adjust the PTS and behavioral thresholds by 15 and 5 dB, respectively, for both phocids and otariids based on those decreases in the TTS thresholds.	
	• use its spatially and temporally dynamic simulation models rather than simple probability calculations to estimate strike probabilities for specific activities (i.e., movements of vessels, torpedoes, unmanned underwater vehicles and expended munitions, ordnance, and other devices); **Rationale** **Probability of strike** The Navy estimated the probabilities of vessels, expended munitions, and non-explosive materials (e.g., sonobouys) striking a marine mammal. The Navy's method for determining those strike probabilities was based on simple probability calculations. For example, it used a Poisson model to estimate the probability of ship strikes based on the	MMC disagreement over the method the Navy has used is noted. Any increases in vessel movement, as discussed in Section 3.4.4.4.1 (Impacts from Vessels), over the No Action is still well below areas such as SOCAL where the density of large whales and the number of Navy activities is much higher than any of the MITT alternatives and yet strikes to large whales are still relatively rare in SOCAL. Additionally, while the number of training and testing activities is likely to increase, it is not expected to result in an appreciable increase in vessel use or transits since multiple activities usually occur from the same vessel. The Navy is not proposing substantive changes in the locations where vessels have been used over the last decade. The rate at which strikes are expected to occur should remain the same. The recommendation of the Marine Mammal Commission to use a dynamic simulation model to estimate strike probability was considered, but the Navy found that use of historical data was more appropriate for the analysis. The strike probability analysis completed in this EIS/OEIS is based upon actual data collected from historical use of vessels, in-water

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	historical rate of ship strikes. Although the use of the Poisson model is not unreasonable for modeling the occurrence of rare and random events, such as a ship striking a marine mammal, the assumption that the encounter rate will remain at historical levels is questionable because the Navy proposes to increase the number of training and testing activities, the abundance of marine mammals could change (or as previously stated, could have been underestimated), and both the distribution of marine mammals and Navy activities may not be random. For these reasons, the Navy should provide a more accurate assessment based on the best available information for marine mammals and the locations and scheduled times of its activities. In addition, the Navy estimated the probability of spent munitions or non-explosive materials striking marine mammals in Appendix G of its DEIS. In doing so, the Navy simply compared the aggregated footprint of some specific marine mammal species with the footprint of all objects that might strike them. Both of those were based only on densities of marine mammals in the action area and expected amount of materials to be expended within a year in those areas. By combining marine mammal densities and those activities over space and time into a single calculation, the Navy provided only a crude estimate of strike probabilities for the average condition, which likely was underestimated based on the shortcomings of the density data (as previously discussed). Here, again, neither marine mammals nor Navy activities are distributed homogeneously in space or time. To provide a more reliable estimate of possible takes from munitions and materials, the Navy should incorporate spatial and temporal considerations in its calculations to estimate takes. For example, the Navy's model for determining takes of marine mammals from sound-producing activities can account for the movement of sound sources and marine mammals. Using that model to estimate the probability of strike, the Navy could change the data collected by the animat dosimeters from a	devices, and military expended materials and the likelihood that these items may have the potential to strike an animal. These data account for real world variables over the course of many years, and any model would be expected to be less accurate than the use of actual data. There is no available science regarding the necessary functional parameters for a complex dynamic whale strike simulation model; are large unknowns regarding the data that would be necessary such as the density, age classes, and behavior of large whales in the MITT Study Area; and is no means to validate the output of a model given there is no empirical data (not strikes) to "seed the dynamic simulation." Therefore, use of historical data from identical activities elsewhere and additional use of a probability analysis remain a more reasonable analytical approach. The comment reflects a misunderstanding of the mitigations by confusing them with the adjustments made to the modeling based on the mitigations. As presented in Table 5.3-2 and Section 5.3.2.1.1.1 (Low-Frequency and Hull Mounted Mid-Frequency Active Sonar), implementation of the 200 yd. (183 m) shutdown zone will reduce the potential for exposure to higher levels of energy that would result in injury (PTS) and large threshold shifts that are recoverable (i.e., TTS) when individuals are sighted. Implementation of the 500 yd. (457 m) and 1,000 yd. (914 m) sonar power reductions will further reduce the potential for injury (PTS) and larger threshold shifts that would result in recovery (i.e., TTS) to occur when individual marine mammals are sighted within these zones, especially in cases where the ship and animal are approaching each other. The average range to TTS is 100 yards so the proposed mitigation measures reduce most TTS and PTS exposures when implemented.

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	received sound level to a close approach distance, which would result in more realistic strike probabilities. For the HSTT Final Environmental Impact Statement/Overseas Environmental Impact Statement (FEIS), the Navy indicated that it considered using a dynamic simulation model to estimate strike probabilities but determined that use of historical data was more appropriate for the analysis. The Navy believed that those data account for real-world variables over many years, and any model would be expected to be less accurate than the use of actual data. The MMC disagrees with that conclusion. First of all, the activities under the Preferred Alternative would increase over baseline (i.e., the No Action Alternative) . As an example, the nunber of training activities involving vessel movement would increase by approximately 300 percent over the No Action Alternative and using the historical rate of ship strikes based on lesser numbers of vessels would underestimate the probability of ship strikes under the Preferred Alternative. Further, the MMC supports the use of actual data relevant to the activities proposed under the alternatives. However, those data should be used to seed the dynamic simulation models rather than in the current crude calculations of strike probabilities. Therefore, the MMC again recommends that the Navy use its spatially and temporally dynamic simulation models rather than simple probability calculations to estimate strike probabilities for specific activities (i.e., movements of vessels, torpedoes, unmanned underwater vehicles and expended munitions, ordnance, and other devices).	
	• provide the predicted average and maximum ranges for all impact criteria (i.e., behavioral response, TTS, PTS, onset slight lung injury, onset slight gastrointestinal injury, and onset mortality), for all activities (i.e., based on the activity category and representative source bins), and for all functional hearing groups of marine mammals;	Ranges to effects for all criteria and functional hearing groups are provided for representative active sonars (Section 3.4.4.1.1, Range to Effects) and explosives (Section 3.4.4.2.1, Range to Effects). The representative sources include the most powerful active sonar source and the charge with the largest net explosive weight analyzed. Average ranges to effect are provided in the EIS/OEIS to show the reader typical zones of impact around representative sources and are sufficient to

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	Rationale **Mitigation and monitoring measures** Many of the proposed activities involve mitigation measures that currently are being implemented in accordance with previous environmental planning documents, regulations, or consultations. Most of the current mitigation zones for activities involving acoustic (e.g., mid- and high-frequency active sonar) or explosive sources (e.g., underwater detonations, explosive sonobuoys, surface detonations) were designed originally to reduce the potential for onset of TTS. For the DEIS, the Navy revised its acoustic propagation models by updating hearing criteria and thresholds and marine mammal density and depth data. Based on the updated information, the models now predict that certain activities may have adverse effects over greater distances than previously expected. Due to the ineffectiveness and unacceptable operational impacts associated with mitigating those large areas, the Navy is unable to mitigate for onset of TTS for every activity. For that reason, it proposes to base its mitigation zones for each activity on avoiding or reducing PTS. Table 5.3-2 in the DEIS lists the Navy's predicted distances or ranges over which PTS and TTS might occur and the recommended mitigation zones. Rather than include all sources, the table categorizes sound sources by a representative source type within a source bin (e.g., Bin MF1: SQS- 53 antisubmarine warfare hull-mounted sonar) and provides average and maximum distances from the sound source at which PTS and the average range at which TTS could be expected to occur. Chapter 3 of the DEIS also includes tables listing various ranges. However, the tables in Chapter 3 include only a subset of the proposed activities (6 of the 12 explosive activities analyzed) and the average rather than maximum ranges (see Table 3.4-19). In addition, the DEIS does not provide the ranges to PTS for acoustic sources for more	understand the remainder of the EIS/OEIS as it applies to the range to effects represented by the representative ranges provided. As presented in Table 5.3-2 and Section 5.3.2.1.1.1 (Low-Frequency and Hull Mounted Mid-Frequency Active Sonar), implementation of the 200 yd. (183 m) shutdown zone will reduce the potential for exposure to higher levels of energy that would result in injury (PTS) as well as many threshold shifts that are recoverable (i.e., TTS). Implementation of the 500 yd. (457 m) and 1,000 yd. (914 m) sonar power reductions will further reduce the potential for injury (PTS) and again, most threshold shifts that would result in recovery (i.e., TTS) including for those marine mammals within a hearing group having a larger range to effects. The average range to TTS is 100 yards, so the proposed mitigation measures reduce most TTS and PTS exposures when implemented. The Proposed Action is most completely presented in the MITT EIS/OEIS as opposed to the specialized presentation in the LOA Application referenced. Ranges to effects for all criteria and functional hearing groups are provided for representative active sonars (Section 3.4.4.1.1, Range to Effects); for explosives see Section 3.4.4.2.1 (Range to Effects). For additional information specific to mitigation zones, see Section 5.4 (Mitigation Summary) of the MITT EIS/OEIS, including Table 5.4-1 showing mitigation zones. As explained in the EIS/OEIS, there is no reason to show a PTS range for more than 1 ping because of the short distances and as explained in Section 3.4.4.1.1 (Range to Effects), for the case of the most powerful hull mounted source, the ship moves beyond the PTS zone for each successive ping and there is no difference in successive pings. The representative sources include the most powerful active sonar source and the largest proposed charge weight analyzed. The Navy needs to conduct testing and training in a variety of environments having variable acoustic propagation conditions and these variations in acoustic propagation conditions are considered in the Navy's acoustic modeling and the quantitative analysis of acoustic impacts; average ranges to effect are provided in the EIS/OEIS to show the reader typical zones of impact around representative sources.

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	than 1 ping (Table 3.4-10), as it does for TTS (i.e., 1, 5, and 10 pings; Table 3.4-11). Instead, the Navy simply assumed that marine mammals would not maintain a nominal speed of 10 knots parallel to a ship and thereby would not receive sound from more than a single ping. Absent that information, the DEIS process is not fully transparent and the MMC and public cannot comment on the appropriateness of the proposed mitigation zones. To address those shortcomings, the MMC recommends that the Navy provide the predicted average and maximum ranges for all impact criteria (i.e., behavioral response, TTS, PTS, onset slight lung injury, onset slight gastrointestinal injury, and onset mortality), for all activities (i.e., based on the activity) category and representative source bins and including ranges for more than 1 ping), and for all functional hearing groups of marine mammals.	With regard to ranges to PTS and as explained for sonar and other active acoustic sources in Section 3.4.4.1.1 (Range to Effects), because the ranges are so short for even the most powerful acoustic source of concern (hull mounted mid-frequency anti-submarine warfare sonar), the ship is moving, and the pings occur approximately every 50 seconds, there is not sufficient overlapping energy from one ping to the next to make presentation of multiple pings useful (each subsequent ping has the same approximate range to PTS from the bow of the ship as the first ping). As noted in the comment and presented in the EIS/OEIS, an animal would have to be exposed to a TTS level first ping and then parallel the ship within close proximity for 50 seconds to receive a second ping potentially resulting in PTS. Given all the science detailed in the EIS/OEIS (see, for example, Section 3.4.4.1.2, Avoidance Behavior and Mitigation Measures as Applied to Sonar and Other Active Acoustic Sources) indicating that marine mammals will behaviorally avoid high levels of sound, the assumption that a marine mammal would not remain along-side a pinging vessel is a simple but reasonable assumption. As presented in the EIS/OEIS, while 10 knots was the speed used in modeling the ship's speed of advance, a ship engaged in anti-submarine warfare training or testing would be moving at between 10 and 15 knots. In addition, and as discussed in the EIS/OEIS in Section 3.4.3.1.5.4 (Model Assumptions and Limitations), there are many other conservative inputs made with regard to the modeling that will tend to overestimate impacts such as assuming marine mammals are always facing the source and therefore hearing the maximum sound predicted for a location. Providing maximum possible ranges would not be representative of the average conditions that are expected.
	• use passive and active acoustics, whenever practicable, to supplement visual monitoring during the implementation of its mitigation measures for all activities that could cause PTS, injury, or mortality; **Rationale** The Navy indicated in its DEIS that the use of lookouts (i.e.,	Passive acoustic monitoring is already and will continue to be implemented with several activities (e.g., Improved Extended Echo Ranging sonobuoys and torpedo [explosive] testing). As mentioned in numerous locations in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, passive acoustic monitoring would be conducted with Navy assets, such as passive ships sonar systems or sonobuoys, already participating in the activity. Therefore, Navy does not only employ visual monitoring but also makes use of

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	observers) would increase the likelihood of detecting marine mammals at the surface, but it also noted that it is unlikely that using lookouts will be able to help avoid impact on all species entirely due to the inherent limitations of sighting marine mammals. The MMC agrees and has made numerous recommendations to the Navy in previous letters to characterize the effectiveness of visual observation. For a number of years, the Navy has been working with collaborators at the University of St. Andrews to study observer effectiveness. Although the data are preliminary, the marine mammal observers (MMOs) have sighted at least three marine mammals at distances less than 914 m (i.e., within the mitigation zone for mid-frequency active sonar), which were not sighted by Navy lookouts (Department of the Navy 2012). Further, MMOs have reported marine mammal sightings not observed by Navy lookouts to the Officer of the Deck, presumably to implement mitigation measures-however details regarding those reports or raw sightings data were not provided to confirm (Department of the Navy 2010). The MMC believes that these studies will be very useful once completed but that a precautionary approach should be taken in the interim. Accordingly, the MMC believes that the Navy should supplement its visual monitoring efforts with other measures rather than simply reducing the size of the zones it plans to monitor. The Navy did propose to supplement visual monitoring using passive acoustics during activities that generate impulsive sounds (i.e., primarily explosives) but not during the use of low-, mid-, and high-frequency active sonar. The Navy uses visual, passive acoustic, and active acoustic monitoring during Surveillance Towed Array Sensor System Low Frequency Active (SURTASS LFA) sonar activities to augment its mitigation efforts over large areas. Therefore, it is not clear why the Navy did not propose to use those same monitoring methods as part of its mitigation measures for the other activities described in its DEIS. To ensure effective	passive acoustic detection, when available and appropriate. The Navy's visual mitigation has been demonstrated to be effective over the 7 years of monitoring conducted during Navy training and testing activities at sea. Monitoring reports submitted to NMFS since 2006 are accessible on the NMFS Office of Protected Resources website. The EIS/OEIS describes the integration of the Lookouts into the implemented mitigation in Section 3.4.3.3, Implementing Mitigation to Reduce Sound Exposures. The Navy does not expect nor state that use of Lookouts is expected to avoid impacts on all species entirely. A summary of the current status of the Navy's Lookout effectiveness study is presented in Section 5.3.1.2.4 (Effectiveness Assessment for Lookouts) of the EIS/OEIS. The Navy believes consideration of marine mammal sightability and activity-specific mitigation effectiveness in its quantitative analysis is appropriate in order to provide decision makers a reasonable assessment of potential impacts under each alternative. Any marine mammal detection within the mitigation zones results in implementation of the appropriate mitigation measures. Details on implementation of mitigation and sightings of marine mammals can be found in the annual exercise reports provided to NMFS and briefed annually to NMFS and the Marine Mammal Commission. The annual exercise reports can be found at http://www.navymarinespeciesmonitoring.us/. For more information on how mitigation is implemented see MITT EIS/OEIS Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) and specifically Table 5.4-1.

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	mitigation and monitoring, the MMC recommends that the Navy use passive and active acoustics, whenever practicable, to supplement visual monitoring during the implementation of its mitigation measures for all activities that could cause PTS, injury, or mortality.	
	• if an animal is not observed to have left the mitigation zone after a shutdown, use a second clearance time category of 60 minutes for deep-diving species (i.e., beaked whales and sperm whales); **Rationale** The Navy has proposed to cease acoustic activities (i.e., active sonar transmissions, Bin MF1) when a marine mammal is detected within the mitigation zone. This raises the issue of when those activities should resume. According to the DEIS, those acoustic activities would resume when (1) the animal has been seen to leave the area, (2) the animal has not been detected for 30 minutes, (3) the animal is thought to have exited the mitigation zone based on its course speed and the relative motion between the animal and the source, (4) the vessel has transited more than 1.8 km beyond the location of the last detection, or (5) ship personnel conclude that dolphins are deliberately approaching the ship to ride its bow wave. The MMC questions some of those requirements when the position of the marine mammal is unknown. The key consideration is the position of the marine mammal relative to the sound source, which is best estimated as a function of the marine mammal's position when first sighted and the speed and heading of both the vessel and the marine mammal. If the vessel and marine mammal are not moving in the same direction, then the marine mammal may leave the mitigation zone relatively quickly. However, if they are moving in the same direction, then the marine mammal may remain within the mitigation zone for a prolonged period. Unless the marine mammal is resighted leaving or already outside the mitigation	As described in the Final EIS/OEIS in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring), a 30 min. wait period more than covers the average dive times of most marine mammal species but may not be sufficient for some deep-diving marine mammal species. Note also that the analysis in Section 3.4.4.1.3 (Predicted Impacts from Sonar and Other Active Acoustic Sources) and in Section 3.4.4.2.3 (Predicted Impacts from Explosives) shows that injury to deep-diving marine mammals (e.g., sperm whales and beaked whales) are not expected to occur. Furthermore, any wait period greater than 30 min. would result in an unacceptable operational impact on readiness. The Navy agrees that implementation of the mitigation begins with detection of a marine mammal. The Navy, in consultation with NMFS, developed a set of conditions for recommencing an activity, as detailed in Section 5.3.2.1.1.1 (Low-Frequency and Hull Mounted Mid-Frequency Active Sonar) of the EIS/OEIS that is essentially as provided in the comment. In developing these conditions, the Navy was fully aware that unless the marine mammal is detected again, there are a number of possible ways it could remain in the vicinity of an activity. The Navy took into account the possibility that a marine mammal could possibly remain underwater where it is not visible or that it could change its direction of travel and/or could possibly change its speed and determined the mitigation measures presented in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) based upon on two principles: (1) mitigations will be effective at reducing potential impacts on the resource; and (2) from a military perspective, the mitigations are practical to implement, and personnel safety and readiness will not be impacted. The Navy is aware of the diving behaviors of marine mammals and integrated the data in Watwood and Buonantony (2012) into the

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	zone, the Navy should not resume its activity until it has had a reasonable chance of verifying that it can do so without further impacting the marine mammal. The delay should take into account that (1) a marine mammal may remain underwater where it is not visible, (2) it may change its heading and speed in response to a vessel or sound source, and (3) visual observation alone may not be sufficient to determine a marine mammal's position relative to a vessel or sound source after the initial sighting, unless the marine mammal surfaces again and is observed. The dive time of a sighted marine mammal is a central consideration whenever mitigation measures depend on visual observation. For some medium-sized and large cetaceans, the proposed 30-minute pause may be inadequate, sometimes markedly so. Beaked and sperm whales, in particular, can remain submerged for periods far exceeding 30 minutes. Blainville's and Cuvier's beaked whales dive to considerable depths (> 1,400 m) and can remain submerged for more than 80 minutes (Baird et al. 2008). The grand mean dive duration for those species of beaked whales during foraging dives is approximately 60 minutes (51.3 and 64.5 minutes for Blainville's and Cuvier's beaked whales, respectively; Baird pers. comm.). Sperm whales also dive to great depths and can remain submerged for up to 55 minutes (Drouot et al. 2004), with a grand mean dive time of approximately 45 minutes (Watwood et al. 2006). If they continue foraging in the same area as a stationary source and that source is turned on after only 30 minutes, then beaked whales and sperm whales could be exposed to sound levels sufficient to cause Level A harassment. In addition, lookouts may not detect marine mammals each time they return to the surface, especially cryptic species such as beaked whales, which are difficult to detect even under ideal conditions. Barlow (1999) found that "[a]ccounting for both submerged animals and animals that are otherwise	modeling and the development of mitigation measures. This issue was also discussed in Section 5.3.1.2.4.1 (Detection Probabilities of Marine Mammals in the Study Area) and 5.3.2.1.1.1 (Low-Frequency and Hull Mounted Mid-Frequency Active Sonar) of the EIS/OEIS. As described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, a 30-minute wait period more than covers the average dive times of most marine mammal species but may not be sufficient for some deep-diving marine mammal species or for sea turtles. The intention of the mitigation is to reduce the potential for injury to marine mammals. As presented in Section 3.4.4.1.1 (Range to Effects) and Table 3.4-10, for mid-frequency cetaceans such as deep diving sperm whales and beaked whales the PTS (injury; Level A harassment) range from even the SQS 53C sonar is only approximately 10 meters and therefore all stationary sources which are all much less powerful would require a sperm whale or beaked whale to be much closer to the source. As described in Section 3.4.3.2, Marine Mammal Avoidance of Sound Exposures, there are many activities for which it is unlikely a marine mammal will remain close enough to those activities for a Level A exposure to occur. The Navy does not expect that mitigation will eliminate all potential effects, but has proposed measures that are effective, practical, and safe to implement, and that do not impact the readiness objective underlying the purpose for the activity in the first place. The Navy is aware that Lookouts may not detect a marine mammal each time it surfaces, however, note that as presented Section 3.4.3.3 (Implementing Mitigation to Reduce Sound Exposures), line transect marine mammal survey protocols and the detection opportunities possible for Navy Lookouts on ships and other platforms involved in a training scenario are not directly comparable. Additionally, a mitigation based on identification of "deep-diving species" would be impracticable in any case given that species identification is difficult even for experts. For these reasons, Navy will continue to use the mitigation measures developed in coordination with NMFS, and (as described in Section 5.2.2) based upon two principles: (1) mitigations will be effective at reducing potential impacts on the resource; and (2) from a military perspective, the mitigations are practical to implement, and personnel

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	missed by the observers in excellent survey conditions, only 23 percent of Cuvier's beaked whales and 45 percent of Mesoplodon beaked whales are estimated to be seen on ship surveys if they are located directly on the survey trackline." Therefore, after a shutdown, the MMC recommends that the Navy use a second clearance time category of 60 minutes for deep-diving species (i.e., beaked whales and sperm whales) if the animal is not observed to have left the mitigation zone.	safety and readiness will not be impacted. Any wait period greater than 30 minutes would result in an unacceptable operational impact on readiness.
MMC - 5	• in deriving the take estimates for Level A harassment and mortality for mine neutralization activities in which divers use time-delay firing devices, (1) estimate the takes based on the possibility that marine mammals wuld be present in the mitigation zones when the explosives detonate and on updated, more realistic swim speeds and (2) incorporate those revised estimates into its application for a letter of authorization; **Rationale** For underwater detonations that involve time-delay firing devices, the Navy proposed to use a 915-m mitigation zone, which is smaller than the 1,326-m zone currently used. The current zone was based on a 20-lb net explosive weight charge, a time delay to detonation of 10 minutes, an average swim speed for dolphins of 3 knots, and an added buffer to account for marine mammals that may be transiting at speeds faster than the average. Although the MMC has commented on this matter in numerous letlers and continues to believe that the use of 3 knots as an average swim speed is inaccurate and inadequate (see Au and Perryman 1982, Lockyer and Morris 1987, Mate et al. 1995, Ridoux et al. 1997, Rohr et al. 1998, Rohr and Fish 2004), it acknowledges that the procedure provides at least some protection for marine mammals that could swim into the mitigation zone after the charge is set. However, the Navy has proposed to decrease the number of lookouts currently used for mine neutralization	The principles of time-delay firing device mitigation are similar to those contained within the 2011 VACAPES Letter of Authorization. As described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) for time delay activities, the mitigation zone is 1,000 yd. for all charge sizes (5, 10, and 20 lb. charges) and for a maximum time-delay of 10 min. The mitigation zone takes into account a portion of the distance that a marine mammal could potentially travel during the time delay. However, the mitigation zone was set at 1,000 yd. because that is the maximum distance that Lookouts in two small boats can realistically observe. The use of more than two boats for observation during this activity presents an unacceptable impact to readiness due to limited personnel resources. If a swim speed of 3 knots (101 yd./min.) (a nominal average for a delphinid in this area) is considered, the 1,000 yd. mitigation zone results in coverage of the potential range to mortality for all charges, including up to a 9 min. time delay. Furthermore, the mitigation zone covers the potential range to injury for 5 lb. charges, including up to a 6 min. time delay, and for 10 lb. and 20 lb. charges, including up to a 5 min. time delay. The 3 knot swim speed, therefore, was a consideration, but not the only determining factor in the development of the time delay mitigation zones; therefore, considering different swim speeds would not result in a change to or expansion of the mitigation zone size for time delay activities. The Navy asserts that the 1,000 yd. time delay zone is both practical and protective. The proposed mitigation zone covers the entire predicted maximum range to PTS as well as a portion of the estimated swim speed distance. Due to practicality of implementation and impact on the effectiveness of the military readiness activity, the proposed mitigation zone represents the maximum distance that Lookouts on small boats can adequately observe

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	activities using diver-placed time-delay firing devices, because it believes that the measure is impractical to implement and is currently resulting in an unacceptable impact on military readiness. In the HSTT FEIS, the Navy stated that the use of more than two boats for observation during those activities presents an unacceptable impact to readiness due to limited personnel resources. It also indicated that the reduction in the number of lookouts caused a corresponding decrease in the size of the mitigation zone to 915 m, because that is the maximum distance that lookouts in two small boats can observe realistically. As previously noted, in the current DEIS, the Navy did not provide the ranges to the various thresholds for mine neutralization activities that utilize time-delay firing devices (lack of Bin E-6 in Table 3.4-19), limiting the MMC's and public's ability to evaluate the proposed 915-m mitigation zone. However, in the HSTT FEIS, the Navy did indicate that the 915-m mitigation zone would cover the range to mortality for all charge sizes (up to 20 lbs) for up to the 9-min delay, assuming a nominal swim speed of 3 knots. In that FEIS, the Navy asserted that the 915 m mitigation zone is both practical and protective. The MMC does not agree that those measures arc sufficiently protective. Accordingly, because the Navy has (1) never implemented the MMC's recommendation to adjust the size of the mitigation zone based on a more accurate marine mammal swim speed to provide adequate protection and to justify this measure as mitigation and (2) reduced the size of the mitigation zone for the DEIS, the MMC believes that the Navy should include all model-estimated takes for Level A harassment and mortality for mine neutralization activities in which divers use time-delay firing devices and in which marine mammals could be present in those zones when the explosives detonate. Therefore, the MMC recommends that, in deriving the take estimates for Level A harassment and mortality for mine neutralization activities in which divers use time-delay firing devices, the Navy (1) estimate those takes	given the number of personnel who will be involved. Takes that cannot be avoided through mitigation are considered in the MMPA permitting process. Species-specific identification of marine mammals is not a Lookout requirement; therefore, a single activity-specific waiting time is needed between species. For mine neutralization activities using time-delay devices, the estimated exposures (takes) are derived using realistic swim speed parameters determined in consultation with NMFS scientists. Navy disagrees with the suggestion by MMC to eliminate the step in the analysis that reduced raw number counts from the preliminary modeling by accounting for likely animal behavior and the reductions possible by the implementation of mitigation given it is contrary to the overall effort to provide the most realistic estimate of impacts possible. Please see Table 5.4-1 and Section 5.3.1.2.2.5, Mine Neutralization Activities Using Diver-Placed Time-Delay Firing Devices, for details on this specific activity and Section 5.3.4, (Mitigations Measures Considered But Eliminated), for a detailed discussion regarding the analysis of mitigation measures. The Navy acknowledges that MMC continues to believe that the use of 3 knots as an average swim speed is inaccurate and inadequate. Please see Table 3.4-19 for the approximate range to effects for the explosive bins. As is evident on the table, even for Bin E7 (60 lb. NEW; a higher NEW than E6) there is no potential for injury even for the longest range involving HF Cetaceans occurring outside the 915 m (1,000 yd.) mitigation zone. Navy notes the MMC's recommendation to NMFS. Please see Section 5.3.4, Mitigation Measures Considered But Eliminated, for a detailed discussion regarding the analysis of mitigation measures and specifically Section 5.3.1.2.2.5, Mine Neutralization Activities Using Diver-Placed Time-Delay Firing Devices. Additionally, in a review of the modeling results for the specific activity of concern (mine neutralization), there were no model predicted Level A or Level B harassments resulting in the take of any species in the MITT Study Area.

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	based on the possibility that marine mammals could be present in the mitigation zones when the explosives detonate and on updated, more realistic swim speeds and (2) incorporate those revised estimates into its letter of authorization application.	
	• (1) use the total numbers of model-estimated Level A harassment and mortality takes rather than reducing the estimated numbers of Level A harassment and mortality takes based on the Navy's proposed post-model analysis and (2) incorporate those take estimates into its application for a letter of authorization; **Request for Level A harassment and mortality takes** The Navy proposed additional post-model analysis of acoustic and explosive effects to include (1) animal avoidance of repeated sound exposures, (2) sensitive species avoidance of areas of activity before a sound source or explosive is used, and (3) effective implementation of mitigation measures. That analysis effectively reduced the model-estimated numbers of Level A harassment (i.e., PTS and injury) and mortality takes. The Navy assumed that marine mammals likely would avoid repeated high level exposures to a sound source that could result in injuries (i.e., PTS). It therefore adjusted its estimated numbers of takes to account for marine mammals swimming away from a sonar or other active source and away from multiple explosions to avoid repeated high-level sound exposures. The Navy also assumed that beaked whales would avoid certain training and testing activity areas because of high levels of vessel or aircraft traffic before those activities. For those types of activities, the Navy appears to have reduced the model-estimated takes from Level A harassment (i.e., PTS) to Level B harassment (i.e., TTS) during use of sonar and other active acoustic sources and from mortality to Level A harassment (i.e., injury) during use of explosive sources. The	The military believes that the post-modeling analysis is an effective method for quantifying the implementation of mitigation measures to reduce impacts on marine mammals, and that the resulting exposure estimates are, nevertheless, a conservative estimate of impacts on marine mammals from the Proposed Action. See Section 3.4.3.2 (Marine Mammal Avoidance of Sound Exposures) as presented in the EIS/OEIS for the discussion of the science regarding the avoidance of sound sources by marine mammals. In addition, the technical report, Post-Model Quantitative Analysis of Animal Avoidance Behavior and Mitigation Effectiveness for the Mariana Islands Training and Testing, goes into detail on how the avoidance and mitigation factors were used and provides scientific support from peer-reviewed research. The Navy analysis does not indicate nor is it expected that marine mammals would abandon important habitat on a long-term or even permanent basis. As presented in Section 3.4.5.2 (Summary of Observations During Previous Navy Activities), the information gathered to date including research, monitoring before, during, and after training and testing events across the Navy since 2006, has resulted in the assessment that it is unlikely there will be impacts on populations of marine mammals (such as whales, dolphins and porpoise) having any long-term consequences as a result of the proposed continuation of training and testing in the ocean areas historically used by the Navy including the Study Area. The Navy reduced some (not all) predicted mortality and PTS exposures based on the potential for marine mammals to be detected and mitigation implemented. Given this potential, and not taking into account some possible reduction in mortality and Level A exposures, would be to provide a less realistic, overestimation of possible exposures as if there were no mitigation measures implemented. The

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	Commission recognizes that, depending on conditions, marine mammals may avoid areas of excessive sound or activity. Indeed, one of the concerns regarding sound-related disturbance is that it causes marine mammals to abandon important habitat on a long-term or even permanent basis. That being said, the MMC knows of no scientifically established basis for predicting the extent to which marine mammals will abandon their habitat based on the presence of vessels or aircraft. That would be essential information for adjusting the estimated numbers of takes. As an example, the Navy indicated that beaked whales that were model-estimated to be within range of the mortality threshold were assumed to avoid the activity for missile exercises (air-to- surface; see Table 3.4-20). But in Chapter 5 of the DEIS, the Navy indicated that missile exercises involve the aircraft firing munitions at a target location typically up to 27 km away (and infrequently at ranges up to 138 km away). When an aircraft is conducting the exercise, it can travel close to the intended impact area so that it can be visually observed. However, the Navy indicated that there is a chance that animals could enter the impact area after the visual observations have been completed and the activity has commenced. The MMC understands that to mean the aircraft clears the zone around the target and then travels to its firing location to commence the activity. Therefore, the MMC is unsure why the Navy would reduce any mortality or Level A harassment take estimates based on mitigation measures that are followed by a time lag before the activities actually commence, which could allow for the animals to re-enter the mitigation zone around the target. The Navy also indicated that its post-model analysis considered the potential for highly effective mitigation to prevent Level A harassment from exposure to sonar and other active acoustic sources and Level A harassment and mortality from exposure to explosive sources. Clearly, the purpose of	period of time between clearing the impact area of any non-participants or marine mammals and weapons release is on the order of minutes, making it highly unlikely that a marine mammal would enter the mitigation zone. The assignment of mitigation effectiveness scores and the appropriateness of consideration of sightability using detection probability, g(0), when assessing the mitigation in the quantitative analysis of acoustic impacts is discussed in the MITT EIS/OEIS Section 3.4.3.3, Implementing Mitigation to Reduce Sound Exposures. Additionally, the activity category, mitigation zone size, and number of Lookouts are provided in the MITT EIS/OEIS Section 5 Tables 5.3-2 and 5.4-1. In addition to the information already contained within the MITT EIS/OEIS, the Navy has prepared a technical report which describes the process for the post modeling analysis in further detail. This report is available under the "Supporting Technical Documents" tab at www.mitt-eis.com. There is also information on visual detection leading to the implementation of mitigation in the annual exercise reports provided to NMFS and briefed annually to NMFS and the Marine Mammal Commission. These annual exercise reports have been made available and can be found at http://www.navymarinespeciesmonitoring.us/ in addition to the NMFS Office of Protected Resources website. For more information on how mitigation is implemented, see the MITT EIS/OEIS Section 5 and specifically Table 5.4-1. As presented in the EIS/OEIS Section 3.4.3.1.5.4, Model Assumptions and Limitations, the Navy recognizes that there are assumptions and limitations involved in modeling involving the level of complexity intended by the acoustic analysis presented in the EIS/OEIS. While the Navy will continue to incorporate best available science and modeling methods into future versions of the Navy Acoustic Effects Model, it was necessary to perform post-model analysis to account for mitigation and avoidance behavior. The Navy's Lookout effectiveness is discussed in Section 5.3.1.2.4, Effectiveness Assessment for Lookouts. The Navy believes consideration of marine mammal sightability and activity-specific mitigation effectiveness in its quantitative analysis is appropriate in order to provide decision makers a reasonable assessment of potential impacts under each alternative. A comprehensive discussion of the Navy's

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	mitigation measures is to reduce the number and severity of takes. However, the effectiveness of the Navy's mitigation measures has not been demonstrated and remains uncertain. This is an issue that the MMC has raised many times in the past, and the Navy has recognized the need to assess the effectiveness of its mitigation measures in its Integrated Comprehensive Monitoring Program and even in this DEIS, which states that although the use of lookouts is expected to increase the likelihood that marine species would be detected at the water's surface, it is unlikely that using those lookouts would help avoid impacts to all species because of the inherent limits of visual monitoring. According to data in the monitoring reports mentioned previously (Department of the Navy 2010, 2012), the effectiveness of the lookouts has yet to be proven. However, the Navy has proposed to adjust its take estimates based on both mitigation effectiveness scores and g(0)-the probability that an animal on a vessel's or aircraft's track line will be detected. According to its proposed approach, for each species the Navy would multiply a mitigation effectiveness score and a g(0) to estimate the percentage of the subject species that would be observed by lookouts and for which mitigation would be implemented, thus reducing the estimated numbers of marine mammal takes for Level A harassment and mortality (explosives only). The Navy then would reduce the estimated numbers of Level A harassment (i.e., PTS) and mortality takes for that species to Level B (i.e., TIS) or Level A harassment (i.e., injury) takes, respectively. To implement that approach, the Navy assigned mitigation effectiveness scores of- 1 if the entire mitigation zone can be observed visually on a continuous basis based on the surveillance platform(s), number of lookouts, and size of the range to effects zone;	quantitative analysis of acoustic impacts, including the post-model analysis to account for mitigation and avoidance, is presented in the Navy's Request for Letter of Authorization under the MMPA submitted to NMFS (77 FR 60679). [1] Thank you for the correction, but Navy is not sure where the incorrect citation appears in the EIS/OEIS since the g(0) tables (Table 3.4-8 and 5.3-1) presented in the EIS/OEIS correctly reference Carretta et al. 2000.

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	0.5 if (1) over half of the mitigation zone can be observed visually on a continuous basis, (2) there is one or more of the scenarios within the activity for which the mitigation zone cannot be observed visually on a continuous basis (but the range to effects zone can be observed visually for the majority of the scenarios), or (3) the mitigation zone can be continuously observed, but the activity may occur at night; or N/A if (1) less than half of the mitigation zone can be observed visually on a continuous basis or (2) the mitigation zone cannot be observed visually on a continuous basis during most of the scenarios within the activity due to the type of surveillance platform(s), number of lookouts, and size of the mitigation zone. The difficulty with this approach is in determining the appropriate adjustment factors. Again, the information needed to judge effectiveness has not been made available. In addition, the Navy has not provided the criteria (i.e., the numbers and types of surveillance platforms, numbers of lookouts, and sizes of the respective zones) needed to elicit the three mitigation effectiveness scores. Moreover, the coverage afforded by the mitigation measures is not adequate to ensure that those measures will be effective. That is, measures of effort (i.e., numbers and types of surveillance platforms, numbers of lookouts, and sizes of mitigation zones) are not necessarily measures of, or even linked to, effectiveness. The Navy also has not yet demonstrated that such measures of effort arc synonymous with effectiveness nor has it demonstrated the effectiveness of the visual monitoring measures, as discussed previously. Therefore, the use of those scores to reduce the numbers of takes is unsubstantiated. The information that the Navy provided in Chapter 5 of the DEIS regarding the effectiveness of various mitigation measures doesn't necessarily comport with its determination	

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	of mitigation effectiveness scores. For example, the Navy indicated that small- and medium-caliber gunnery exercises could involve a participating vessel or aircraft firing munitions at a target location that may be up to 3.7 km away (although it also indicated that the platforms typically are much closer). The MMC is unclear how the Navy would implement a shutdown or delay if the mitigation zone is 183 m and is being observed from up to 3.7 km away. It also stated that large vessels or aircraft platforms would provide a more effective observation platform for lookouts than small boats, but it is highly unlikely that anything but a whale blow or large pod of dolphins will be seen at distances around 3.7 km. The Navy then used the highest effectiveness score of 1 for lookouts to observe mid- and low-frequency cetaceans (except beaked whales) from aircraft, large vessels, and small boats (Table 3.4-21). Those effectiveness scores again seem to be measures of effort rather than of true effectiveness. In addition, the Navy is inconsistent in its use of the terms "range to effects zone" and "mitigation zone," which are not the same (see Table 5.3-2 of the DEIS). More importantly, some of the mitigation zones may be smaller than the estimated range to effects zones. For example, the Navy proposed a mitigation zone of 183 m after a 10 dB reduction in power for its most powerful active acoustic sources (e.g., Bin MF1) and assumed that marine mammals would leave the area near the sound source after the first 3-4 pings. However, the Navy did not present data on the range to onset PTS for more than 1 ping. It also is unclear how the Navy evaluated sources that have a typical duty cycle of several pings per minute (i.e., dipping sonar), as the range to onset PTS for those sources were based on 1 ping as well (Table 5.3-2). Furthermore, the Navy provided both the average and maximum ranges to PTS in Table 5.3-2 but did not clarify which range to effects zone it considered for the mitigation effectiveness scores. For small- and medium-caliber gunnery exercises that involve a participating vessel, those zones range	

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	from 76 m for the average range to effects zone to 167 m for the maximum range to effects zone with an overall mitigation zone of 183 m. Without the relevant information, mitigation based on those zones cannot be evaluated fully or deemed effective and assigning mitigation effectiveness scores is inappropriate. The Navy used numerous references to estimate species-specific g(0)s. Those sources were based on both vessel- and aircraft-based scientific surveys of marine mammals. It also indicated that various factors are involved in estimating g(0), including sightability and detectability of the animal (e.g., species-specific behavior and appearance, school size, blow characteristics, dive characteristics, and dive interval), viewing conditions (e.g., sea state, wind speed, wind direction, sea swell, and glare), the observer's ability to detect animals (e.g., experience, fatigue, and concentration), and platform characteristics (e.g., pitch, roll, yaw, speed, and height above water). In the DEIS, the Navy noted that due to the various detection probabilities, levels of experience, and dependence on sighting conditions, lookouts would not always be effective at avoiding impacts on all species. Yet it based its g(0) estimates on data from seasoned researchers conducting scientific surveys, not on data from Navy lookouts whose effectiveness as observers has yet to be determined. The MMC recommended earlier in this letter that the Navy supplement its mitigation and monitoring measures because the observer effectiveness study has yet to be completed or reviewed. It therefore would be inappropriate for the Navy to reduce the numbers of takes based on the proposed post-analysis approach because, as the Navy has described its approach, it does not address the issue of observer effectiveness in developing mitigation effectiveness scores or g(0) values. Further, the Navy used g(0) values from surveys conducted in areas off the west coast of the United States during Beaufort	

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	sea states of 0-5 (Barlow and Forney 2007, Barlow 2010[1]), but sea states in MITT can range from 0-7 with heavy winds and/ or large swells up to 3 m in height (Ligon et al. 2010, Oleson and Hill 2010, Fulling et al. 2011, HDR 2011, Hill et al. 2011, HDR 2012). Therefore, the MMC believes it is not appropriate to use g(0) values from areas off the west coast of the United States as surrogates for g(0) values in MITT. Moreover, Fulling et al. (2011) indicated that failure to detect or verify species identification of the more cryptic cetaceans (Kogia spp., minke whales, and beaked whales) was not surprising as more than half of the survey was conducted in Beaufort sea states greater than 4 and sighting those species is difficult even when sighting conditions are optimal (sea state less than 2). Less than optimal sighting conditions in Guam and the CNMI have contributed to the low sighting rate of marine mammals during research surveys and also would contribute to a low sighting rate of Navy lookouts, thus diminishing their effectiveness. Lastly, the Navy used greater g(0) values for vessel than aircraft platforms. The assumption that vessel-based observers are more effective may be true for areas off the west coast of the United States, but Mobley (2007) observed numerous cryptic species (Kogia spp. and beaked whales) during aerial surveys in areas more relevant to the DEIS that were not observed during the Fulling et al. (2011) or the HDR (2011) vessel surveys. Again, this difference was likely due to the better sighting conditions during the aerial surveys in Guam and the CNMI. Thus, the g(0) values from the Barlow and Forney (2007) and Barlow (2010) are not directly applicable to MITT. Based on all of these concerns, the MMC recommends that the Navy (1) use the total numbers of model-estimated Level A harassment and mortality takes rather than reducing the estimated numbers of Level A harassment and mortality takes based on the Navy's proposed post-model analysis and (2) incorporate those take estimates into its letter of authorization application. [1] The Navy also indicated it used Carretta et al. 2010 as a	

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	source for g(0) values in MITT. However, that document is the 2009 stock assessment report for the Pacific region and does not contain g(0) values for species that would occur in MITT-g(0) values were provided for the harbor porpoise. which does not occur in MITT.	
MMC - 6	• revise its DEIS to (1) include in its cumulative impacts analysis all potential risk factors, including those that are deemed individually minor but could be significant when considered collectively and (2) provide sufficient details to allow the reader to evaluate the utility of the Navy's conceptual framework for its cumulative impacts analysis. **Rationale** **Cumulative impacts** The Navy's analysis of cumulative impacts on marine mammals extends the evaluations in Chapter 3 of individual and multiple sound-producing activities under the various alternatives. The Navy's analytical framework is commendable, but its description and use of the framework in the DEIS falls short in several important respects. First, the DEIS does not include the detailed information needed to assess the reliability of the framework. Without that information, the framework is a conceptual model only and the reader does not have sufficient information to judge its practical utility and, therefore, the soundness of the Navy's decision-making based on that model. Second, the DEIS indicates that the Navy omitted from its overall cumulative impact analysis stressors or activities found to have a negligible impact on an individual species. Doing so runs counter to the idea behind a cumulative impact assessment. CEQ's regulations for implementing the National Environmental Policy Act point out that "[c]Cumulative	Chapter 4 (Cumulative Impacts) has been revised to include a discussion on potential synergistic impacts from multiple stressors that separately are not anticipated to result in significant impacts. Please refer to Appendix H (Biological Resource Methods) for detailed information regarding the conceptual framework. At this time there is insufficient science to assess the reliability of the conceptual framework and, the Navy's decision making process does not rely on an output of this conceptual framework. For marine mammals in particular, see Section 3.4.3.1.2 (Analysis Background and Framework), Section 3.4.3.1.3 (Long-Term Consequences to the Individual and the Population), and Section 3.4.5 (Summary of Impacts on Marine Mammals) which provide the basis for Navy's decision making in regard to these resources. Of most importance in this regard is Section 3.4.5.2 (Summary of Observations During Previous Navy Activities), summarizes the empirical data gathered intensively since 2006 indicating there is no direct evidence that routine Navy training and testing, spanning decades has negatively impacted marine mammal populations at any Navy Range Complex. Regarding the second issue raised by the comment, as stated in Section 4.2.2 (Identify Appropriate Level of Analysis for Each Resource), in accordance with Council on Environmental Quality guidance, the cumulative impacts analysis focused on impacts that are "truly meaningful." This was accomplished by reviewing the direct and indirect impacts that could occur on each resource under each alternative. Key factors considered were the current status and sensitivity of the resource and the intensity, duration, and spatial extent of the impacts of each potential stressor. In general, long-term rather than short-term impacts and widespread rather than localized impacts were considered more likely to contribute to cumulative impacts. Those impacts on a

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	impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). In essence, the approach used in the DEIS does not support a cumulative impacts analysis. To address these fundamental concerns, the MMC recommends that the Navy revise its DEIS to (1) include in its cumulative impacts analysis all potential risk factors, including those that are deemed individually minor but could be significant when considered collectively and (2) provide sufficient details to allow the reader to evaluate the utility of the Navy's conceptual framework for its cumulative impacts analysis. The MMC appreciates the opportunity to provide comments on the Navy's DEIS. Please contact me if you have questions concerning the MMC's recommendations or rationale.	resource that were considered to be negligible were not considered further in the analysis. The level of analysis for each resource was commensurate with the intensity of the impacts identified. For example, stressors that were shown to have no impact on an individual level, such as sound sources above the hearing of any marine mammal, can have no impact at a cumulative level. For those stressors that may have an impact and collectively have a cumulative impact, detailed discussions were presented in Section 4.4.4 (Marine Mammals). Again however, Section 3.4.5.2 (Summary of Observations During Previous Navy Activities) that summarizes the empirical data gathered intensively over eight years where Navy has been intensively training and testing indicates there has been no identifiable cumulative impact on marine mammals as a result of ongoing routine Navy training and testing.
Office of the Mayor and Vice Mayor Barrigada (OMVM – 1)	Gentlemen: Hafa Adai and Greetings from Guam. Enclosed for your review is a copy of our position statement addressing the Mariana Islands Training and Testing (MITT) Draft Environmental Impact Statement/Oversea Environmental Impact Statement (EIS/OEIS). Sinseramente! JUNE U. BLAS JESSIE P. BAUTISTA Mayor Vice Mayor Enclosure: P.O. Box 786, Hagatiia, Guam 96932 *Tel: (671) 734-3737/3859 * Fax: (671) 734-1988 • Email: bmoadmin@teleguam.net	Thank you for your participation in the NEPA process. Your comment has been broken down into component parts to ensure that all comments provided in your letter are addressed. As a result, this portion of the comment does not contain a specific question or inquiry related to the EIS/OEIS. Therefore, no response is provided.

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	POSITION STATEMENT OF JUNE U. BLAS, MAYOR JESSIE P. BAUTISTA, VICE MAYOR BARRIGADA, GUAM ON THE MARIANA ISLANDS TRAINING AND TESTING (MITT) DRAFT ENVIRONMENTAL IMPACT STATEMENT/OVERSEA ENVIRONMENTAL IMPACT STATEMENT (EIS/OEIS) NOVEMBER 12, 2013 Mariana Islands Training and Testing (MITT) Draft Environmental Impact Statement/Oversea Environmental Impact Statement (EIS/OEIS) Maps: Naval Base Guam 5 DoD Landownership on Guam 8 Gentlemen: This is to inform you that Vice Mayor Jessie P. Bautista and I, together with the Barrigada Municipal Planning Council have reservations and concerns relating to the Mariana Islands Training and Testing (MITT) Draft Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS). At the onset, let me offer a sincere Dangkulo na Si Yu 'us Ma 'ase for the opportunity to express our concerns regarding	

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	U.S. military buildup on Guam and the challenges facing our community. Mr. Chairman, earlier this year, on July 21 , 2013, people of Guam, especially our manamkos, commemorated the 69th Anniversary of Guam's liberation. Liberation day as you well know, symbolizes the hopes of those who survived the atrocities of war and enemy occupation seeking closure and final peace of mind. This coming December, they will celebrate the 70th Anniversary of the December 8th bombardment and stoppage of the Mass honoring Santa Marian Kamalen. **Partnership with the Department of Defense** In this regard, the Vice Mayor and I seek a partnership with the Military and the Department of Defense together with the government of Guam to foster a successful building of U.S. Armed Forces on Guam. We are asking that this partnership take the historic initiative to the next level of the preparation process and secure the financial commitments needed. Since the announcement of the Marine relocation to our island the government of Guam and the U.S. Military, through the Department of Defense have built a strong relationship based on constructive dialogue. We appreciate this progress, as we have a duty to represent the best interests of the people of Guam, many of whom are U.S. servicemen and women and their dependents who call Guam home. When we first viewed the constructed timetable for the buildup and the even-shorter preparation period before the Marine forces arrived compelled me to question whether concrete commitments for funding and support will come from the federal government. Although some say that our island is poised for	

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	unprecedented economic and social growth, triggered by the buildup, we remain paralyzed by stunted and inadequate capacity. As we all know, the government of Guam lacks the financial footing to make the physical and social improvements needed to sustain a substantial increase in our population. While we are eager to host the most advanced military power in the world, we are increasingly concerned that our capacity is inadequate for the buildup of military infrastructure, the smooth transition of troops, the social livelihood of both civilians and military and the sustainability of economic growth. We propose concrete mutual commitments, which build upon the most commendable and shared theme between the U.S. military and the government of Guam - that "what is good for Guam is good for the military. " While there has been extensive collaboration on what is needed to prepare for the next decade, we can all benefit from the financial commitment of the U.S. military and the federal government to provide what is needed. For all intents and purposes, we agree that our physical infrastructure is for the benefit of both the civilian and military communities. That is why it is only right we get the Defense Department's financial support to help us build what is needed for all of us. This partnership must also realize the need to absorb the social impact of this buildup so both the civilian and military communities have adequate law enforcement, education and health care support. **Build up on Guam** U.S. national interests and treaty commitments require strengthening of U.S. military capabilities in the Western Pacific. U.S. Forces must be positioned to maintain regional	

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	stability, ensure flexibility to respond to regional threats, project power throughout the region, defend our assets as well as those of our allies, and provide forces to respond to global contingencies. The relocation of III Marine Expeditionary Force personnel from Okinawa to Guam under U.S.-Japan Alliance Transformation and Realignment is part of a broader realignment that, when implemented, will strengthen our regional posture, deter potential aggressors, and provide capabilities that can be flexibly deployed in contingencies, which are essential for the Defense of Japan and for peace and security in the region. The Marines and their dependents leaving Japan will reduce the footprint of U.S. forces in Okinawa. This will facilitate consolidation of U.S. bases on Okinawa to allow additional land returns in Japan. What we find disturbing with these plans is the obvious exclusion of funding that will be made available to build, enhance, or improve Guam's facilities and infrastructure to support these move. **Land Control** In Guam, the Navy has control of approximately 28 square miles of land in noncontiguous properties on Guam. There are five Navy annexes: (1) Main Base (which includes Apra Harbor Naval Complex and Main Base/Polaris Point); (2) Naval Base Guam Munitions Site; (3) Hospital Annex/Nimitz Hill; (4) Naval Base Guam Telecommunications Site; and (5) Naval Base Guam Barrigada. On the other hand, Andersen Air Force Base, one of the largest U.S. Air Force airfields, is located in the northern	

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	portion of the island of Guam. Andersen Air Force Base includes the main base and Northwest Field; Andersen South; and Andersen Barrigada Annex. **Naval Base Guam, Barrigada** Activities carried out at Naval Base Guam, Barrigada, require large amounts of cleared, maintained land for operation. Vegetation in the area include tangantangan scrub, limestone forest, disturbed limestone forest, shrub/grassland, and wetlands. According to the MITT study area, the disturbance of land has led to an increase of nonnative and invasive species. The degree of disturbance within the annex results in portions of the remaining forested plant communities being highly modified and dominated by tangantangan and African tulip. Furthermore, the study indicates that twenty (20) tree species were documented on transects quantified during the 2008 vegetation surveys performed on Naval Base Guam Barrigada by the U.S. Department of the Navy in 2013. The most commonly observed trees included nunu, pago, and fagot. All three species are native to Guam. Paipai, which is also native, is a dominant understory species within the forests on Naval Base Guam Barrigada. Common introduced species on Naval Base Guam Barrigada include custard apple, limeberry, and tangantangan. Native species have a combined relative density of approximately 77 percent, far exceeding the relative density of introduced species for the survey transects at Naval Base Guam Barrigada based on the U.S. Department of the Navy 2013 study. **Cultural Resources**	

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	Table 3.11-1: Cultural Resources Eligible for and Listed in the National Register of Historic Places, and National Historic Landmarks, Guam (continued) Figure 2.1-8: Naval Base Guam Barrigada **Challenges** The Department of Defense and the government of Guam face several significant challenges associated with the proposed military buildup on Guam. The Defense Department's challenges include obtaining adequate funding and meeting operational needs, such as mobility support and training capabilities. There are also challenges in addressing the effects of military and civilian growth on Guam's community and civilian infrastructure. For example, according to the Department of Defense and government of Guam officials, Guam's highways may be unable to bear the increase in traffic associated with the military buildup, its electrical system may not be adequate to deliver the additional energy needed, its water and wastewater treatment systems are already near capacity, and its solid waste facilities face capacity and environmental challenges even without the additional burden associated with the projected increase in U.S. forces and their dependents. The government of Guam's efforts to plan to meet infrastructure challenges caused by the buildup of military forces and facilities are in various stages, and existing uncertainties associated with the military buildup contribute to the difficulties Guam officials face in developing precise plans. These challenges are somewhat analogous to challenges communities around the continental U.S. growth bases face.	

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	Government of Guam officials recognize that the island's infrastructure is inadequate to meet the projected demand; however, funding sources are uncertain. Officials on the other hand are uncertain as to whether and to what extent the government of Guam will be able to obtain financial assistance for projected infrastructure demands due to the military buildup. In September 2007, GAO reported that most communities experiencing civilian and military population growth at Army installations in the continental United States will likely incur costs to provide adequate schools, transportation, and other infrastructure improvements, and many of these communities are also seeking federal and state assistance. As initiatives for expanding the U.S. military presence on Guam began to emerge, the Senate Appropriations Committee noted the ambitiousness of the military construction program and the need for a well-developed master plan to efficiently use the available land and infrastructure. However, in July 2006, the same committee recommended deferral of two military construction projects at Andersen Air Force Base that were included in the President's budget request until such time as they can be incorporated into a master plan for Guam and viewed in that context. Furthermore, the committee directed the Secretary of Defense to submit to the appropriation committees a master plan for Guam by December 29, 2006, and a report accounting for the United States' share of this construction program to project-level detail and the year in which each project is expected to be funded. [S. Rep. No. 109-286, at 15 (2006]. The Senate Committee also directed the General Accounting Office to review the Department of Defense's master planning effort for Guam as part of its annual review of DOD's overseas	

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	master plans. As discussed in our 2007 report, DOD has not issued a Guam master plan for several reasons. First, the required environmental impact statement, which will take at least 3 years to complete according to DOD documents and officials, was initiated on March 7, 2007. [Note: The primary purpose of an environmental impact statement is to serve as an action-forcing device to ensure that the policies and goals defined in the National Environmental Policy Act are infused into the ongoing programs and actions of the federal government. Further, regulations for implementing the act established by the Council on Environmental Quality specify that to the fullest extent possible, agencies shall prepare draft environmental impact statements concurrently with and integrated with other environmental impact analyses and related surveys and studies required by the Fish and Wildlife Coordination Act, the National Historic Preservation Act of 1966, the Endangered Species Act of 1973, and other environmental review laws and executive orders. See 40 C.F.R. §1502.25. The results of this environmental impact statement will influence many of the key decisions on the exact location, size, and makeup of the military infrastructure development on Guam. Second, exact size and makeup of the forces to be moved to Guam are not yet identified. Third, DOD officials said that additional time is needed to fully address the challenges related to funding uncertainties, operational requirements, and Guam's economic and infrastructure requirements.	
OMVM - 2	**Concerns** The Municipal Planning Council members pose the following concerns regarding the Mariana Islands Training and Testing (MITT) Draft Environmental Impact Statement/Overseas	The MITT EIS/OEIS analyzes military training and testing activities as described in Chapter 2 (Description of Proposed Action and Alternatives) of the EIS/OEIS. With the exception of a discussion in Chapter 4 (Cumulative Impacts) of the EIS/OEIS, the buildup or relocation of personnel to Guam, development of infrastructure, or construction

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	Environmental Impact Statement (EIS/OEIS): **Infrastructure:** While the MITT Draft EIS/OEIS addresses the planning process for DoD infrastructure. Did the planners take into account the need to work with government of Guam and community to improve civilian infrastructure? It is our opinion that establishing a working Partnership, federal agencies should work closely to identify priority infrastructure improvements and at least match the needs of the government of Guam. **Impact:** We realize that the community will be impacted with personnel commuting to and from their respective bases. We hope that impact to our communities will be addressed through efficient planning, scheduling of work hours, and potential road improvements. These issues should be constantly reviewed to minimize the impact to the local communities. **Traffic Impact:** Traffic impact should not only depend upon the frequency of training that is required. Options should be explored and consideration should be to utilize high density modes of transportation (buses, for example) to transport personnel to the training areas, which would minimize the amount of traffic to the training areas. Every effort should be made to minimize the trucks and heavy equipment impacts onto the public roads. **Impact on Views:** It is our opinion that the main encampment should have barracks, dining facilities, administration buildings, recreation facilities and housing. More importantly, these buildings should be typical for any encampment, similar to what exists at Andersen Air Force Base and Naval Base Guam. **Medical and Dental Facilities and Veterans:** With additional personnel comes the need for additional medical and dental	projects are not within the scope of this EIS/OEIS document. These actions are addressed in the Guam and CNMI Military Relocation (2012 Roadmap Adjustments) Supplemental Environmental Impact Statement (SEIS). Information regarding the CJMT EIS/OEIS can be found at: http://www.guambuildupeis.us/.

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	facilities. Adequate medical facilities should be accounted for to support the influx of military personnel and dependents while at the same time respecting the rights of the veterans who currently use the facilities. We understand that DoD facilities are open to and available for employees and qualified personnel. More importantly, eligible veterans should be able to continue accessing appropriate facilities. **Housing Requirements:** Will all housing be on base or can we expect some personnel and their families to live in the community? Although residing on base will minimize impacts on our infrastructure we anticipate that some personnel and their families will choose to live in our community. Utilizing DoD lands will minimize impact on our community. **Closing** Reports issued by the General Accounting Office have shed a lot of light on the Department of Defense's effort to realign and relocate military forces to Guam. While the reports recognizes that Guam has unique economic and infrastructure requirements that have yet to be addressed, it stressed that without effective partnering, it will be difficult to successfully deal with the concerns. It has been no secret that although there is excitement with the "economic stimulus" the planned military move would provide, also, there is equally a number of concerns as to whether or not Guam has the capacity or capability to deal with the infrastructure demands and quality of life issues the move will bring. It is our concern that appropriate funding be sought to ensure that Guam's concerns are met. We must quickly and cooperatively take the next step forward to ensure that the opportunities from this military buildup and this unprecedented relationship are felt both by the people of	

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	Guam and our new neighbors we welcome with a warm Hafa Adai spirit. As Vice Mayor Bautista and I together with our Planning Council members we have emphasized the need for a working partnership to ensure that the Department of Defense continues with its plans to build up its force structure on Guam, the civilian needs of our island are met and our concerns are addressed. For all intents and purposes, we agree our physical infrastructure is for the benefit of both the civilian and military communities. That is why it is only right we get the Department of Defense's financial support to help us build what is needed for all of us. This partnership must also realize the need to absorb the social impact of this buildup so both the civilian and military communities have adequate law enforcement, education and health care support. These are exciting and historic times we must quickly and cooperatively take the next step forward to ensure that the opportunities from the military buildup and this unprecedented relationship are felt both by the people of Guam and our new neighbors we welcome with a warm *Hafa Adai* spirit. Thank you and *Si Yu 'us Ma 'ase* for your time, and let us remember that what is good for the military is good for Guam.	
Office of Judith T. Won Pat (Speaker of the 32nd Guam Legislature [OoSGL]) - 1	*Håfa Adai:* My name is Judith T. Won Pat, Ed. D. and I am the speaker of the 32nd Guam Legislature. I would like to submit the following comments on the Mariana Islands Testing and Training (MITT) Draft EIS/OEIS: I recommend the "No Action Alternative". The Mariana Islands	Thank you for participating in the NEPA process. As per CEQ interpretation on the “No Action Alternative,” the “no action” is “no change” from the current direction or level of intensity; therefore, the “no action” alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting

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	Range Complex (MIRC) already uses 501,873 nautical miles of ocean and 70,000 nautical miles of airspace for training. The MITT would nearly double DOD's training area to 984,469 square nautical miles. Our islands already provide enough land, air and ocean space for DOD training. It is dangerous to expand this training area without being fully aware of how it will impact our environment and our health. The MITT EIS does not provide important details about when and how often the training and testing exercises will be conducted. It simply states, "number of activities per year", but does not state how long or how often these activities will occur. There are no specific locations or dates of the activities provided, thus, it is difficult to determine exactly what the impacts will be. I suggest that DOD work more closely with the leaders of our islands to assess these impacts and prevent harm. We need to always be aware of the testing that is being done in our islands as it is being done.	military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. The flexibility required by the Navy in conducting realistic training means that some activities' locations require broad definitions. To the level of detail that the activities can be predicted, they are described in Chapter 2 (Description of Proposed Action and Alternatives) of the EIS/OEIS, and specifically in Tables 2.8-1 through 2.8-5. However, additional specifics about the event types (what's involved, typical vessels, length of activity) are presented in Appendix A (Training and Testing Activities Descriptions) of the EIS/OEIS.
OoSGL - 2	The military has been conducting training exercises using "explosives and explosive byproducts, metals, chemicals other than explosives, and other materials" in our islands for decades without transparency. DOD is not forthright about the health impacts on people, who are in such close proximity to the chemicals and explosives being used. For example, DOD still denies having used Agent Orange as an herbicide in the late 1960s, despite the fact that veterans are receiving benefits for Agent Orange exposure on our island. These vets have suffered and many have died from cancer and other terminal illnesses as a result of their exposure to Agent Orange on Guam. Many of our own people suffer from rare diseases and cancers that have been connected to military testing in our region. Thus, as a leader who is very concerned about the health of our people, I urge DOD to work more closely with us so that we are fully aware of the types of training being conducted and the chemicals being used. We need an honest assessment of the health and	The military is committed to protecting the terrestrial and marine environment during the conduct of its training and testing activities, which includes civilians. Chapter 3.13 (Public Health and Safety) includes details regarding Safety and Inspection Procedures for aviation, submarine navigation, surface vessel navigational , sonar, electromagnetic, laser, high-explosive ordnance, and weapons firing and ordnance expenditure safety. Chapter 3.13 (Public Health and Safety) evaluates how and to what degree the activities described in Chapter 2 (Description of Proposed Action and Alternatives) could impact public health and safety. In the section, public health and safety stressors are analyzed. Additional information regarding the Navy's standard operating procedures is provided in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring).

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	environmental risks associated with the testing and training being conducted in the Marianas. The Draft EIS doesn't deeply explore these risks, simply stating, "Impacts on public health and safety would be unlikely because of the Navy's standard operating procedures." I'd like to know more about the Navy's standard operating procedures.	
OoSGL - 3	I am also concerned about the impacts of anti-submarine warfare, electronic warfare, sonar use, and ordnance detonation on populations of marine habitats and animals. In an *Earth Island Journal* article, Michal Jasny, senior policy analyst at the Natural Resources Defense Council, made an interesting point. He stated, ''The Navy's whole approach to the Marianas is shoot first and ask questions later. We know very little about the populations of whales, dolphins, and other marine life around the Marianas. Yet the navy is proceeding with a massive militarization of the islands and surrounding waters. It is grossly irresponsible to proceed in this way." We need a different approach. The MITT EIS states that there will be adverse impacts on many of the endangered turtles and other sea life in our region. For example, the use of sonar training will result in permanent hearing loss for up to 59 whales and dolphins per year. (MITT, Vol. l, p. 3.4-114) This is alarming and needs to be prevented. We have an obligation to ensure that these mammals are not further endangered, or worse, made extinct.	The Navy shares your concern for marine life. The military is committed to protecting the environment during the conduct of its military training and testing activities. The analysis of potential impacts of anti-submarine warfare, electronic warfare, sonar use, and ordnance detonation on marine habitats and populations of animals is provided in detail in individual resources sections (marine habitats, marine invertebrates, sea turtles, seabirds, marine mammals, and fish). Effects from training and testing activities were analyzed in Chapter 3 of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the Draft EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The Navy has invested heavily in marine species monitoring in the Mariana Islands since 2007. This includes implementing a comprehensive marine species monitoring plan where methods such as visual surveys, photoidentification, biopsy sampling, tagging (both marine mammals and sea turtles) and passive acoustic monitoring are used. NMFS, PIFSC has been funded to conduct much of the work for Navy in the region, has given local presentations and encouraged local scientists to become involved. Monitoring reports prepared for the Marianas can be found at www.navymarinespeciesmonitoring.us. The Navy formally consulted with USFWS and NMFS concerning potential impacts of military training and testing activities on all threatened and endangered species within the MITT Study Area. The Navy has updated the Final EIS/OEIS based on the ongoing consultation with NMFS and will incorporate all reasonable and prudent measures, and terms and conditions that are set forth in the Biological Opinion in the Record of Decision. In addition, the Navy requested an authorization

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		for the incidental taking of marine mammals during the conduct of military training and testing activities within the MITT Study Area pursuant to MMPA.
OoSGL - 4	The final concern I'd like to raise comes from our island's fishing community. The Guam Fishermen's Cooperative Association prepared compelling comments that urge DOD to work more closely with our community. They are concerned, as am I, that more testing and training activities in our island will hamper the use of our marine resources and could have negative impacts on marine tour operations. We must work hard to prevent negative impacts on our economy as a result of testing activities. I look forward to strengthening our partnership. We need both Marianas and federal leaders at the table when major decisions like expanding testing and training in our region are being made. All decisions must be win-win, with mutual benefits for both our military and island communities.	The potential effects from military training and testing activities were analyzed in Chapter 3 of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. The military is committed to working with the local community on issues that potentially affect the public, including access to fishing sites. For example, the Navy now allows access to the northern portion of W-517 during activities that occur far from that area in the southern portion of W-517 so that fishers can transit to and fish on White Tuna Banks and other nearby popular fishing sites. Previously, any activities occurring in W-517 would have required closure of the entire warning area regardless of where the activity took place within W-517. The Navy also announces upcoming periods when FDM will not be used for several consecutive days to allow mariners to plan to fish or transit through the danger zone beyond 3 nm from FDM. In addition, as a result of comments received from the public (including the Guam Fisherman's Cooperative), the Navy intends to work with the U.S. Army Corps of Engineers to locate the proposed Offshore Small Arms Training area (as shown in Fig 2.7-1) further to the north to avoid fishing activity.
Office of Senator Frank B. Aguon, Jr. (SenAguon) Guam - 1	*Buenas yan Hafa Adai!* Below are my comments regarding the Marianas Islands Training & Testing Environmental Impact Statement / Overseas Environmental Impact Statement. I understand the need for expanding the military's training ground in support of our Nation's national defense. The	The potential effects from military training and testing activities were analyzed in Chapter 3 of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing

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	concerns I have regarding the MITT (in its current draft state) are primarily the environmental impact - to include the interruption on sea life within the MITT's footprint. Minimum impact on our environment – to include land, sea, and air – whilst conducting the proposed military exercises, is ideal. A plan or program that includes monitoring tools must be in place prior to the start of these exercises conducted within the MITT's established footprint. In addition, a mitigation plan and/or program, with regard to both anticipated and un-anticipated impacts to the environment within the MITT's footprint, must also be established and coordinated with the Government of Guam. Notifications to the general public, the fishing industry, and tourism operations prior to conducting exercises are a necessity for the local population's safety and will be vital to our visiting tourism industry.	activities. The various means of communicating information on areas restricted to public or commercial activities are described in Section 3.13 (Public Health and Safety) of the EIS/OEIS. As specified in Title 33 C.F.R. Subpart 72.01, Notices to Mariners, the U.S. Coast Guard issues information to the public concerning maritime navigation. There are three categories of Notices to Mariners: the Local Notice to Mariners (LNM), the Notice to Mariners (NTM), and the Marine Broadcast Notice to Mariners (BNM). Additionally, nautical charts issued by the National Oceanic and Atmospheric Administration include these federally designated zones and areas. Operators of recreational and commercial vessels have a duty to abide by maritime regulations administered by the U.S. Coast Guard. The military is also planning to announce upcoming periods when FDM will not be used for several consecutive days to allow mariners to plan to fish or transit through the danger zone beyond 3 nm from FDM. Waters around FDM within 3 nm from shore are permanently closed for safety reasons due to the potential presence of unexploded ordnance. The potential impacts of training and testing are adequately assessed and included in the Section 7 ESA consultation document submitted to the USFWS in April 2014. In addition, The Navy has applied for a letter of authorization from NMFS concerning potential impacts of the proposed training and testing activities on all marine mammals protected under the MMPA and known to occur in the MITT Study Area.
SenAguon - 2	The Guam Legislature, Executive Branch, all relevant Government of Guam Agencies and Non-Governmental Organizations -- who are impacted by the MITT -- would highly benefit in receiving copies of all environmental impact assessments conducted within the footprint of the MITT. Copies of plans for any modifications to Guam land, as a result of the MITT, must be provided to the Government of Guam prior to construction. We would like to request that the final record of decision	The military has and will continue to coordinate with the Government of Guam concerning activities proposed in the MITT Study Area. The release of the Final EIS/OEIS and the Record of Decision will be published in the local newspapers. Copies of all documents, including the Final EIS/OEIS, associated with the MITT EIS/OEIS are available on the website: www.mitt-eis.com. The MITT EIS/OEIS does not propose any modifications to land on Guam or CNMI. As indicated above, the military currently issues Notices to Mariners and

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	include the following requirements: • Notifications (with reasonable lead time) be given to the general public, fishing industry, tourism operations, and the Government of Guam prior to conducting military exercises (as defined by the final version of the MITT) within the MITT footprint. • Copies of all environmental impact assessments conducted within the footprint of the MITT be given to the Guam Legislature, the Executive Branch, all relevant Government of Guam Agencies and Non-Governmental Organization (who are impacted by the MITT). I highly encourage the review and consideration of all comments received as part of the Mariana Islands Training and Testing (MITT) comment period. I highly encourage the review and consideration of all comments received as part of the Mariana Islands Training and Testing (MITT) comment period.	Notices to Airmen through the USCG and the FAA announcing upcoming activities. The military will review and respond to all comments received during comment period for the EIS/OEIS.
Office of Senator Vicente (ben) Cabrera Pangelinan (SenPang) Guam – 1	*Hafa adai!* Attached you will find my comments on the Draft Environmental Impact Statement/Overseas Environmental Impact Statement for Mariana Islands Training and Testing. This was submitted via the project website, Comment ID: 18-3335-1. Should you have any questions or concerns, please feel free to contact me. Si Yu'os Ma'åse', Vicente (ben) Cabrera Pangelinan Senator cc: All Senators, 32"d Guam Legislature	Thank you for your participation in the NEPA process. Your comment has been broken down into component parts to ensure that all comments provided in your letter are addressed. As a result, this portion of the comment does not contain a specific question or inquiry related to the EIS/OEIS. Therefore, no response is provided.

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	Letter to MITT EIS/OEIS Project Manager December 12, 2013 Page 1 of 3 **From: Senator Vicente (ben) Cabrera Pangelinan** **December 12, 2013** **Comments on Draft EIS/OEIS for Mariana Islands Training and Testing (MITT) U.S. Navy/U.S. Pacific Fleet** The Mariana Islands Training and Testing (MITT) Draft Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS) is just one of five other National Environmental Policy Act (NEPA) Actions that the citizens of Guam and the Commonwealth of the Northern Mariana Islands (CNMI) must review and comment on to make sure we protect our cultural and socio-economic values and priorities of our region are voiced and considered, and to ensure that our quality of life is not further compromised by the Department of Defense's (DoD) proposed expanded testing and training range. As Chairman of the Guam Legislative Committee on Appropriations, Public Debt, Legal Affairs, Retirement, Public Parks, Recreation, Historic Preservation and Land, I am providing comments relevant to the impact on our environment as a whole, including the overall EIS process and the proposed expansion as it affects our economic posture.	
SenPang - 2	**1) Format of Public Meetings** **Comment:** There appears to be no official representatives from the Department of Navy or the cooperating agencies, including the National Marine Fisheries Service, U.S. Air Force and U.S. Coast Guard present at these meetings who are in the capacity to make actual decisions or who are best able to explain	Navy officials and representatives attended all four of the public meetings for this EIS/OEIS. The public meetings are meant to gather public comment. The meetings are not a place or forum for decision making but a venue to allow the public the opportunity to ask questions, seek additional information via the poster stations, and have access to the subject matter experts for resource information. Furthermore, the public meetings are held to allow concerned or interested citizens to

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	the reasoning beyond what is provided in the online documentation. Initial Draft EIS public meetings held in 2009 on the military relocation allowed for oral testimony before a public audience. This latest meeting eliminated that portion from the agenda. The presentation of oral testimony before a public audience is a critical component for maintaining that the public, the community as a whole, is able to be heard and able to hear the range of perspectives and concerns that are both specific and general with regard to DoD expansion in our region. The Department of Defense has again shown its complete dismissal of the traditional practice of our people, in that the oral traditions of our culture foster participation. This complete lack of cultural sensitivity fundamentally has inhibited the majority of the concerns of our people. Additionally, the number of days and venues for public meetings has been reduced, with one day each for Guam, Saipan, Tinian, and Rota. While the one-day public meeting may meet the NEPA requirement, the reduced allotment for public meetings thwarts the ability of our citizens to actively engage with the DoD on the issues that adversely impact us as an entire community.	make comments. The public meetings did not eliminate the oral testimony option. As stated in the letters sent to various stakeholders and notices published in the local newspapers, the public could submit either written or oral comments at the meetings. An oral comment section, with a microphone and digital voice recorder, was set-up in all meeting venues. In addition, a court reporter was on hand at all four meetings ready to transcribe/record all oral comments. The number of public meetings and venues were carefully chosen based on the number of people who participated in the MIRC EIS/OEIS, as well as scoping meetings for this EIS/OEIS. One day meeting each was conducted for Guam, Saipan, Tinian, and Rota. However, the comment period for the MITT EIS/OEIS, where the public could submit comments by mail or through the MITT website (www.MITT-EIS.com) was 90 days.
SenPang - 3	**2) Proposed Action Alternatives** **Comment:** No Action Alternative - This alternative continues existing baseline training and testing already in, but not limited to the Mariana Islands Range Complex (MIRC) EIS/OEIS and MIRC Airspace EA/OEA FONSI/FONSH. Essentially, this alternative reauthorizes the continuation of such actions. To maintain the spirit of No Action, the Navy should consider	The Navy explored a variety of alternatives and concluded that the three alternatives presented in the EIS/OEIS were the only reasonable alternatives that met training and testing requirements. The development of alternatives and discussion of alternatives eliminated from further consideration is presented in Section 2.5 (Alternatives Development). As per CEQ interpretation on the "No Action Alternative", the "no action" is "no change" from the current direction or level of intensity;

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	elimination of the baseline training and testing activities already existing through the MIRC. Until a No Action plan is truly implemented, an analysis or further study should be done to report on the present-day impact of the existing baseline training and testing activities included in MIRC EIS/OEIS ROD and MIRC Airspace.	therefore, the "no action" alternative is continuing with the present course of action until the action is changed.
SenPang - 4	*Alternative 1 (Preferred Alternative)* - This would include the No Action Alternative (which is the MIRC) PLUS an increased area for use by DoD, bringing the training range from 500 square miles to nearly one million square miles of the Mariana Islands region. Alternative 1 allows for the training and testing requirements to accommodate force structure changes and the introduction of new vessels, aircraft, and weapons systems; establishment of Title 33 C.F.R Danger Zones; and net explosive weight increases. The DoD's preferred alternative involves the expansion of an additional 500 square miles of ammunitions testing and warfare training area, for a total of close to one million square miles for the proposed site, which in effect doubles the testing and training area previously disclosed as the Mariana Islands Range Complex (MIRC). This area has been described as the largest training range that DoD has in the world. Guam's ability to comment on an expansion of this magnitude is inadequate at this point. We would need more than a 90-day comment period and additional public meetings.	The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. The Navy recognized that the MITT EIS/OEIS is a large and complex document. The comment period was 90 days, which exceeded the requirements under NEPA.
SenPang - 5	*Alternative 2* - Includes Alternative 1 and MORE, including increased speed and timing of training and testing activities adding three major at-sea training and testing activities and adjustment for NAVAIR and NAVSEA testing activities. DoD proposes to use Guam and the CNMI land and seas for continued and expanded sonar testing and training, continued and expanded bombing on Farallon de Medinilla, off-shore underwater bomb detonation and to generally increase the	As presented in Section 3.12 (Socioeconomic Resources) of the EIS/OEIS, the military has been conducting training and testing activities within the MITT Study Area for decades, and has taken and will continue to take measures to prevent interruption of access. The military does not limit fishing activities from occurring in areas of the MITT Study Area that are not being used for training and testing activities except for within 3 nm of FDM. To minimize potential military/civilian interactions, the Navy will continue to publish scheduled operation times and locations on publicly accessible Navy websites and through U.S. Coast

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	frequency and area of testing and training. We do not support further desecration of our lands, our oceans, and the harmful impact of the DoD training and testing on our wildlife and sealife. When reviewing the current impact on the training area and the accommodations that are touted such as the easing of access restrictions for certain areas on a case by case basis, I proposed that these accommodations be made part of the EIS and that any additional expansion of the MIRC be off-set by a permanent deletion of the areas with eased restrictions on a case by case basis, on an area for area basis.	Guard issued Notices to Mariners up to 6 months in advance of planned events. When feasible, the military will use these same means of communication to notify the public of changes to previously published restrictions. These efforts are intended to ensure that commercial and recreational users are aware of the military's plans and allow commercial and recreational users to plan their activities to avoid scheduled training and testing activities. Advanced planning on behalf of the military and effective communication of the military's plans should minimize limits on accessibility. The Navy will continue to engage with the public and the local fisherman on issues affecting commercial and recreational fishing in order to limit potential impacts associated with military activities.
SenPang - 6	**3) Economic value of Guam** **Comment:** While it is often argued that the economic value of Guam is strengthened because of U.S. defense spending, we are seeing this week, Guam's economic predicament steepened further by whether or not the U.S. House of Representatives and the U.S. Senate compromise on the FY2014 National Defense Authorization Act (NDAA). One main concern as a policy maker is that one of our biggest economic engines is tourism and tourism's economic value is separate and apart from the military, and if we lose that identity, then we lose the value of that economic engine. We can't survive on the whims of the military community because we saw what can happen. Congress can decide again- no more budget, we'll cut the military out and once again, you have a community that has devalued our economic value as a community rich in culture, catering to tourism-we've devalued that to support a military buildup and when Congress decides we're going to cut the budget for the military because we have national priorities, then we have to rebuild that up and support it again, but we've lost the revenue stream that comes from that military that is now cut. It becomes another challenge and another struggle. There's got to be a balance in	The military recognizes that the tourism is an important economic resource to Guam and that the natural resources of Guam are a key component of the tourism industry. The EIS/OEIS analyzes the impacts of the proposed activities on socioeconomic resources, including tourism, and while impacts on certain resources (e.g., accessibility to fishing sites) may increase under Alternatives 1 and 2, these impacts are not expected to be substantial. The military is and will continue to work with local fishers and mariners to minimize impacts on the tourism industry. For example, the military allows access to the northern portion of W-517 during activities that occur far from that area in the southern portion of W-517 so that fishers can transit to and fish on White Tuna Banks and other nearby popular fishing sites. Previously, any activities occurring in W-517 would have required closure of the entire warning area regardless of where the activity took place within W-517. The military is also planning to announce upcoming periods when FDM will not be used for several consecutive days to allow mariners to plan to fish or transit through the danger zone beyond 3 nm from FDM. The military is committed to protecting the environment during the conduct of its military training and testing activities. Effects from training and testing activities were analyzed in Chapter 3 of the Final EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the Final EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures

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	favor of the local community, the identity of the local community, the exploitation of the economic value of the richness of the culture and the heritage of that local community. As a final point, the impact of the proposed MITT project is significant. The preferred alternatives outlined in the five NEPA actions all support increased testing and training in our region, which in turn affects the quality of life of our people. Ultimately, these actions not only impede our quality of life but also our rights as indigenous peoples, and our ability to make decisions with regard to indigenous self-determination. Even, the DoD recognizes in previous EIS proceedings that the increase of military personnel plus the increase of a civilian population to support increased military activity on Guam will have a negative impact on the rights of the local people and the ability of the native inhabitants of Guam in the exercise of its self-determination as provided for under the United Nations international treaties and charters.	during its training and testing activities. Lastly, for clarification, the MITT EIS/OEIS addresses military training and testing activities within the Study Area. This EIS/OEIS does not address the military buildup and does not include an increase in the number of personnel in Guam. These actions are addressed in the Guam and CNMI Military Relocation (2012 Roadmap Adjustments) SEIS. Information regarding the CJMT EIS/OEIS can be found at: http://www.guambuildupeis.us/.
United States Department of the Interior Office of the Secretary Office of Environmental Policy and Compliance (USDoI) – 1	The Draft Environmental Impact Statement/Overseas Environmental Impact Statement (DEIS) for the Mariana Islands Training and Testing Study Area was released for public review on September 13, 2013. The lead federal agency for the proposed action is the Department of the Navy (DoN). The proposed action includes the expansion of the study area boundaries and adjustment of the location, type and tempo of military training activities of the Mariana Islands Range Complex, which encompasses land, air, and sea training ranges in Guam and the Commonwealth of the Northern Mariana Islands (CNMI). This proposed action is intended to fulfill and improve U.S. government national security and alliance requirements in the Western Pacific Region and increase the strategic defense role of Guam and the CNMI.	Thank you for your participation in the NEPA process. Your comment has been broken down into component parts to ensure that all comments provided in your letter are addressed. As a result, this portion of the comment does not contain a specific question or inquiry related to the EIS/OEIS. Therefore, no response is provided.

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	We reviewed the DEIS pursuant to the National Environmental Policy Act of 1969 [42 U.S.C. 4321 *et seq.*; 83 Stat. 852] (NEPA); and other authorities mandating concern for the environmental resources, including the Fish and Wildlife Coordination Act of 1934 [16 U.S.C. 661 *et seq.*; 48 Stat.401], as amended; the Clean Water Act [33 U.S.C. 1251 *et seq.*; 62 Stat. 1155], as amended; the Endangered Species Act of 1973 [16 U.S.C.1531 *et seq.*; 87 Stat. 884], as amended (ESA); and the Sikes Act of 1960 [16 U.S.C. *et seq.*; 74 stat. 1052], as amended, and the Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*), as amended (MBTA). We offer the following comments for your consideration.	
USDoI - 2	<u>*Federally Listed and Candidate Species*</u> A number of listed and candidate species occur on Guam, Rota, Saipan, Tinian, and Farallon de Medinilla (FDM). We are concerned that the proposed activities would result in adverse impacts to listed and candidate species from habitat loss, degradation, and fragmentation. We also are concerned that the increase in frequency, intensity, or duration of military training activities, particularly on Tinian and FDM, may significantly increase disturbance to or harm candidate and listed species from current levels of military training activities on these islands. We understand from the analysis in the DEIS that impacts from activities conducted on the same range are considered the same regardless of their frequency or intensity. We disagree with this conclusion and assert that the increased frequency, intensity, or duration of training and testing exercises would increase the impact (e.g., noise, fire risk) to species. We ask that you revisit this conclusion and disclose the level or severity of impacts to listed and candidate species in the EIS.	The Navy acknowledges in the Final EIS/OEIS that proposed increases in activities would increase exposures to wildlife resources (individual species, populations, habitats). The effects determinations carried forward in the Final EIS/OEIS have been updated with the outcome of Section 7 ESA consultation between the Navy and USFWS. The Biological Opinion included an Incidental Take Statement that considered the take megapodes on the island.

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USDoI - 3	In addition, the EIS includes determination of effects to listed species for the No Action Alternative pursuant to section 7 of the ESA and uses these determinations for the Preferred Alternative and Alternative 2 (see Table ES.6-1 and 3.10 in the DEIS). This is inappropriate because it is the action agency's responsibility to describe the effects for the proposed activities on the environment (e.g. listed species) for all alternatives in the EIS, rather than referencing a non-NEPA document on its effects. It is also pre-decisional and incorrect to include statements of affects to listed species pursuant to section 7 of the ESA in the DEIS because consultation on the Preferred Alternative or Alternative 2 has not been completed. Therefore, we ask that you remove these statements from the EIS. The EIS should provide a thorough analysis of the impacts to federally-listed and candidate species. Specifically, the EIS should include the amount of habitat for each of the listed and candidate species that would be removed, degraded or fragmented and the resulting effects to populations and individual species. The EIS should include measures to minimize impacts to listed and candidate species. If project impacts to species cannot be avoided, the EIS should include mitigation measures that offset or mitigate the impacts.	The Navy has updated the Final EIS/OEIS based on ongoing consultations with USFWS and NMFS and will incorporate all reasonable and prudent measures, and terms and conditions that are set forth in the Biological Opinion in the Record of Decision. Effects from training and testing activities for the No Action, Alternative 1, and Alternative 2 were analyzed in Chapter 3 of the EIS/OEIS. Information regarding habitat for each of the ESA-listed species is not included in the EIS/OEIS because the Proposed Action does not include removal of habitat for ESA-listed species within the Study Area. Conservation measures required in the USFWS Biological Opinion are included in the Final EIS/OEIS.
USDoI - 4	We are concerned about the scope of the training activities as they are spread over multiple islands within the Marianas. We recommend, at minimum, the removal of Rota from all proposed activities. Among the islands included in your study area, Rota is the most pristine and provides habitat for some of the most critically endangered species in the Mariana Islands including the Mariana crow (*Corvus kubaryi*) and Mariana fruit bat (*Pteropus mariannus mariannus*). The Rota fruit bat population has become increasingly more important for recovery because of the near extirpation of bats on Guam. Both are extremely sensitive to any type of disturbance events	Clarification has been included in the Final EIS/OEIS regarding military training and testing activities on Rota. Figure 3.10-2 has been updated to show potential locations where training activities are likely to occur. These areas include urban areas, Angyuta Island, and Rota International Airport. No training activities would occur in critical habitat areas, conservation areas, or other areas considered habitat for ESA-listed species. In addition, analysis has been updated to address potential pathways of invasive species introductions to Rota (as well as other locations) that military training presents to the island. This includes the identification of pathways for brown treesnake introduction to Rota associated with military training activities, and measures to counter the

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	and a single disturbance event for these species would likely negatively impact them at a population level. In addition, as discussed below, with the proposed increase in military traffic and training on Rota, there is a risk of the accidental introduction of the brown treesnake (*Boiga irregularis*) from aircraft or vessels that originate from Guam. We ask that you avoid this risk all together by removing Rota from all proposed activities in the EIS.	threat of brown treesnake introduction. The Navy has also included conservation measures to reduce disturbance to Mariana fruit bats and Mariana crows on Rota. Specifically, the Navy will adopt a horizontal and vertical 1,000 foot flight restriction on Rota for training exercises, with the exception of normal takeoffs and landings in and out of Rota International Airport.
USDoI - 5	<u>*Coastal and Marine Environment*</u> Although the impact analysis covers most areas of potential impact from a diverse set of activities, it is deficient in: (1) assessing potential impacts to the marine and coastal environment from acoustic stressors by underwater demolition, (2) physical disturbance as a result of amphibious landings, and (3) insufficient evaluation of the secondary impacts to coastal and marine resources associated with the use of land-based explosives. The DEIS is also deficient in describing the marine habitats around the specific areas of planned underwater demolition and amphibious landings.	Underwater explosions occurring near the seafloor will only occur in the designated mine neutralization sites (see Figure 3.3-6). The Final EIS/OEIS states that the Navy plans to use the same areas for these activities to minimize impacts. Section 3.3.3.1 (Acoustic Stressors) of the Final EIS/OEIS includes an analysis of abiotic marine habitats. Impacts associated with amphibious landing has been updated throughout the applicable biological resource sections of the EIS/OEIS. In addition, a detailed description of Standard Operating Procedures for amphibious landings has been included in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring). Implementation of standard operating procedures and mitigation limits the physical disturbance type impacts. Additional information has been added to the analysis for marine resources (marine habitats, fish, invertebrates) that may be impacted by erosion from land activities. The locations of bottom laid explosions for Piti Floating Mine Neutralization Site, Outer Apra Harbor Underwater Detonation Site and Agat Bay Mine Neutralization Site are shown in Figure 2.1-5 of the Final EIS/OEIS. Detailed maps of the bottom sediments (Figures 3.3-1 and 3.3-2), the marine vegetation (Figures 3.7-1 and 3.7-2) and corals (Figures 3.8-2 and 3.8-3) in the areas of the underwater detonation sites have been included in the Final EIS/OEIS. Additionally, figures of the bottom sediments (Figures 3.3-2 and 3.3-4), marine vegetation (3.7-2 and 3.7-3), and corals (3.8-3 and 3.8-4) surrounding Tinian and Apra Harbor, where

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		amphibious landings may occur have been included in the Final EIS/OEIS.
USDoI - 6	The analysis of the effects to marine habitat from acoustic stressors by underwater demolition is inadequate in the DEIS. This analysis should be done on a localized level verses a generalized analysis of a large area such as the Western Pacific Ocean. We recommend all the areas that may be subjected to underwater demolition be included in a map with these areas overlaid with detailed habitat maps showing underlying geomorphological structure and biological resources in the EIS. These types of habitat maps will help inform a more robust analysis of impacts to marine resources because the specific areas can be assessed for impacts to individual species present. Maps should be produced for both shallow and deep waters; however, it is understood the amount of detail may be less for deep water habitats but should at least include hard and soft bottom substrates. If hard bottom is known from the impact area, more detailed optical data should be collected to document the presence of deep water corals.	Underwater explosions occurring near the seafloor will only occur in the designated mine neutralization sites (see Figures 2.1-5 and 3.3-7). The Final EIS/OEIS states that the Navy plans to use the same areas for these activities to minimize impacts. Additionally, the maps in Section 3.3 of the Final EIS/OEIS have been updated to better illustrate hard and soft bottom habitats in the Study Area.
USDoI - 7	Amphibious landings are proposed at four locations including Una Babui, Una Chulu, and Unai Dankulo on Tinian and Dry Dock Island in Apra Harbor, Dadi Beach on Guam. The DEIS states that "as is current practice, exposure of coral and other hard bottom habitats would continue to be avoided in the Proposed Action. Prior to any Amphibious Assaults and Amphibious Raids with larger amphibious vehicles, a pre-landing surveillance of the area would be undertaken to identify the best landing route, which would help avoid identified obstacles." However, there is no explanation how this occurs and there is no data cited or shown to support that non-hard bottom corridors exist in these landing areas. Surveys of marine and coastal resources of Tinian conducted by the U.S. Fish and	The language regarding Standard Operating Procedures for Amphibious Landings has been updated in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS (as well as cited in relevant biological subsections of Chapter 3). The information now states: Prior to any amphibious over-the-beach training activity conducted with larger amphibious vehicles such as LCACs or Amphibious Assault Vehicles (AAVs) (e.g., Amphibious Assaults), a hydrographic survey and a beach survey would be required. The surveys would be conducted to identify and designate boat lanes and beach landing areas that are clear of coral, hard bottom substrate, and obstructions. LCAC landing and departure activities would be scheduled at high tide. In addition, LCACs would stay fully on cushion or hover when over shallow reef to avoid corals and hard bottom substrate. This is a standard operating

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	Wildlife Service (Service) and its partners (Minton et al. 2009) via DoN funding appear not to have been cited in this document. This may be a helpful resource relative to determining and describing landing route sites on Tinian. The Service recommends that detailed habitat maps be produced for each of the landing beaches and that maps indicate corridors for amphibious landing vehicle use. In addition, the Service recommends that data be shown that indicates that hover craft and other amphibious landing vehicles do not have an impact to the seafloor.	procedure for safe operation of LCACs. Over-the-beach amphibious activity would only occur within designated areas based on the hydrographic and beach surveys. Similarly, AAV activities would only be scheduled within designated boat lanes and beach landing areas and would conduct their beach landings and departures at high tide one vehicle at a time within their designated boat lane (Commander, Naval Forces Marianas Instruction [COMNAVMARIANASINST] 3500.4A). Based on the surveys, if the beach landing area and boat lane is clear, the activity could be conducted, and crews would follow procedures to avoid obstructions to navigation, including coral reefs; however, if there is any potential for impacts on corals or hard bottom substrate, the Navy will coordinate with applicable resource agencies before conducting the activity. Hydrographic and beach surveys would not be necessary for beach landings with small boats, such as RHIBs. Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) for amphibious landings has been updated in the EIS/OEIS. With implementation of the measures described above, impacts on the seafloor would be minimized.
USDoI - 8	The DEIS does not adequately discuss the potential impacts of land-based sediment and rock that may be dislodge during bombing of FDM and its impact on the marine environment. Surveys have been conducted at FDM since 1999, and the DEIS suggest the impacts may be insignificant. However, these surveys are not designed to statistically measure temporal changes in marine resources. These issues are not discussed as a possible impact to marine habitat, marine vegetation, marine invertebrates, marine fishes, or sea turtles. The Service recommends adding a section in each of marine groups that addresses land-based sediment from terrestrial sources as a secondary stressor.	Activities discussed in the EIS/OEIS that could potentially cause erosion and sedimentation of near shore habitats are limited to FDM. Information regarding potential sediment runoff from military use of FDM has been added to Section 3.1 (Sediments and Water Quality) of the Final EIS/OEIS. Information regarding how erosion from FDM may impact specific resources has been added to applicable resource sections (e.g., marine vegetation, marine invertebrates, fish, sea turtles, and marine mammals).
USDoI – 9	*Migratory Birds* The EIS should provide a more thorough analysis of impacts to seabirds that occur or move through FDM as a result of all the alternatives. The DEIS states that increased bombings will “not	In the Final EIS/OEIS, the Navy has expanded on the distribution data of species chosen for focused analysis, which included subspecies distribution in the western and central Pacific. Based on this information, restricting the definition of "population" to the colonies located within the Mariana archipelago is not appropriate. In addition,

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	result in a significant adverse effect on populations of the great frigatebird, masked booby or other marine bird species". This conclusion is not adequately supported by the information in the DEIS. At a minimum, the EIS should include a statistical analysis of the 1995 to 2012 booby survey and trend data on FDM, provide long-term monitoring data on seabirds that occur on or near FDM other than the three booby species, and current information on the status of resident seabird populations that occur in the Mariana Islands. Furthermore, impacts to marine bird populations need to be defined as outlined in 50 C.F.R. Part 21.15 which defines a population "as a group of distinct, coexisting conspecific individuals, whose breeding site fidelity, migration routes, and wintering areas are temporally and spatially stable, sufficiently distinct geographically (at some time of the year), and adequately described so that the population can be effectively monitored to discern changes in is status". The proposed activities would result in a significant increase in explosions on FDM; therefore the EIS should describe how the increase in the frequency of bombing would impact seabirds on FDM. The EIS also should disclose the extent that shore bombardment causes mass wasting of cliff lines, which may result in the loss of nesting and roosting seabird habitat.	the Navy has included in the Final EIS/OEIS a statistical analysis of 17 years of monthly and quarterly bird counts of the three booby species that nest on FDM. The results of this analysis is included in Section 3.6.2.6 (Rookery Locations and Breeding Activities within the Mariana Islands Training and Testing Study Area). It should be noted that the three booby species are easily seen (and therefore counted), reducing uncertainty in the survey effort. The results of the statistical analysis do not show any significant changes in population trends for the three booby species included in the analysis. It should also be noted that the rare and infrequent breeding activity of the great frigatebird on FDM indicates that FDM does not support a spatially and temporally stable breeding location, therefore, great frigatebirds on FDM do not constitute a unique population under the definition presented in 50 C.F.R. Part 21.15 (see Section 3.6.1.2, Migratory Bird Treaty Act Species and 50 Code of Federal Regulations Part 21.15 Requirements). The Navy's targeting restrictions of areas inhabited by seabirds and used for breeding activity will continue, as well as the monitoring program on a quarterly basis and subsequent statistical analysis of survey data.
USDoI – 10	*Invasive Species* The accidental introduction of the brown treesnake (BTS) on Guam in the 1940's resulted in the extirpation of most of the native forest bird species in as little as 40 years (Savidge 1986, 1987). The BTS also has been linked to the extirpation of native reptile species on Guam (Fritts and Rodda 1998). This invasive species has become a significant economic, agricultural, and public health concern. The risk of BTS establishment in the CNMI posed by this proposed action, if not properly mitigated, is very high. The EIS should adequately	The U.S. Navy recognizes the importance of biosecurity, ecological integrity, and resiliency of island ecosystems to the potential introduction of invasive species to the Mariana Islands associated with military training and testing. The military has a number of policies in place to prevent, interdict, and control invasive species introductions in both terrestrial and marine environments. Specific policies for marine invasive species can be found at: OPNAVINST 5090.1D Chapter 35-3.19. (Ship and Ballast Water), 5090.1D Chapter 35-3.1 (Environmentally Sound Ships), and 5090.1D Chapter 12-3.10 (Invasive Species). This information has been added to Section 3.10 (Terrestrial Species and Habitats) as part of an overall invasive species discussion that includes

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	disclose any transport or staging of personnel and equipment/cargo from Guam to Saipan, Tinian, Rota or FDM or other sites within the CNMI, and include BTS interdiction measures to address this concern. The proposed increase in tempo of activities has the potential to overwhelm current interdiction efforts in place on Saipan, Tinian, and Rota. The EIS should include increased support for BTS interdiction and control. In particular, the EIS should provide measures to decrease the risk of BTS dispersal from Guam by providing support of snake suppression on a landscape level on Guam. The EIS also should include a commitment to maintain efforts to meet the 100 percent inspection goal for all outgoing vessels and aircrafts, carrying goods, personnel, cargo, vehicles, from Guam and to conduct repetitive inspections of all incoming vessels and aircrafts arriving from Guam. It should be noted that "The National Defense Reauthorization Act of 2009" requires that the Department of Defense "shall establish a comprehensive program to control and, to the extent practicable, eradicate [brown tree snake (BTS)] from military facilities in Guam and to ensure that military activities . . . do not contribute to the spread of BTS."	terrestrial, marine, and freshwater invasive species. This additional task includes a conceptual pathway analysis that highlights potential pathways for BTS introduction from Guam and other BTS source populations (e.g., northern Australia) to other islands in the Marianas that support training described in this EIS/OEIS. The Navy maintains that introduction of invasive species associated with military training activities is low. The military will implement brown tree snake control and Interdiction measures described in COMNAVMARIANASINST 3500.4A. Measures include 100% inspection requirement of all cargo/equipment and aircraft departing Guam for off-island destinations and a repeat inspection at the off-island destinations. It should be noted that the Navy or other military services does not have jurisdiction of other potential pathways for introduction (e.g., commercial activities, U.S. mail, non-DoD personnel).
USDoI – 11	*Readability of the DEIS* As you are aware, the EIS should be a succinct statement of all the effects for proposed activities on the environment. The regulations promulgated by the Council on Environmental Quality (CEQ) in 1978 established a target size for EIS's as "normally not to exceed 150 pages in length and for proposals of unusual scope or complexity 300 pages" (40 CFR 1502.7). In March 2012, CEQ published guidance on improving the NEPA process and recognized that there would be a range of appropriate lengths of EIS's, however agencies should keep EIS's as concise as possible (77 FR 14473). This DEIS is over 1700 pages in length. The sheer volume of the DEIS is	The Navy strives to comply with CEQ guidance as much as possible. The Navy has done all it can to keep this document as succinct as possible, including the inclusion of technical appendices, per CEQ guidance.

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	prohibitive because an unreasonably large effort to review the document is needed to understand the information about the proposed activities. Pursuant to the regulation and guidance from CEQ, we recommend that you prepare a more succinct document to improve the readability of the EIS.	
USDoI - 12	*Cumulative Effects* The DEIS does not adequately discuss cumulative effects to marine resources, species of concern, listed and candidate species, and migratory birds. The EIS should disclose the cumulative effects to water quality, marine habitats, marine birds, marine vegetation, marine invertebrates and fish. In addition, given that there are proposed future increases in DOD activities on Tinian, including the establishment of a series of live-fire and maneuver Ranges and Training Areas on Tinian, the EIS should provide a robust discussion on the cumulative effects to species of concern and listed and candidate species on Tinian. In particular, we are concern about cumulative effects to the Tinian monarch, a species of concern. The Tinian monarch is an endemic bird that occurs only on Tinian. This species was delisted in 2004, and the population has declined 38 percent between 1996 and 2008 (Camp et al. 2012). The future increase in military activity and use of Tinian may have significant cumulative impacts to this species. On FDM, we recommend that the EIS disclose the type and degree of cumulative impacts to terrestrial species and migratory birds.	Cumulative impacts on marine resources are specifically addressed in Chapter 4 (Cumulative Impacts) in the EIS/OEIS. Section 3.10 (Terrestrial Species and Habitats) includes discussions for candidate species and non-ESA-listed birds otherwise protected under the MBTA. Section 3.6 (Marine Birds) includes detailed discussions on seabirds that nest on FDM and migratory shorebirds found on military use areas within the Mariana Islands. Currently, the Tinian monarch is not ESA-listed, nor is this species considered as a candidate for ESA-listing. If this species is "uplisted," the Navy will consult as appropriate with the USFWS pursuant with the Navy's Section 7(a)(2) obligations. It should be noted that the proposed action does not include habitat clearance within the Tinian MLA. On FDM, there are no other non-federal or federal activities that could occur besides those described in the EIS/OEIS, except for operational range clearance activities. These activities are included in the Navy's Section 7 ESA consultation for the military use of FDM.
USDoI - 13	*Summary* The Service appreciates the opportunity to comment on the Mariana Islands Training and Testing Study Area DEIS and looks forward to collaborating with the DoN the finalization of this document. Specific comments on various sections in the	Your comment has been broken down into component parts to ensure that all comments provided in your letter are addressed. The Executive Summary in the Final EIS/OEIS has been revised to provide clarification. Clarification included the following statement in the Executive Summary:

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	DEIS are enclosed below. *Specific Comments* Page ES.6.1. Under the cumulative effects section, it states that "although the only significant impacts to terrestrial species and marine birds would occur on FDM, other activities within the Mariana Islands may indirectly impact or benefit species on FDM". We recommend that you provide clarification on how the proposed activities would benefit species on FDM in the EIS.	"Exclusion of FDM from uncontrolled access may benefit species on FDM. For example, the main threats to terrestrial species within the Mariana Islands include (1) invasive species, (2) habitat degradation, (3) and illegal hunting. By exercising the military's right under the lease agreement to limit access to military-approved personnel, the potential for invasive species from non-DoD pathways is eliminated. Likewise, illegal hunting of Mariana fruit bats and egg poaching is minimized by the access restrictions. Non-DoD stressors that may degrade habitats are also negligible on FDM. "
USDoI - 14	Page 2-59. Table 2.7-1 should include the approximate depth zones for the various areas of underwater detonations.	The purpose of Table 2.7-1 of the EIS/OEIS is to describe current nearshore danger zones around Guam and FDM and the proposed nearshore small arms training area. These surface hazard areas are associated with calculated surface danger zones and surface exclusion zones. Further descriptions on the conduct of underwater detonation and mine neutralization are found in Appendix A (Training and Testing Activities Descriptions).
USDoI - 15	Page 2-20, 2.2.2. Amphibious Warfare. Frequency, estimated number of troops and vessels, number of landings are not adequately defined in the DEIS. Because the proposed activities occur on green turtles nesting beaches, a more detailed description of the activity needs to be provided in the EIS. The above information should be included in your analysis of impacts to nesting sea turtles in the EIS.	This EIS/OEIS carries forward without change the analysis for amphibious landings from the MIRC EIS/OEIS. Please see Appendix A for a detailed description of the training and testing activities included in the EIS/OEIS. Also, the Final EIS/OEIS has been updated to be consistent with the Biological Opinion provided to the Navy by the USFWS. During consultation with USFWS, the Navy determined that Unai Chulu, Unai Babui, and Unai Dankulo would not be designated as landing zones for mechanized amphibious vehicles (AAVs) at this time. Should mechanized amphibious vehicles (AAV and LCAC) landings on those beaches become necessary, Navy will reinitiate consultation for those activities.
USDoI - 16	Page 2-28. Other Acoustic Sensors. It is unclear if the Navy is proposing to use Atlantic bottle-nosed dolphins and California	The use of marine mammals (as sensor systems) described in the "Other Acoustic Sensors" is an action that may occur within the MITT Study

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	sea lions on Guam or if this is an example of other acoustic sensors used at other facilities. This needs to be clarified in the EIS.	Area in support of training or testing activities presented in the action alternatives. Both bottlenose dolphins and California sea lions may be used. The use of marine mammals as sensor systems itself are not considered a training or testing event.
USDoI - 17	Page 2-45, 2.7. Alternative 1. Expansion of the Overall Study Area. The DEIS states ".. contains analysis where training and testing would continue as in the past, but were not considered in previous environmental analysis." This statement is confusing and needs to be clarified in the EIS.	This sentence has been be deleted. The remaining description on page 2-55, 2.7 clearly describes the Proposed Action.
USDoI - 18	Page 2-60, 2.7.1.3. Amphibious Warfare. Because of the increase in exercises for amphibious warfare, minimization and mitigation measures for nesting sea turtles need to be included in the EIS.	Amphibious landing procedures have been inserted into the Standard Operating Procedures section of the mitigation section as well as Section 3.5 (Sea Turtles) of the Final EIS/OEIS. Prior to beach landings by amphibious vehicles, known sea turtle nesting beaches are surveyed by Navy biologists for the presence of sea turtle nests no more than 6 hours prior to a landing exercise. Areas free of nests are flagged, and vehicles are directed to remain within these areas. LCAC landings on Tinian are scheduled for high-tide. LCACs stay on-cushion until clear of the water and within a designated Craft Landing Zone (CLZ). Within the CLZ, LCAC come off-cushion with the LCAC oriented to permit expeditious vehicle and cargo offload onto a cleared offload and vehicle traffic area. Although LCAC and expeditionary vehicle traffic typically do not leave ruts, some compaction of sand in vehicle tracks is possible. If restoration of beach topography is required it is conducted using non-mechanized methods. Additionally, Navy biologists monitor beaches during nighttime training landing exercises. If sea turtles are observed or known to be within the area, training activities are halted until all nests have been located and sea turtles have left the area. Identified nests are avoided during the nighttime landing exercise.
USDoI - 19	Page 2-60, 2.7.1.7. Further information needs be included about the shock wave generator to better assess resource impacts.	Additional information regarding the specifics of the shock wave generator are provided in Appendix A (Training and Testing Activities Descriptions).

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USDoI - 20	Page 2-61, 2.7.1.9. Other Training. To ensure better evaluation of impacts greater details needs to be provided regarding the amount, types, and locations of precision anchoring throughout the document.	Precision anchoring training description, activity level and locations are described in Table 2.8-1 and additional details are provided in Appendix A (Training and Testing Activities Descriptions). Precision anchoring typically involves existing and approved anchorage sites in Apra Harbor and other Mariana Islands anchoring locations. Apra Harbor anchorage sites are depicted in Figure 2.1-5: Apra Harbor Naval Complex (Main Base) and Main Base/Polaris Point.
USDoI - 21	Page 2-63. Littoral Combat Ship. Please provide greater detail regarding the shallowest depth of proposed operation. Insufficient detail related to this issue makes assessment of potential resource impacts challenging.	The additional information is in Appendix A (Training and Testing Activities Descriptions).
USDoI - 22	Page 2-63. Amphibious Combat Vehicle. Insufficient detail related to this issue makes assessment of potential resource impacts challenging. Specific information regarding the current and proposed type of vehicles and their estimated draft needs to be outlined.	Amphibious landings are discussed and analyzed in numerous resources sections of the EIS/OEIS and activities must follow Standard Operating Procedures as listed in detail in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS. When developed and deployed, this vehicle would also have to follow the Standard Operating Procedures that are required for amphibious landings. As the vehicle is still in development, additional analysis would be conducted if required depending on proposed activities.
USDoI - 23	Page 3.3-36, 3.3.4. Summary of Potential Impacts (Combined Impacts of All Stressors) on Marine Habitats. Impacts of stressors to marine resources within the study area are defined as a percentage of the total study area. We recommend addressing impacts within a square kilometer of effected area.	The Final EIS/OEIS includes Table 3.3-8 which has the impact footprint from the activities provided down to the square foot. The total impact area ranges from 1,517,636 square feet (0.04 square nautical mile) under the No Action Alternative to 1,875,313 square feet (0.05 square nautical mile) under Alternative 1 and 2.
USDoI - 24	**Introduction** Page 3.0-5, 3.0.1.2. Executive Orders. We recommend the addition of Executive Order 13089 Coral Reef Protection.	EO 13089 has been included under the descriptions of Executive Orders.
USDoI - 25	**Marine Habitats**	Section 3.3 (Marine Habitats) of the Final EIS/OEIS discusses impacts from physical disturbance and strike throughout the Study Area, not

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	Page 3.3-1, 3.3. Marine Habitats. The summary of the impact from physical disturbance and strike states impacting marine habitats would not be expected due to high-energy surf and shifting sands. This is largely unfounded as there is no habitat data or maps provided to show there are non-hard bottom corridors to the shore. We recommend correcting the summary based on accurate habitat maps.	only near shore environments. The Final EIS/OEIS has been updated to include maps of the habitat types of the nearshore areas around Guam, Tinian, Saipan, and FDM.
USDoI - 26	Page 3.3-2. The DEIS uses the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) to describe habitat types. However, this is not the appropriate classification for coastal and marine habitats. We recommend using the Coastal and Marine Ecological Classification Standard (CMECS) (June 2012). CMECS has been approved by the Marine and Coastal Spatial Data Subcommittee of the Federal Geographic Data Committee (FGDC) and as a matter of federal policy, all federal agencies should use the guidance set forth from the FGDC.	Habitat types and subtypes presented in Table 3.3-1 represent the optimum grouping of habitats, based on similar stressor responses to locations within the aquatic environment (e.g., depth, illumination, waves, currents) and remote detection signatures for mapping. As such these classifications may or may not overlap with the Coastal and Marine Ecological Classification Standard (Federal Geographic Data Committee 2012) catalog of terms that provides a means for classifying ecological units using a simple, standard format and common terminology. Therefore, Table 3.3-2 aligns the habitat groupings used in this analysis with the Coastal and Marine Ecological Classification Standard Classifications.
USDoI - 27	Page 3.3-2. Table 3.3-1: Habitat Types Within the Open Ocean and Coastal Portions of the Mariana Islands Training and Testing Study Area. The terms used in the habitat type column should be converted into terms congruent with CMECS. If the terms are not converted, then the terms should be "cross walked" per the guidelines set by CMECS.	Table 3.3-2 of the EIS/OEIS aligns the habitat groupings used in this analysis with the Coastal and Marine Ecological Classification Standard Classifications.
USDoI - 28	Page 3.3-3, 3.3.2. Affected Environment. All terms should conform to terminology used in CMECS.	Table 3.3-2 of the EIS/OEIS aligns the habitat groupings used in this analysis with the Coastal and Marine Ecological Classification Standard Classifications.
USDoI - 29	Page 3.3-9-12 and Figures 3.3-1, 3.3-2, 3.3-3, 3.3-4. The maps are of insufficient scale to show meaningful information. Higher resolution maps should be made that target the specific areas of interest. They should also display the geomorphology structure in addition to the biological cover	The maps in the Final EIS/OEIS have been updated to show only the habitat types used in the analysis (hard and soft bottom) in Section 3.3 (Marine Habitats). In addition, bathymetry data has been added.

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	classes.	
USDoI - 30	Page 3.3-20. The area potentially impacted by underwater detonations may be less than one percent of the study area, but this is a mischaracterization of the potential impact. For example, coral reef habitat is a small percentage of the study area, but impact to significant coral reef should not be compared to the entire study area that contains significant open ocean habitat. We recommend correcting this throughout the EIS.	The "1 percent" argument was used as a generalization for the general public rather than an extremely small decimal. The actual calculation of impact is presented in Section 3.3 (Marine Habitats) and has been added in Section 3.8 (Marine Invertebrates) to illustrate the level of localized impacts. All detonations in shallow waters are restricted to Agat Bay Mine Neutralization Site, Outer Apra Harbor Underwater Detonation (UNDET), and Piti Point Mine Neutralization sites, which are located in waters that are previously disturbed, and are not known to support large invertebrate communities.
USDoI - 31	Page 3.3-23. The DEIS states "Some vessels, such as amphibious vehicles, would intentionally contact the seafloor in the surf zone." The term surf zone is not the appropriate terminology. The terms reef crest and reef flat should be used. These terms are significant as the biological communities associate with them can be significant in some situations. The term surf zone is a more general term used and is not meaningful from an impact analysis perspective.	The Final EIS/OEIS discusses the amphibious landings which may occur on designated beaches on Tinian. The Final EIS/OEIS has been updated to include the terms reef crest and reef flat in replacement of surf zone. This change was made in Section 3.3.3.2.1 (Impacts from Vessels and In-Water Devices) as well as globally throughout the document.
USDoI - 32	Page 3.3-35, 3.3.4. Summary of Potential Impacts (Combined Impacts of All Stressors) on Marine Habitats. Information and/or data to support habitat utilized by underwater detonation will primarily be soft sediment needs to be added.	The Final EIS/OEIS includes Figure 3.3-6 which shows the underwater detonation sites and Figures 3.3-1 and 3.3-2 which show the distribution of marine habitats in the area.
USDoI - 33	**Sea Turtles** Page 3.5-1. Amphibious landings which could directly impact turtle nesting areas are not addressed in the sea turtle section and are poorly address throughout the DEIS. We recommend adding a section on amphibious vehicle landing, including the proposed locations of landing, time of year, number of vehicles and any proposed mitigation measures in the EIS.	Section 3.5 (Sea Turtles) of the Final EIS/OEIS has been updated to address amphibious landing activities and sea turtle nesting on Tinian. Additionally, Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) has been updated with mitigation measures that reduce or avoid impacts on nesting sea turtles. These measures were included in the USFWS Biological Opinion provided to the Navy to conclude Section 7 ESA consultation. During consultation with USFWS, the Navy determined that Unai Chulu, Unai Babui, and Unai Dankulo would not be designated as landing zones for mechanized amphibious vehicles (AAVs)

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		at this time. Should mechanized amphibious vehicles (AAV and LCAC) landings on those beaches become necessary, Navy will reinitiate consultation for those activities.
USDoI - 34	**Marine Birds** Page 3.6-14. Figure 3.6-3: Offshore Seabird Foraging Concentrations, Observed in summer 2008. This figure highlights concentration of foraging area for seabirds around Saipan and Tinian. We recommend you include avoidance and minimization measures for seabirds in known foraging areas in both near shore and off shore waters.	There are no specific at-sea mitigations for seabirds; however, many of the at-sea compliance measures for marine mammals and at-sea restrictions of Navy activities afloat (listed in OPNAVINST 5090.1D) reduce the impact of military training and testing activities. Namely, the Navy avoids areas where marine mammal foraging may occur (upwellings) which may also attract seabirds, as well as other restrictions cited in OPNAVINST 5090.1D for garbage handling at sea. Figure 3.6-3 has been removed from the document as this figure only showed a temporary foraging location (foraging areas are more dynamic spatially and temporally than suggested on the figure).
USDoI - 35	Page 3.6-17. Figure 3.6-4: Known Breeding Locations for Seabirds on Military Lands on Guam. Data reported for the graph is from 2005. Please revise this information with current survey data.	The locations were mapped on NOAA "environmental sensitivity maps" developed in 2005. Joint Region Marianas environmental personnel provided confirmation of the data reported on the map during internal draft reviews of the EIS/OEIS (throughout 2012 and 2013).
USDoI - 36	Page 3.6-22. Data indicated a significant reduction in the local population and potentially the extirpation of the great frigatebird colony on FDM. We are concerned about the loss of one of the last breeding colonies of frigatebirds in the Mariana Islands, and recommend the EIS include mitigation measures to offset impacts to this species.	The data indicate that great frigatebird breeding on FDM is sporadic and rare. Lusk et al. (2000) visited the island in November 1996 and confirmed breeding on FDM for the great frigatebird, while others have reported the great frigatebird as only roosting on FDM (Reichel 1991, Reichel 1988). The most recent report of a great frigatebird, however, was a single individual observed in December 2011.
USDoI - 37	Page 3.6-20. Figure 3.6-6: Seabird Rookery Locations on Farallon de Medinilla. The color coding used for this figure is difficult to read. Based on the current color coding we were unable to adequately tell where the great frigatebird colony occurred on FDM. We recommend using a clearer color coding system to make the rookery areas more visible in relation to the training areas and using a more current data set.	The rookery locations observed by Lusk in 1996 and reported in Lusk et al. (2000) appear to be similar to updates made based on the 17 years of data collection conducted by the Navy. Having said this, the Navy has updated the rookery map based on field observations by biologists during the periodic surveys (monthly, now quarterly surveys) of FDM.
USDoI - 38	Page 3.6-21. The three figures for the masked booby, red-	The Final EIS/OEIS includes and expanded discussion on the distribution

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	footed booby and brown booby do not provide adequate information to conclude there are no impacts to these species as a result of military training activities. The raw population data is not adequate to determine if military activities are impacting nesting seabird populations. If possible, we recommend a more thorough analysis be completed for each of these species to determine if there is (or isn't) a relationship between military activity and population trends through time. This analysis should take into account duration, intensity and local of training activities relative to the aforementioned species. An additional analysis of population trends through time needs to be conducted on the raw data to determine if these three species populations have remained stable, increased or decreased through time on FDM.	data of species chosen for focused analysis, which has included subspecies distribution in the western and central Pacific. Based on this information, restricting the definition of "population" to the colonies located within the Mariana archipelago is not appropriate. In addition, Final EIS/OEIS includes a statistical analysis of 17 years of monthly and quarterly bird counts of the three booby species that nest on FDM. The results of this analysis are included in Section 3.6.2.6 (Rookery Locations and Breeding Activities within the Mariana Islands Training and Testing Study Area). It should be noted that the three booby species are easily seen (and therefore counted) reducing uncertainty in the survey effort. The results of the statistical analysis do not show any significant changes in population trends for the three booby species included in the analysis. The conclusions for increased numbers of activities on FDM as not adversely impacting seabird populations is sound, as no new bombing areas would be used. In other words the same restrictions listed and described in COMNAVMARINST 3500.4A would be carried forward under all alternatives.
USDoI - 39	Page 3.6-52. Under MBTA regulations (50 C.F.R. Part 21) population's impacts must be addressed at the local population level for each alternative. We recommend re-assessment of project impacts to seabird populations based on local level populations and not global population levels.	Although the global populations of various species are discussed in Section 3.6 (Marine Birds), the Final EIS/OEIS has been updated to include an expanded discussion of the distribution data of species chosen for focused analysis, including subspecies distributions in the western and central Pacific. Based on this information, restricting the definition of "population" to the colonies located within the Mariana archipelago is not appropriate.
USDoI - 40	Page 3.6-62. The stress and disturbance to nesting seabirds caused by the significant increase in frequency of flyover events is not adequately addressed in the DEIS. Disturbance caused by flyovers elicits a short-term behavioral response from nesting birds on FDM. With the increase in frequency in flyovers there will be an increase of behavioral responses which may over the long-term have negative impacts to the overall health of the birds.	The Navy agrees that low altitude flyovers of FDM may illicit short-term responses exhibited by nesting and roosting seabirds. Final EIS/OEIS includes a statistical analysis of 17 years of monthly and quarterly bird counts of the three booby species that nest on FDM. The results of this analysis are included in Section 3.6.2.6 (Rookery Locations and Breeding Activities within the Mariana Islands Training and Testing Study Area). It should be noted that the three booby species are easily seen (and therefore counted) reducing uncertainty in the survey effort. The results of the statistical analysis do not show any significant changes in population trends for the three booby species included in the analysis. The conclusions for increased numbers of activities on FDM as not

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		adversely impacting seabird populations is sound, as no new bombing areas would be used. In other words the same restrictions listed and described in COMNAVMARINST 3500.4A would be carried forward under all alternatives.
USDoI - 41	Page 3.6-80a. The DEIS does not address the impacts of shore bombardments to rookery areas. Avoidance of rookery areas by establishing designated range area for ordinance is mentioned as a minimization measure. Shore bombardment targets cliff line areas where birds nest. Firing at cliff lines has caused mass wasting on the island and loss of available nesting habitat for birds. If the proposed military training activities result in further wasting of cliff line and cause the subsequent loss of seabird nesting habitat, mitigation for impacts to seabirds should be included in the EIS.	Naval surface firing support target locations are fixed locations defined in the Marianas Training Manual/COMNAVMARIANASINST 3500.4A, and targeting any other location is a violation of this instruction. These locations were discussed during previous consultations with the USFWS and NEPA analyses. Further, based on the monthly and quarterly surveys of FDM conducted over the past 17 years, the rookery locations identified by Lusk appear to be similar to those observed today, and most of the nesting activity occurs along the eastern cliffs where the cliff targets are not located.
USDoI - 42	Page 3.6-80b. In the DEIS the Navy has come to the conclusion that the increase of rounds per year is unlikely to endanger breeding activities of the seven MBTA species that occur on FDM. This determination is based on surveys that have been conducted on FDM over a 12-year period and that existing conservation measures and targeting restrictions have been adequate. The Service feels this remark cannot be supported by the data provided in the DEIS. The Service recommends that past DoN seabird survey results for FDM be independently analyzed and reviewed. This effort should be conducted in close coordination with the Service.	Please see response to USDoI-38. The Navy is currently preparing natural resource technical reports that include statistical analyses of the survey data on FDM and other locations. The Navy will share these documents with the USFWS and local resource agencies.
USDoI - 43	Page 3.6 82. Disturbance caused by increasing the frequency of bombing events and the associated impacts to nesting birds and habitat need to be addressed in the EIS.	Naval surface firing support target locations are fixed locations defined in the Marianas Training Manual/COMNAVMARIANASINST 3500.4A, and targeting any other location is a violation of this instruction. Further, these locations were identified in consultation with the USFWS for previous Section 7 consultations and NEPA analyses. Based on the monthly and quarterly surveys of FDM conducted over the past 17 years, the rookery locations identified by Lusk appear to be similar to those observed today, and most of the nesting activity occurs along the

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		eastern cliffs where the cliff targets are not located.
USDoI - 44	Page 3.6-83. The DEIS does not provide adequate information to conclude that an increase in training tempo will not have a negative impact nesting seabirds on FDM. A first step to answering this question would be an independent analysis and review of FDM seabird survey results conducted in close coordination with the Service. If this analysis includes an assessment of short and long-term impacts of past training tempo some inference related to impacts could be made. As training tempo appears to be increasing significantly, there is a concern that training tempo will reach of threshold where certain seabird species may abandon FDM as a nesting site (e.g. great frigatebird).	The Navy is currently preparing natural resource technical reports that include statistical analyses of the survey data on FDM and other locations. The Navy will share these documents with the USFWS and local resource agencies. The Final EIS/OEIS includes and expanded discussion on the distribution data of species chosen for focused analysis, which has included subspecies distribution in the western and central Pacific. Based on this information, restricting the definition of "population" to the colonies located within the Mariana archipelago is not appropriate. In addition, Final EIS/OEIS includes a statistical analysis of 17 years of monthly and quarterly bird counts of the three booby species that nest on FDM. The results of this analysis are included in Section 3.6.2.6 (Rookery Locations and Breeding Activities within the Mariana Islands Training and Testing Study Area). It should be noted that the three booby species are easily seen (and therefore counted) reducing uncertainty in the survey effort. The results of the statistical analysis do not show any significant changes in population trends for the three booby species included in the analysis. The conclusions for increased numbers of activities on FDM as not adversely impacting seabird populations is sound, as no new bombing areas would be used. In other words the same restrictions listed and described in COMNAVMARINST 3500.4A would be carried forward under all alternatives. The data indicate that great frigatebird breeding on FDM is sporadic and rare. Lusk et al. (2000) visited the island in November 1996 and confirmed breeding on FDM for the great frigatebird, while others have reported the great frigatebird as only roosting on FDM (Reichel 1991, Reichel 1988). It is highly unlikely that great frigatebird breeding on FDM represents a geographically or temporally stable population.
USDoI - 45	**Marine Vegetation** Page 3.7-1, 3.7.1. Introduction. We recommend specifically	The Final EIS/OEIS addresses flowering marine plants in the Study Area, which only include seagrasses and mangroves.

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	highlighting sea grass instead of simply flowering plants.	
USDoI - 46	**Marine Invertebrates** Page 3.8-52. The DEIS should state the number of detonations anticipated that will not be near the surface and may have impacts to benthic resources. The anticipated depth compared to the water depth should also be discussed in greater detail. This will allow better assessment of these impacts.	Section 3.8 (Marine Invertebrates) has been updated with additional information on total impact area as a result of underwater detonations. However, since all detonations in shallow waters are restricted to Agat Bay Mine Neutralization Site, Outer Apra Harbor Underwater Detonation (UNDET), and Piti Point Mine Neutralization sites, which are located in waters that are previously disturbed and are not known to support large invertebrate communities, incorporating data on anticipated depth compared to water depth is not needed for purposes of analysis.
USDoI - 47	Page 3.8-54. The detonation sites should be further refined geographically. Stating they can be anywhere in the Mariana littoral zone is rather broad and includes areas where the impact could be significant. We recommend discreet locations of detonations be clearly defined. This information will allow better assessment of impacts.	Under the No Action Alternative, up to 50 detonations are proposed annually in shallow waters of Study Area The Final EIS/OEIS has been updated to note that these 50 detonations in shallow waters are restricted to Piti Point Mine Neutralization Site, Agat Bay Mine Neutralization Site and Outer Apra Harbor Underwater Detonation (UNDET) sites. As described in Chapter 2 of the Final EIS/OEIS, the remainder of the underwater detonations can occur beyond 3 nm within the Study Area. In order to maintain flexibility in training, refinement of location, or restriction of locations for these activities is not feasible.
USDoI - 48	Page 3.8-55, 3.8.3.1.2.2. Alternative 1, Training Activities. Further analysis should be conducted on the potential impact to deep-water corals. Many deep-water coral species are fragile and may be impacted from military training activities easier than shallow corals. In addition, it is well documented that some deep-water corals (for example, gold corals of the genus Geradia can be 2,000 years old).	The Final EIS/OEIS indicates that if corals are present in areas overlapping with training and testing activities using explosives, shallow-water corals, hardbottom, and deep-water corals could be impacted by explosions. The Navy is formally consulting with NMFS concerning potential impacts of military training and testing activities on corals proposed for ESA-listing status. The Navy has updated the Final EIS/OEIS to be consistent with the USFWS Biological Opinion provided to the Navy to conclude the Section 7 ESA consultation process.
USDoI - 49	Page 3.8-56. Testing Activities. We recommend the EIS state the actual increase of high-explosives of this alternative over the No Action Alternative. This will allow easier comparison of impacts between alternatives.	Chapter 2 (Description of Proposed Action and Alternatives) and 3.0 (Introduction) of the Final EIS/OEIS present the detailed information on size and number of explosives used for each alternative. Where relevant, Section 3.8 (Marine Invertebrates) has been updated to include this information.

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USDoI - 50	Page 3.8-57. The DEIS states "However, training activities that include bottom-laid underwater explosions are infrequent (only about 50 explosions per year)…" We recommend this estimation be more clearly defined throughout the EIS. This will allow easier comparison of impacts between alternatives.	Under the No Action Alternative, up to 50 detonations are proposed annually in shallow waters of MITT, and the Final EIS/OEIS indicates that these 50 detonations are restricted to Piti Point Mine Neutralization Site, Agat Bay Mine Neutralization Site and Outer Apra Harbor Underwater Detonation (UNDET) sites. As described in Chapter 2 of the Final EIS/OEIS, the remainder of the underwater detonations can occur beyond 3 nm within the Study Area. In order to maintain flexibility in training, refinement of location, or restriction of locations for these activities is not feasible.
USDoI - 51	Page 3.8-57. Testing Activities. We recommend the EIS state the actual increase of high-explosives of this alternative over the No Action Alternative. This will allow easier comparison of impacts between alternatives.	Chapter 2 (Description of Proposed Action and Alternatives) and 3.0 (Introduction) of the Final EIS/OEIS present the detailed information on size and number of explosives used for each alternative. Where relevant, Section 3.8 (Marine Invertebrates) has been updated to include this information
USDoI - 52	***Terrestrial Species and Habitats*** Page 3.10-1. Any activity that involves low-flying (<3000 ft. above sea level) aircraft including unmanned aircraft over Rota may negatively affect nesting Mariana crows and Rota bridled white-eyes (Zosterops rotensis), and Mariana fruit bats as a result of aircraft noise, vibration and fuel exhaust. We recommend these activities be avoided.	The Navy clarified overflight restrictions over and near Rota. Military aircraft when not performing operations (e.g., requests for search and rescue from the U.S. Coast Guard or local authorities) or during landings and takeoffs from the Rota International Airport, will maintain a 1,000-foot exclusion bubble from the coastline and above ground level on the entire island of Rota. Further, during the Section 7 ESA consultation process, the Navy conferred with the USFWS to determine the locations of bat colonies on Rota. While it would not be prudent to show the locations of bat colonies in a public document, the Navy can say that training activities are not proximate to fruit bat locations. The USFWS will update JRM when colony locations change, as these locations can be dynamic.
USDoI - 53	Page 3.10-1. In the DEIS critical habitat on Rota has been designated for the Mariana crow but is not recognized in the last bullet on this page.	The text has been corrected in the text box to indicate that critical habitat for the Mariana crow has been designated on Rota.
USDoI - 54	Page 3.10-2 In the DEIS for the second to last bullet in the blue highlighted area, if air and seaport transportation is increased beyond the current level, the DoD will need to address	The U.S. Navy recognizes the importance of biosecurity, ecological integrity, and resiliency of island ecosystems to the potential introduction of invasive species to the Mariana Islands associated with military training and testing. The Navy has a number of policies in place

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	increase in activities and invasive species interdiction efforts.	to prevent, interdict, and control invasive species introductions in both terrestrial and marine environments. Specific policies for marine invasive species can be found at: OPNAVINST 5090.1D Chapter 35-3.19. (Ship and Ballast Water), 5090.1D Chapter 35-3.1 (Environmentally Sound Ships), and 5090.1D Chapter 12-3.10 (Invasive Species). This information has been added to Section 3.10 (Terrestrial Species and Habitats) as part of an overall invasive species discussion that includes terrestrial, marine, and freshwater invasive species. This additional text includes a conceptual pathway analysis that highlights potential pathways for BTS introduction from Guam and other BTS source populations (e.g., northern Australia) to other islands in the Marianas that support training described in this EIS/OEIS. It should be noted that the Navy or other military services does not have jurisdiction of other potential pathways for introduction (e.g., commercial activities, U.S. mail, non-DoD personnel).
USDoI - 55	Page 3.10-2. Impacts to lands on Rota are poorly defined and vague in the DEIS. We recommend a map laying out all potential areas to be used for military activities on Rota.	Figure 3.10-2 of the Final EIS/OEIS was updated to show the potential training locations on Rota.
USDoI - 56	Page 3.10-3-4. The table lists eight bird species found within the MITT study area and the text on page 3.10-3 states six species of birds listed in the table. Please correct this error.	This text has been corrected in the Final EIS/OEIS.
USDoI - 57	Page 3.10-4. Table 3.10-1 Indicates that the Mariana Crow is extirpated from the MITT study area. Please correct this to state that it is present in Rota.	This text has been corrected in the Final EIS/OEIS.

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USDoI - 58	Page 3.10-8. Some species of birds listed in the Birds of Conservation Concern for U.S. Pacific Islands that breed within the study area were left off the list: Bridled white-eye, Micronesian Myzomela, two sub-species of Rufous Fantail (mariae sp. and saipanensis sp.). We recommend they be added and listed into Table 3.10-3. In addition, "none of the birds are known to breed on FDM," is stated in the DEIS. There is a paucity of terrestrial data available for FDM. A 5.5 hour visit to the island in 1996 cannot be used to justify this statement. We recommend DOD conduct a more thorough survey of terrestrial birds in order to determine what species occur there and how they use the island so a more conclusive impact statement can be made.	Table 3.10-3 of the Final EIS/OEIS has been updated to include the bridled white-eye, Micronesian myzomela, two sub-species of rufous fantail. It should be noted that the Navy does not train in habitat areas for these species. Due to concerns regarding unexploded ordnance on FDM, species-specific surveys are not feasible.
USDoI – 59	Page 3.10-9. Table 3.10-3: United States Fish and Wildlife Service Birds of Conservation Concern and Breeding Terrestrial Birds within the Study Area. The table leaves out the Saipan Marpi Maneuver Area for almost all the species in the Breeding locations on DOD Owned or Leased Property column. We recommend adding the Saipan Maneuver area to this table. Page 3.10-10-11. Table 3.10-4: Major Vertebrate Taxonomic Groups. a) Some areas proposed for use are not addressed in the Presence in Study Area column such as the Marpi Maneuver Area for the swiftlets and soneyeaters and Rota for the drongo and crows/jays. b) For the Old World flycatchers, Rota needs to be removed from the Description column. c) In the white-eyes row the Bridled white-eyes are 2 distinct species, Rota White-eye found on Rota and Bridled White-eye found on Saipan and Tinian.	Table 3.10-3 in the Final EIS/OEIS lists DoD owned or leased properties, as well as other areas within the Study Area where these species occur. The Saipan Marpi Maneuver Area is not owned or leased by the DoD. Rather, it is used by agreement with local stakeholders. In this way, Saipan is similar to Rota (an island where limited training occurs, in agreement and coordination with local non-DoD stakeholders). Table 3.10-4 in the Final EIS/OEIS has been updated to include additional species distributions, as per comment (except for specific mention for the Saipan Marpi Maneuver Area).
USDoI - 60	Page 3.10-19, 3.10.2.1.2. Rota. Please define "other areas in conjunction with local law enforcement" because it is impossible to determine impacts of an area when it is not defined.	Figure 3.10-2 of the Final EIS/OEIS was updated to show the potential training locations on Rota.

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USDoI - 61	Page 3.10-20. The I'Chechon Bird Sanctuary is on the southeastern coastline not the northeastern coastline as stated in the DEIS. The bird sanctuary is now part of the Mariana Crow Conservation Area which runs along the coast from the northeast to the southeast of the island. Please correct this error.	The text has been modified in the Final EIS/OEIS in accordance with the comment.
USDoI - 62	Page 3.10-21. Additional wetlands found in the Mahlang and Bateha areas on Tinian need to be added to the section 3.10.2.1.3.4 Wetlands. This is important for planning necessary mitigation or avoidance measures.	The text has been modified in the Final EIS/OEIS in accordance with the comment.
USDoI - 63	Page 3.10-22, 3.10.2.1.4 Saipan Marpi Maneuver Area. In the DEIS, the Marpi Manuever Area is not adequately described with the justification that the area is rarely used. If use occurs in an area, then an adequate description of flora and fauna needs to be completed. We recommend including a description of Marpi's resources.	The Navy believes the descriptions in this section are adequate to assess potential impacts on species and habitats within the Saipan Marpi Maneuver Area. It is characterized by tangantangan thickets and elephant grass meadows with some limestone forest areas in the southwestern portion of the facility. In context, a recent training activity occurring in 2014 was limited to the hard surface platforms (concrete).
USDoI - 64	Page 3.10-27, 3.10.2.2.2. Rota. In the DEIS areas of use for Rota and not adequately defined. These areas need to be outlined and an adequate description of flora and fauna needs to be completed.	Figure 3.10-2 of the Final EIS/OEIS was updated to show the potential training locations on Rota. These locations have been clarified through the Section 7 ESA consultation process and verified as occurring in developed areas. Training does not occur in habitat areas; therefore, only general descriptions of Rota's flora and fauna are required.
USDoI - 65	Page 3.10-28. As written, the DEIS describes the delisting of the Tinian Monarch as being done by the CNMI government. Please update with accurate information about federal delisting by the Service.	The text has been clarified in the Final EIS/OEIS in accordance with the comment.
USDoI - 66	Page 3.10-29, 3.10.2.2.4. Farallon de Medinilla. In the DEIS most reports for mammals, reptiles, amphibians, and invertebrates are bases on incidental observations. We recommend the DOD conduct complete surveys on FDM to determine species presence, distribution, use of the island in order to determine impacts to these species from military	Section 3.6 (Marine Birds), Section 3.10 (Terrestrial Species and Habitats) and Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) in the Final EIS/OEIS have been updated with additional information from COMNAVMARIANASINST 3500.4A. Additional surveys of the island are not feasible due to concerns over unexploded ordnance.

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	activities.	
USDoI - 67	Page 3.10-30, 3.102.3.1.2. A citation needs to be added to the statement that Rota supports 121 mature trees. According to CNMI Forestry's most current estimate, there are believed to be less that 40 mature trees left.	The text has been modified in the Final EIS/OEIS in accordance with the comment.
USDoI - 68	Page 3.10-30, 3.10.2.3.2.4. Status within the Mariana Islands Training and Testing Study Area. Nesogenes has also been found on As Matmos Cliffs. We recommend you update the information in the EIS.	Section 3.10.2.3.2.4 (Status within the Mariana Islands Training and Testing Study Area) has been modified in the Final EIS/OEIS in accordance with the comment.
USDoI - 69	Page 3.10-31, 3.10.2.3.3.2. Population and Abundance. Add literature citations to this section so that readers and commenters are able to verify information.	Section 3.10.2.3.3.2 (Population and Abundance) in the Final EIS/OEIS has been updated. USFWS recovery plan information is used for species status information.
USDoI - 70	Page 3.10-32, 3.10.2.3.4.4. Status within the Mariana Islands Training and Testing Study Area. The DEIS does not adequately address foraging areas for swiftlets in general and specifically within the Saipan Marpi Maneuver Area. We recommend addressing and identifying foraging sites within the study area.	There is not much data available for foraging habitats and use for Mariana swiftlets. It is likely that swiftlets use the munitions storage area, as well as surrounding areas. They are not known to occur in northern Guam locations (e.g., Andersen AFB or Finegayan). To address foraging, the text in Section 3.10.2.3.4.4 (Status within the Mariana Islands Training and Testing Study Area) has been updated with this statement: Foraging likely occurs throughout the Navy Base Guam Munitions Site and surrounding locations.
USDoI - 71	Page 3.10-34, 3.10.2.3.5.1. Status and Management. There are no recent typhoons to account for the "devastated forest habitat". Although there has been some habitat loss due to development, habitat is currently not the limiting factors for crow. There is current literature for this species that would update and more accurately reflect the current situation for this species. We recommend this section be re-written for the portion on Rota.	The text has been modified in the Final EIS/OEIS in accordance with the comment.
USDoI - 72	Page 3.10-36, 3.10.2.3.5.3. Biology, Ecology, and Behavior. Add literature citations for the information used in this	The text has been modified in the Final EIS/OEIS in accordance with the comment. Nesting references have been clarified because of apparent

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	section. Clarification also needs to be made when referring to nesting habitats on Guam vs. Rota.	differences between preferred nest trees.
USDoI - 73	Page 3.10-37, 3.10.2.3.6.4. Status within the Mariana Islands Training and Testing Study Area. Additional wetlands that occur within the Mahlang and Bateha areas need to be added to this section.	The text has been modified in the Final EIS/OEIS in accordance with the comment.
USDoI - 74	Page 3.10-40, 3.10.2.3.8.4. Status within the Mariana Islands Training and Testing Study Area. The Saipan Marpi Maneuver Area needs to be addressed in this section.	The text has been modified in the Final EIS/OEIS in accordance with the comment.
USDoI - 75	Page 3.10-53, 3.10.3.1.1.2. Alternative 1. Training Activities. In the DEIS the expected impacts for all three Alternatives is expected to remain the same. We do not concur with this statement. There will be a significant increase in munitions use proposed, which does not address disturbance created through increased frequency of use. Please include analyses for these additional impact.	The Navy's analysis has concluded that all Micronesian megapodes and fruit bats on FDM may be adversely affected by all alternatives.
USDoI - 76	Page 3.10-55, 3.10.3.1.2.1. No Action Alternative. Training Activities. In the DEIS, anecdotal evidence of Mariana crow behavior in relation to noise is noted. It is unlikely two male crows would be attending a nest as stated in the document. If two males were attending a nest, then they are unlikely to be a good representation of the wild population and should not be used as an example. In addition, Rota crows are extremely sensitive to noise disturbance as cited by Morton 1996. We recommend anecdotal evidence not be used as justification for the conclusion that there would no impacts to crows from military activities.	A summary of Morton's findings from 1996 have been added to the Final EIS/OEIS. At the time of this study, 8 pairs of Mariana crows remained on Guam, 4 pairs had established territories under low altitude flight lines at Andersen AFB. Crows responded to some low-altitude aircraft overflights (less than 600 ft. [183 m]) with distress and flight, which disrupted nest building activities, incubation of eggs, and nest attendance. The text has been modified in the Final EIS/OEIS in accordance with the comment.
USDoI - 77	Page 3.10-56. In the DEIS it states that low altitude over flights do not occur over critical habitat or conservation areas, however, low altitude flights by military aircraft has been observed over these areas at least twice since 2009. As	Removing Rota as a location is not feasible for training purposes. Figure 3.10-2 of the Final EIS/OEIS was updated to show the potential training locations on Rota. Military aircraft when not performing operations (e.g., requests for search and rescue from the U.S. Coast Guard or local

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	expressed above, Rota is important for the survival and recovery of fruit bats and crows. We recommend removing Rota as a site for training activity, especially low altitidue flights because of their potential impacts to crows and bats...	authorities) or during landings and takeoffs from the Rota International Airport, will maintain a 1,000-foot exclusion bubble from the coastline and above ground level on the entire island of Rota. During the Section 7 ESA consultation process, the Navy conferred with the USFWS to determine the locations of bat colonies on Rota. While it would not be prudent to show the locations of bat colonies in a public document, the Navy can say that training activities are not proximate to the fruit bat locations. The USFWS will update JRM when colony locations change, as these locations can be dynamic.
USDoI - 78	Page 3.10-56. In the DEIS, Mariana fruit bats are stated to mainly occur in the Sabana area on Rota. This information needs to be updated as fruit bats occur throughout the island and locations may change through time. Proposed activities for Rota need to address this fact and the EIS needs to be updated to address this issue.	The USFWS PIFWO representative on Rota provided the Navy with fruit bat colony locations on Rota, and the text has been modified accordingly. Updates have been made to Section 3.10.3.1.2.1 to indicate that the Sabana supports a colonial roost. It should be noted that locations of these colonies are not specified in the Final EIS/OEIS or shown on a map, as the Final EIS/OEIS is a public document. The Navy appreciates the technical support from the USFWS regarding species status updates on Rota.
USDoI - 79	Page 3.10-56&57. We disagree with the statement that adverse impacts to Mariana fruit bat will be insignificant because activities will be infrequent. It only takes as single low flying aircraft over a fruit bat colony to cause a significant disturbance event to result in roost abandonment. Impacts from low flying aircraft could include the following: flushing of the colony resulting in pups being dropped and fetuses miscarried by panicked mothers, high stress loads for fleeing individuals, injury from bats colliding with each other as well as collisions with cliffs and trees, aircraft strikes, and abandonment and subsequent starvation of non-volant young. In addition, the majority of fruit bats occur in only 2-4 colonies so disturbance of a single colony could result in impacts to the overall population. We ask that you revise your analysis on the impacts to the Mariana fruit bat in the EIS.	Figure 3.10-2 of the Final EIS/OEIS was updated to show the potential training locations on Rota. The Final EIS/OEIS has been updated to be consistent with the conclusions and measures provided in the USFWS Biological Opinion.
USDoI - 80	Page 3.10-57. Due to the high sensitivity to noise, we recommend over flights over Rota be completely avoided. If	Figure 3.10-2 of the Final EIS/OEIS was updated to show the potential training locations on Rota. Military aircraft when not performing

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	the DOD continues to consider Rota for military training activities, then the EIS should provide the location of other terrestrial areas that potentially would be used for military training on Rota; identify low-level flight routes and describe the likelihood of aircraft striking fruit bats, and estimate the number of military trainings and low-level flights that would occur on Rota.	operations (e.g., requests for search and rescue from the U.S. Coast Guard or local authorities) or during landings and takeoffs from the Rota International Airport, will maintain a 1,000-foot exclusion bubble from the coastline and above ground level on the entire island of Rota. During the Section 7 ESA consultation process, the Navy conferred with the USFWS to determine the locations of bat colonies on Rota. While it would not be prudent to show the locations of bat colonies in a public document, the Navy can state that training activities are not proximate to fruit bat locations. The USFWS will update JRM when colony locations change, as these locations can be dynamic.
USDoI - 81	Page 3.10-58, 3.10.3.2.1. Impacts from Aircraft and Aerial Target Strikes. Any activity that includes use of helicopters or any other aircraft at low altitudes over land on Guam, Tinian, Saipan, and especially Rota, presents the possibility to aircraft strikes that includes fruit bats. Fruit bats can and do occur over 500ft. We recommend addressing air strikes to include fruit bats in this section and throughout the DEIS.	Figure 3.10-2 of the Final EIS/OEIS was updated to show the potential training locations on Rota. Military aircraft when not performing operations (e.g., requests for search and rescue from the U.S. Coast Guard or local authorities) or during landings and takeoffs from the Rota International Airport, will maintain a 1,000-foot exclusion bubble from the coastline and above ground level on the entire island of Rota. During the Section 7 ESA consultation process, the Navy conferred with the USFWS to determine the locations of bat colonies on Rota. While it would not be prudent to show the locations of bat colonies in a public document, the Navy can state that training activities are not proximate to fruit bat locations. The USFWS will update JRM when colony locations change, as these locations can be dynamic.
USDoI - 82	Page 3.10-64. In the DEIS it states “no terrestrial bird species likely breeds on FDM.” Due to limited on-the-ground survey data for FDM this claim cannot be substantiated.	This statement has been removed from the document.
USDoI - 83	Page 3.10-67&68. No surveys for endangered species of have been conducted in the Saipan Marpi Maneuver Area. In order to understand potential effects to endangered species in relation to military activities, surveys need to be completed to determine their presence, distribution and use of the area.	The USFWS PIFWO representative on Saipan has provided the Navy with locations of Micronesian megapode, Mariana swiftlet, and nightingale reed-warbler records dating back several years within the Marpi Maneuver Area. While these locations are not shown in the Final EIS/OEIS, the locations were shown on maps submitted to the USFWS in April 2014 as part of the initial submission of the consultation package, which resulted in the USFWS providing the Navy with a Biological Opinion. The Navy appreciates the technical assistance to identify

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		special status species distributions on Saipan.
USDoI - 84	Page 3.10-69, 3.10.3.2.4. Wildfires. In the DEIS wildfires are only addressed for activities on FDM. Fires can happen from any activity accidentally especially in the dry season. DoD needs to address this in the DEIS for all areas where military activities will occur on land. We recommend a fire plan be in place for the different areas used on Tinian and Saipan.	Section 3.6 (Marine Birds), Section 3.10 (Terrestrial Species and Habitats) and Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) in the Final EIS/OEIS have been updated with additional information from COMNAVMARIANASINST 3500.4A. These updates include a summary of the wildland fire prevention and response planning for Guam and Tinian, with a focus on exercise planning. Exercise planning on Guam, Tinian, and Saipan must be in adherence with the wildland fire planning procedures included in COMNAVMARIANASINST 3500.4A. The only location where military activities have ignited wildland fires is on FDM.
USDoI - 85	Page 3.10-72, 3.10.3.3.1.1. No Action Alternative, Alternative 1, and Alternative 2. Training Activities. The DEIS does not address the increase of tempo which will require an increase in inspection for BTS. An increase in temp of activities will require increased inspections which may strain the current inspections for staff based on Saipan, Tinian and Rota. We recommend the DOD address how they will increase the local capacity for inspections due to the increase of the tempo of military exercises.	The U.S. Navy recognizes the importance of biosecurity, ecological integrity, and resiliency of island ecosystems to the potential introduction of invasive species to the Mariana Islands associated with military training. The Navy has a number of policies in place to prevent, interdict, and control invasive species introductions in both terrestrial and marine environments. Specific policies for marine invasive species can be found at: OPNAVINST 5090.1D Chapter 35-3.19. (Ship and Ballast Water), 5090.1D Chapter 35-3.1 (Environmentally Sound Ships), and 5090.1D Chapter 12-3.10 (Invasive Species).This information has been added to Section 3.10 (Terrestrial Species and Habitats) as part of an overall invasive species discussion that includes terrestrial, marine, and freshwater invasive species. This additional information includes a conceptual pathway analysis that highlights potential pathways for BTS introduction from Guam and other BTS source populations (e.g., northern Australia) to other islands in the Marianas that support training described in this EIS/OEIS. The Navy maintains that introduction of invasive species associated with military training activities is low. It should be noted that the Navy or other military services does not have jurisdiction of other potential pathways for introduction (e.g., commercial activities, U.S. mail, non-DoD personnel). Section 5.6 (Terrestrial Resources) of the EIS/OEIS was updated and includes brown treesnake interdiction and control and other invasive species biosecurity measures.

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USDoI - 86	Page 3.10-78. Table 3.10-7: Summary of Endangered Species Act Effects Determination for Endangered Species Act-Listed Terrestrial Species. We do not concur with the NLAA determination for fruit bats and crow on Rota.	The Navy has updated the Final EIS/OEIS based on USFWS Biological Opinion and has updated the final effects determinations. In addition, the Final EIS/OEIS includes all reasonable and prudent measures, and terms and conditions that were set forth in the applicable Biological Opinion.
USDoI – 87	**Invasive Species** General (no specific page). The Service recommends that the DoN include the following brown tree snake (BTS) interdiction and control measures in the EIS: 1. The DoN will collaborate with the Service, U.S. Department of Agriculture (USDA) - Wildlife Services and CNMI Department of Land and Natural Resources (DLNR) to develop and implement operating instructions related to BTS interdiction and all proposed DoD operations in the CNMI. These operating instructions would require Service approval and should be completed prior to initiation of the proposed action. 2. The DoN will route inbound personnel and cargo for the proposed military exercises directly to CNMI training locations to avoid Guam seaports and airfields. If Guam cannot be avoided, the USN will implement appropriate interdiction methods that include repetitive inspections (i.e. a second inspection on the receiving island) for all activities. Interdiction methods and protocols would be coordinated with USDA - WS, CNMI -DLNR, and the Service. 3. If cargo and aircraft and vessels leave from Guam and are associated with the proposed project, the DoN will implement 100 percent inspection of all outgoing cargo and aircraft. Inspections will be performed with USDA - WS quarantine officers and dog detection teams to meet 100 percent inspection goals for training activities. The Service and USDA will assist in the development of protocols for implementation	Section 5.6 (Terrestrial Resources) of the EIS/OEIS was updated and includes brown treesnake interdiction and control and other invasive species biosecurity measures.

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	of interdiction and control methods aimed at controlling BTS as related to the proposed military training activities. 4. The DoN will establish and use snake-free quarantine areas for cargo and equipment (associated with the proposed military training) traveling from Guam to CNMI. These brown treesnake sterile areas would be subject to: (1) day and night searches with appropriately trained interdiction canine teams that meet performance standards; (2) snake trapping, and (3) visual inspection for snakes. Both temporary and permanent snake barriers would be implemented depending on scale and scope of activities. 5. The DoN will actively support rapid response actions related to BTS in the CNMI in the vicinity of DoD property and training sites by working with U.S. Geological Survey Biological Resources Discipline and the Service to develop technology, procedures, and protocols that will support rapid action for a BTS sighting. Active support will include logistical and financial support for rapid response efforts related to DoD activities. 6. The DoN will provide BTS awareness training for all military and contractor personnel including a mandatory viewing of a brown treesnake educational video, distribution of pocket guides with BTS information and personal inspection guidelines to be carried at all times, and assurance that BTS awareness extends from the chain of command to the individual military service member. 7. Due to limited availability of BTS inspectors, trained dogs, and quarantine facilities and equipment on Guam and the CNMI, the DoN will coordinate closely with the Service, USDA - WS, CNMI - DLNR, and other agencies supporting and implementing BTS control efforts within the Mariana Islands. The DoN should commit to funding any increased military and civilian BTS interdiction needs in the CNMI and Guam that are	

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	directly or indirectly related to the proposed action. 8. The DoN should support BTS research that assists in the landscape-level control of BTS on Guam, detection and eradication of BTS that might be found in the CNMI due to DoD activities and refinement of current interdiction efforts.	
USDoI – 88	**Cumulative Impacts** Page 4-13, 4.4.1. Resource Areas Dismissed from Current Impacts Analysis. Removal of sediments and water quality, marine habitats, marine birds, marine vegetation, marine invertebrates and fish should not be removed from the cumulative analysis impact. We recommend an analysis be completed for these categories.	Chapter 4 (Cumulative Impacts) in the Final EIS/OEIS has been updated to include a cumulative impacts analysis for these resource sections.
USDoI – 89	Page 4-13, 4.4.2. Sediments and Water Quality. We recommend addressing mass wasting on FDM caused by military activity from shore bombardment and bombing for all alternatives.	Cumulative Impacts addresses potential impacts from other federal and non-federal projects. For FDM, there are no such activities. The analysis for sediment runoff has been updated in the Final EIS/OEIS in Chapter 3 (Affected Environment and Environmental Consequences) resource sections.
USDoI - 90	Page4-25, 4.4.6.9. Cumulative Impacts on Sea Turtles. Disturbance of nesting beaches and possible trampling of sea turtles nests are not address in the cumulative impacts. We recommend the impacts from the amphibious landing activities being proposed be addressed in the cumulative impacts.	The EIS/OEIS did not identify impacts on nesting sea turtles from amphibious landing activities based on the implementation of Standard Operating Procedures. Therefore, at most, the incremental contribution of these stressors to cumulative impacts on sea turtles would be negligible. Therefore, amphibious landing activities were not considered further in the cumulative impacts analysis.
USDoI - 91	Page 4-26, 4.4.7. Marine Birds. We recommend address loss of nesting habitat for nesting seabirds on FDM from mass wasting caused by military activities, address the increase level of disturbance from increasing the temp of activities on FDM, address population impacts based on local populations not global population levels.	Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) addresses potential impacts from other federal and non-federal projects. For FDM, there are no such activities. The analysis for sediment runoff and mass wasting has been updated in the Final EIS/OEIS in Chapter 3 (Affected Environment and Environmental Consequences) resource sections. For Section 3.6 (Marine Birds), additional analysis has been added into the Final EIS/OEIS regarding potential impacts on local populations. Please see response to comment USDoI - 2.

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USDoI - 92	Page 4-29, 4.4.1.1. Terrestrial Species and Habitats. The DEIS states that cumulative effects from present, past, and future projects are not expected to result in significant impacts on terrestrial species. The DEIS states the only the Micronesian megapode would be significantly impacted as a result of the training and testing activities planned on FDM. The DEIS should disclose and explain what are the significant impacts (e.g. decrease in numbers or range) to megapodes.	Military training occurs on portions of Guam, Rota, Tinian, Saipan, and FDM. Micronesian megapodes are found within the Tinian Military Lease Area, but are likely transients. Because megapodes on Tinian occur within limestone forests where the military does not conduct training activities, activities are not likely to adversely affect megapodes. On Saipan, megapodes are known to use the Marpi Maneuver Area. Again, military training activities do not occur in limestone forests where megapodes are most likely to occur, therefore, military training activities on Saipan are not likely to adversely affect the megapode. Adverse effects to megapodes are only anticipated to occur on FDM. Therefore, the only portion of the megapode range that coincides with expected decreases in megapode numbers is on FDM.
USDoI - 93	**Standard Operating Procedures, Mitigation, and Monitoring** Page 5-1, 5.1. Standard Operating Procedures. The mitigation section does not seem to address impacts associated with both amphibious landings and underwater detonations. We recommend developing habitat criteria to avoid areas of significant resources from these impacts. Additional habitat data may need to be collected or analyzed to define areas or general criteria.	As described in the Physical Disturbance and Strike Stressor section of 3.8 (Invertebrates), prior to any amphibious over-the-beach training activity conducted with larger amphibious vehicles such as LCACs or AAVs (e.g., Amphibious Assaults), a hydrographic survey and a beach survey would be required. The surveys would be conducted to identify and designate boat lanes and beach landing areas that are clear of coral, hard bottom substrate, and obstructions. LCAC landing and departure activities would be scheduled at high tide. In addition, LCACs would stay fully on cushion or hover when over shallow reef to avoid corals and hard bottom substrate. This is a standard operating procedure for safe operation of LCACs. Over-the-beach amphibious activity would only occur within designated areas based on the hydrographic and beach surveys. Similarly, AAV activities would only be scheduled within designated boat lanes and beach landing areas and would conduct their beach landings and departures at high tide one vehicle at a time within their designated boat lane (COMNAVMAR Instruction 3500.4A). Based on the surveys, if the beach landing area and boat lane is clear, the activity could be conducted, and crews would follow procedures to avoid obstructions to navigation, including coral reefs; however, if there is any potential for impacts on occur on corals or hard bottom substrate, the Navy will coordinate with applicable resource agencies before conducting the activity. Hydrographic and beach surveys would not be necessary for beach landings with small boats, such as Rigid Hull

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		Inflatable Boats (RHIBs). While underwater detonations are part of Proposed Action, all detonations in shallow waters are restricted to Agat Bay Mine Neutralization Site, Outer Apra Harbor Underwater Detonation (UNDET), and Piti Point Mine Neutralization sites, which are located in waters that are previously disturbed, and are not known to support large invertebrate communities, which further reduces the potential for population level impacts. Given these standard operating procedures, additional habitat data are not necessary for purposes of analysis.
USDoI - 94	Page 5-54, 5.3.4.1.7. Avoiding Location Based on Bathymetry and Environmental Conditions. This section seems to be written from the perspective of sonar activities and other training activities. However, these considerations should not be discounted for all testing and training activities.	Avoiding locations based on bathymetry and environmental conditions *for the purpose of mitigation* would increase safety risks to personnel and result in an unacceptable impact on readiness. Mitigation measures have been developed for the activities listed throughout Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) and does not necessarily mean the entirety of the Proposed Action.
USDoI - 95	Page 5-62. Mitigation will be needed for terrestrial species in the Study Area, particularly on activities proposed for Rota.	Conservation measures and other mitigative actions have been added into Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the Final EIS/OEIS. These measures were developed during the Section 7 ESA consultation between the Navy and USFWS and included in the USFWS Biological Opinion provided to the Navy.
USDoI - 96	Page 5-69. Mariana Fruit Bat strikes need to be added to the strike reporting section.	Text in the Final EIS/OEIS (Section 5.5.2.3, Bird Strike Reporting) has been revised in accordance with this comment.
USDoI - 97	The significant change of greatly expanding open ocean areas of possible activities may cause increased impacts on some of the pelagic marine resources, especially marine mammals, which occur in waters managed by the National Park Service at Guam. But our major concerns are on changes proposed for training in near-shore waters adjacent to marine waters managed by the National Park Service at Agat Bay and Asan	The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. The biological resource sections of the EIS/OEIS address the potential impacts from all action alternatives on marine waters throughout the Study Area.

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USDoI - 98	The provision in Alternatives 1 and 2 to create an increase in net explosive weight for underwater detonations from 10 pounds to 20 pounds at Agat Bay Mine Neutralization Site and Outer Apra Harbor Underwater Detonation Site is of particular concern. We request further analysis in the EIS of impacts from this proposed increase and consideration of eliminating this increase or improving practices or mitigations to lessen potential damage, even from the current 10 pound charges. We have observed the deaths of numerous fish caused by these detonations carried out in Guam waters as part of the mine detection and detonation exercises. Increased size of charges and increased frequency will add to the losses of fish, which include those harvested for local consumption. It is not known whether the numerous coral species found in Guam that are currently proposed for ESA listing as threatened or endangered occur close enough to detonation sites to suffer impacts from the training. Surveys to determine this should be done and added to the EIS. Likewise, surveys are recommended to determine whether increased detonation charges may damage submerged prehistoric and historic resources near the training sites.	Additional information has been inserted into the respective Final EIS/OEIS resource sections analyzing the potential impacts of the increase of NEW at Agat Bay. While there is the potential for fish mortality based on the ranges to effects as presented in Table 3.9-4 of the EIS/OEIS, the areas used for underwater detonations in shallow water have been used for many years, and are considered disturbed habitat, which do not have the fish abundance as higher quality habitat. While the EIS/OEIS identifies the possibility, based on the anticipated number of mortalities, it was concluded that no significant impact on the population of fish species would occur as a result of training and testing activities.
USDoI - 99	Although the detonations planned to occur on the seafloor would be located in primarily soft-bottom habitat, such habitats in Agat Bay are known to support populations of the rare garden eels *Heteroconger hassi*. Also these soft bottom areas in Agat Bay are reported as important sites of sting ray foraging and mating. Endangered and threatened hawksbill (*Eretmochelys imbricata*) and green (*Chelonia mydas*) sea turtles are common in Agat Bay and Apra Harbor and are reported to nest on shores close to the Agat Bay mine training site. These issues should be addressed in the EIS. We expect the most damaging impacts of any detonations (even less than 10 lbs of explosives) in Agat Bay are the impacts on the	The Navy recognizes the common occurrence dolphins and sea turtles within Agat Bay and has developed mitigation measures in consultation with NMFS under provisions of the MMPA and ESA. Beachmasters and/or Lookouts are used during activities occurring in Agat Bay and at Dadi Beach. Beachmasters are shore based observers with binoculars whose sole purpose is to ensure safety of craft including avoidance of marine and terrestrial animals. Details on mitigation measures, specifically Lookout measures, and standard operating procedures for vessel movements and the use of explosives are described in Chapter 5, Standard Operating Procedures, Mitigation, and Monitoring. Observing for marine animals prior to and during activities minimizes the potential for impacts from explosives at the Agat Bay Mine Neutralization Site.

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	resident pods of spinner dolphins *Stenella longirostris*.	
USDoI - 100	Throughout the year, daily boat tours bring tourists to see the pods of spinner dolphins at Asan Bay and especially Agat Bay. These trips are a popular activity for international visitors who are the largest component of Guam's tourism industry. The presence, health and visibility of dolphins also have traditional cultural value among many Guam residents. These dolphins would suffer adverse effects of vessel passages and sonar use in the proposed training exercises, but their exposure to nearby detonations at the Agat Bay Mine Neutralization Site could be expected to create the most serious harm and cause them to possibly leave their customary range within the War in the Pacific National Historical Park waters of Agat Bay. Simply stopping explosions as mitigation when marine mammals are seen by training lookouts at the detonation sites does not ensure that dolphins are not harassed by the detonations. Dolphins may be affected while out of sight and cumulative impacts of the increased charges and other disturbances may drive them out of the park and diminish their availability for tour observations. This EIS and plans for future training and testing activities by the Department of Defense in Guam waters require more detailed studies of this important discrete population of dolphins, including their census, life histories, movements, and feeding and breeding needs. Agat Bay mine detonations should cease until better knowledge of impacts on these marine mammals is determined.	The Navy recognizes the common occurrence of spinner dolphins within Agat Bay and has developed mitigation measures in consultation with NMFS under provisions of the MMPA. Beachmasters and/or Lookouts are used during activities occurring in Agat Bay and at Dadi Beach. Beachmasters are shore based observers with binoculars whose sole purpose is to ensure safety of craft including avoidance of marine and terrestrial animals. Spinner dolphin groups are easy to detect because of the size of the group and surface behaviors. Details on mitigation measures, specifically Lookout measures, and standard operating procedures for vessel movements and the use of explosives are described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring). Observing for marine mammals prior to and during activities minimizes the potential for impacts on dolphins from underwater sound and ship strikes. The analysis presented in Section 3.4.4.2.3 (Predicted Impacts from Explosives) takes into account the use of explosives at the Agat Bay Mine Neutralization Site and the presence of spinner dolphins in the vicinity, as represented by the species' density estimate. There were no predicted exposures of spinner dolphins from the use of explosive sources within the Study Area, including in Agat Bay.
USDoI - 101	The NPS acknowledges the DoN proposal to use the Programmatic Agreement (PA) developed for the MIRC EIS/OEIS to satisfy the requirement for consultation under Section 106 of the NHPA on the MITT EIS/OEIS, as stated in Table 3.11-3: *Summary of Section 106 Effects of Training and Testing Activities on Cultural Resources*. We do not agree with the DoN findings as stated in the narrative sections (e.g. 3.11.3.2.1.2 and 3.11.3.2.1.3) that by following established	The text in the Final EIS/OEIS has been revised in accordance with this comment. In Section 3.11.3.2.1.2 and Section 3.11.3.2.1.3 of the Final EIS/OEIS, the text has been revised to state that "no National Register of Historic Places-eligible resources would be adversely affected."

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	protocols (presumably the MIRC PA stipulations) *"…no National Register of Historic Places-eligible resources would be affected."* Perhaps it was meant to say there would be no *"adverse"* effects? In our comments to the DoN regarding Forager Fury I and II exercises, the NPS has clearly stated our belief that there have been and continue to be adverse effects to the resources.	
USDoI - 102	Given that the nature of the current exercises has changed from those envisioned by the NPS during the MIRC EIS/OEIS consultation, and that the current level of activities will be expanded, the NPS would like to re-open consultation. As stipulated in Section IV.B.4.d of the MIRC PA, Joint Region Marianas prepares annual reports documenting the effects of training activities on the NHL each year. The current series of Forager Fury exercises highlights the need for a comprehensive plan to address the cumulative impacts to the Tinian Landing Beaches, Ushi Point Field, and North Field National Historic Landmark from Department of Defense use and maintenance of the North Field Historic District. The NPS would like to consult with DoN on development of a long-term management plan for clearing the runways, taxiways and associated roads, using the Tinian North Field Cultural Landscape Report as a guiding document for treatments. This type of plan would clearly outline the process and desired outcomes for the management of the runways and streamline the compliance process for future exercises envisioned in the MITT EIS/OEIS. A management plan could be used as a tool to provide protocols and documentation standards as well as methodology for analyze of the effectiveness of the treatments.	Joint Region Marianas, in accordance with Stipulation III.B (Training Program Revisions) of the MIRC Programmatic Agreement (PA), has been and still is currently engaging NPS as well as other stakeholders on these new maneuvers. Stipulation III.B states that the DoD representative, the 36th Wing, and any other DoD unit training within the MIRC will notify, coordinate, and consult with the appropriate HPOs and the NPS (if an NHL is involved) on a case by case basis for any introduction of forces or maneuvers that do not comply with the general or area specific stipulations of this PA.
USDoI - 103	Thank you for the opportunity to participate in this review. The National Park Service is pleased to continue working with DoN to ensure the protection and preservation of resources in the areas proposed for training and testing. Should you have any questions regarding our comments, please contact me at	Thank you for participating in the NEPA process.

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	671-477-7278, extension 1010 or via email (mike_gawel@nps.gov).	
United States Environmental Protection Agency (USEPA) – 1	Attention: MITT EIS/OEIS Project Manager Subject: The Mariana Islands Training and Testing Environmental Impact Statement / Oversees Environmental Impact Statement, Guam and Mariana Islands (CEQ # 20130266) The U.S. Environmental Protection Agency (EPA) is providing comments on the Mariana Islands Training and Testing (MITT) Draft Environmental Impact Statement (DEIS) / Oversees Environmental Impact Statement. Our comments are provided pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508) and our NEPA review responsibility under Section 309 of the Clean Air Act. EPA provided scoping comments for this project in a letter dated November 3, 2011. We support the Navy's goal for this action, to maintain military readiness. We emphasize the importance of the Navy's continued coordination with the National Marine Fisheries Service and the need to use the best available scientific information to assess the impacts of the project. Based on our concerns about alternatives, water resources and standard operating procedures and mitigation measures, we have rated the proposed alternative Environmental Concerns – Insufficient Information (EC-2). The enclosed Detailed Comments elaborate on these concerns and our recommendations. We appreciate the opportunity to review this DEIS. When the Final EIS is released for public review, please send one hard copy and one electronic copy to the address above (mail code: CED-2). If you have questions, please contact me at (415) 972-	Thank you for your participation in the NEPA process. Your comment has been broken down into component parts to ensure that all comments provided in your letter are addressed. As a result, this portion of the comment does not contain a specific question or inquiry related to the EIS/OEIS. Therefore, no response is provided.

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	3521 or have your staff contact Tom Kelly at kelly.thornasp(ii)epa.gov or (415) 972-3856.	
USEPA – 2	EPA DETAILED COMMENTS, MARIANA ISLANDS TRAINING AND TESTING DRAFT ENVIRONMENTAL IMPACT STATEMENT / OVERSEES ENVIRONMENTAL IMPACT STATEMENT, GUAM AND MARIANA ISLANDS (CEQ # 20130266), December 12, 2013 **Alternatives** The Mariana Islands Training and Testing Study Area is composed of "at-sea ranges and land based training areas on Guam and CNMI," and "operating areas, and special use airspace in the region of the Mariana Islands that are part of the Mariana Islands Range Complex (MIRC) and its surrounding seas, and includes a transit corridor" (ES-1). Both action alternatives would nearly double the current at-sea training area (from 497,469 nm^2 to 984,601 nm^2 , page 1-2). The proposed action, Alternative 1, would support an increase in baseline training, and Alternative 2 would support an even larger increase in training. The DEIS states that the No Action Alternative, required by CEQ regulations, "would fail to meet the purpose of and need for the Proposed Action" (p. 2-54). EPA acknowledges the Navy's need to train and test to achieve its mission, the stated purpose and need for the action (p. 1-4). The DEIS further clarifies that the action implements the Navy's Fleet Readiness Training Plan, including four component phases (p. 1-5 to 1-8), and emphasizes the strategic importance of the range (p. 1-8 and 1-9). The DEIS does not, however identify the factors that led the Navy to conclude that the current range size is inadequate, or by extension, the factors that led the Navy to propose the expansion of the training area in the proposed action. We note that Alternative 2 also includes additional training beyond the proposed alternative, but does not	The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. The Navy complied with NEPA requirements in the development and consideration of alternatives. This EIS/OEIS analyzes all alternatives in Sections 2.5 through 2.8 and explains why the Navy has considered but eliminated alternatives in Section 2.5.1 (Alternatives Eliminated from Further Consideration). The Alternatives carried forward meet the Navy's purpose and need to ensure that it can fulfill its obligation under Title 10. Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) includes mitigation measures designed to reduce potential impacts.

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	propose expansion of the training area beyond the proposed alternative. Recommendation for the FEIS: • Identify the factors that led the Navy to determine the training area expansion necessary to meet the purpose and need for the Proposed Action.	
USEPA - 3	**Water Quality** *The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008*[1] acknowledges sediment run-off as one of the most serious stressors affecting coral reefs in the Mariana Islands. Sediment impacts coral health by blocking light and inhibiting photosynthesis, directly smothering and abrading coral, and triggering increases in macro algae.	The Navy is committed to implementing EO 13089. Information regarding potential sediment runoff from military use of FDM, Tinian, and Guam has been added in Section 3.1 (Sediments and Water Quality) of the Final EIS/OEIS. Information regarding how erosion from FDM may impact specific resources has been added to particular resource sections (e.g., marine habitat, marine vegetation, marine invertebrates, fish, sea turtles, and marine mammals). In addition, more detailed maps of coral presence/absence have been included in Section 3.8 (Marine Invertebrates) of the Final EIS/OEIS. To meet the intent of the Range Sustainability Program Assessment

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	Additionally, the Department of Defense has committed "to protect U.S. and International coral reef ecosystems and to avoid impacting coral reefs to the maximum extent feasible". [2] [1] Waddell, J.E. and A.M. Clarke (eds.), 2008. The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008. NOAA Technical Memorandum NOS NCCOS 73. NOAA/NCCOS Center for Coastal Monitoring and Assessment's Biogeography Team. Silver Spring, MD. [2] Department of Defense Policy Statement on Executive Order 13089, see Department of Defense Coral Reef Protection Implementation Plan < http://www.denix.osd.mil/nr/upload/dodbk5.pdf> We are concerned by the potential for erosion by current activities at Farallon De Medinilla as well as the increased training of the proposed alternative. The 2008 range assessment that includes FDM indicates "a narrow submerged shelf with limited coral communities surrounds the island."[3] Per the Range Sustainability Environmental Program Assessment Manual, the range assessment did not assess the fate and transport of sediment, including munitions constituents, from the island. Recommendations for the FEIS • Discuss the impacts of erosion at FDM on near shore habitats; • Provide maps showing coral reefs throughout the training and testing area (e.g. FDM, Santa Rosa Bank etc.) • Discuss the results of the 5 year reassessment of Marianas Land-Based operational range complex (if available); and • Consider the potential for mitigation measures at FDM (e.g. construction of settling basins, or moving range targets) to reduce sediment impacts.	Manual, the Navy has conducted 13 years' worth of in-water dive surveys to monitor potential effects to the physical and biological nearshore environment surrounding FDM. Section 3.1.3.1.5.3 (Farallon de Medinilla Specific Impacts) has been added to the MITT FEIS/OEIS to report direct observations for 13 years' worth of dive survey information. An additional figure (Figure 3.1-1) has also been added to the FEIS/OEIS that shows the location of survey transects that include areas mentioned in the comment (e.g. areas near the land bridge, eastern clifflines of FDM, southern end of FDM including an apparent sea cave collapse). Based on these direct observations of damage off the coast of FDM, the majority of disturbances to the seafloor sediments, substrates, and mass wasting of FDM can be attributed to typhoons and storm surges. Further, damage attributed to military training activities recovered within 2 to 3 years at the same rate of damage associated with natural phenomenon. These studies also noted healthy coral conditions and absence of factors attributed to poor water quality. For instance, the studies noted rapid (within 2 to 3 years) recovery of a regional coral bleaching event, a low number or lack of bioeroders, and a lack of mucus on corals (indicative of sedimentation stress). A map of coral reef habitats surrounding FDM and other locations have been added to Section 3.3 (Marine Habitats) and Section 3.8 (Marine Invertebrates). Constructing and managing mitigation structures such as settling basins is not feasible on FDM (due to unexploded ordnance concerns to construct and maintain these structures). The Navy, however, does engage in activities that may potentially reduce to the extent practical sedimentation attributed to military use of the island. For example, the Final EIS/OEIS (Section 3.1.3.2, Metals) has been updated to include references to specific procedures and schedules for range clearance on FDM. The siting of targets and impact areas consider protections to relatively higher quality habitat in the northern portion of the island, the narrow land bridge, and various limestone cave features along the coast. Figure 3.10-9 has been added to the Final EIS/OEIS to show specific impact areas. The Navy believes that the location of the impact areas offer the least impacts to fulfill military mission requirements of the range.

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.USEPA - 4	**Standard Operating Procedures and Mitigation Measures** The DEIS notes a provision of the 2009 proclamation creating the Marianas Trench National Monument: the Armed Forces shall ensure, by the adoption of appropriate measures not impairing operations or operational capabilities, that its vessels and aircraft act in a manner consistent, so far as is reasonable and practicable, with this proclamation. (p. 5-50) The DEIS does not identify any measures adopted or proposed specifically for the purpose of ensuring that training in the National Monument is consistent with the proclamation. **Recommendation for the FEIS:** Identify the appropriate measures created in response to the presidential proclamation. [3] Final Range Condition Assessment Marianas Land-Based Operational Range Complex Decision Point 1 Recommendations Report GUAM AND COMMONWEAL TH NORTHERN MARIANA ISLANDS, May 2008 < http://www.denix.osd.mil/sri/upload/Final-Marianas-DPl-ES-Official.pdf>	This monument consists of the waters and submerged lands encompassing the coral reef ecosystem of the three northernmost islands, the Mariana trench, and active undersea volcanoes and thermal vents in the Mariana Volcanic arc and back arc. The Navy is not restricted in what training or testing it may conduct within the waters above the Refuge that extends into the MITT Study Area, including sonar-related activities in the vicinity of the Islands unit of the Mariana Trench Marine National Monument. Applicable mitigations described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) will be followed when conducting training and testing activities within the Marianas Trench National Monument.
Western Pacific Regional Fishery Management Council (WPRFMC) - 1	To Whom It May Concern, Thank you for the opportunity to comment on the Draft Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS) for the Marianas Islands Training and Testing (MITT) area. The Western Pacific Regional Fishery Management Council (Council) reviewed the draft EIS/OEIS and acknowledges the actions taken by the Department of Defense (DOD) in putting out public notices of training activities, restricted areas, and leaving areas accessible to fishermen during training activities (e.g. Warning Area-517	Thank you for your participation in the NEPA process. Your comment has been broken down into component parts to ensure that all comments provided in your letter are addressed. As a result, this portion of the comment does not contain a specific question or inquiry related to the EIS/OEIS. Therefore, no response is provided.

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	offshore of Guam). However, we believe the DOD could be doing more in this regard.	
WPRFMC - 2	For example, the EIS/OEIS identifies that the DOD will continue to work with the public on accessibility to areas within the MITT, but does not offer any proposed public activities or mechanisms to facilitate communication. With this mind, we maintain our recommendation identified in our November 2011 letter to Deputy Assistant Secretary of Navy, Donald Schregardus, that the US Navy should establish a Marianas fishing community advisory committee that focuses on issues associated with military activities and fisheries in the Marianas. Clear and consistent communication with the Marianas fishing communities will reduce confusion on where and when fishing is restricted during training activities as well as provide the Navy with information on areas that are important to fishermen.	The military is committed to working with the local community on issues that potentially affect the public, including access to fishing sites. For example, the Navy now allows access to the northern portion of W-517 during activities that occur far from that area in the southern portion of W-517 so that fishers can transit to and fish on White Tuna Banks and other nearby popular fishing sites. Previously, any activities occurring in W-517 would have required closure of the entire warning area regardless of where the activity took place within W-517. The Navy also announces upcoming periods when FDM will not be used for several consecutive days to allow mariners to plan to fish or transit through the danger zone beyond 3 nm from FDM. As stated above, the military is committed to improving communication with the local fishing community and will take the establishment of a community advisory committee under advisement. Section 3.12 (Socioeconomics) of the EIS/OEIS, which discusses fishing within the Study Area, additional information has been added which describes the various means of communicating restrictions, as well as additional specifics regarding the categories of Notices to Mariners: the Local Notice to Mariners (LNM), the Notice to Mariners (NTM), and the Marine Broadcast Notice to Mariners (BNM). In addition to issuing NOTAMs , LNM, NTM, and BNMs to announce scheduled training and testing events, upcoming events are communicated to stakeholders (e.g., local mayors, resources agencies, and fishers) using a telephone tree and e-mail distribution developed by Joint Region Marianas with stakeholder input. Notices are also sent to the NOAA, local cable channels, and emergency management offices. The military has also requested that the U.S. Coast Guard issue Notices to Mariners to announce when plans to use an area change (e.g., W-517), and access to the area will no longer be restricted (as previously published) and will now be accessible. Actions like notifying mariners when plans change are intended to reduce potential impacts on

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		accessibility and improve communication between the military and local communities.
WPRFMC - 3	The Council also believes that the draft EIS/OEIS could be enhanced by better describing the direct, indirect, and cumulative impacts to fishermen from military training activities. The primary example of impacts is the 0-12 nautical mile danger zone around Farrallon de Medinilla (FDM), whereby access by fishermen is prohibited during training activities. The draft EIS/OEIS identifies that fishermen were restricted from fishing within 0-12 nm 201 days in 2012, and prohibited from fishing from 0-3 nm around FDM all year around. FDM is a large bank that provides excellent habitat and fishing grounds for bottomfish such as the red-gill emperor. Closure of the FDM fishing grounds forces fishermen to fish in areas around Saipan and Tinian. These areas are subject to higher fishing pressure, thus increasing potential for lower catch rates and local depletion. The cumulative impact analysis should describe the impacts of training activities on fishing communities in regards to reduced fishing areas and timing of training activities with regards to fishing seasons.	Chapter 4 (Cumulative Impacts) has been revised to better address the potential indirect and synergistic impacts from multiple stressors. The military is aware that the 12 nm danger zone around FDM may affect access to fishing sites, but regards the safety of fishermen and other boaters as a top priority, and the 12 nm Danger Zone is necessary to ensure safety. The map of the area around FDM in Section 3.12 (Socioeconomics) (Figure 3.12-4) has been revised to show the bathymetry around the island as a proxy for fishing sites (no data on specific fishing sites is available). Areas shallower than 400 m are considered potential fish habitat accessible to bottom trawlers. While some areas within the 12 nm danger zone will not be accessible during certain activities for safety reasons, access will only be limited temporarily and not for all activities occurring at FDM. The map also indicates shallow water areas beyond the 12 nm danger zone that would be accessible to fishers. The military currently issues NOTMARs out to 12 nm around FDM and is seeking a congruent C.F.R danger zone. The military is also planning to announce upcoming periods when FDM will not be used for several consecutive days to allow mariners to plan to fish in or transit through the danger zone beyond 3 nm from FDM. Waters around FDM within 3 nm from shore are permanently closed for safety reasons due to the potential presence of unexploded ordnance.
WPRFMC - 4	The Council also reiterates its previous comments in its July 25, 2013 letter to the Pacific Naval Facilities Engineering Command regarding access and marine transit around Tinian. It is our understanding that the DOD is proposing to designate a safety zone that extends seaward from the shoreline to 3 nautical miles or more around the northern half of the island of Tinian. This area is proposed to be closed during live-firing practices. While the safety zone is described as an integral part of the training range, its proposed location would also include the western side of Tinian, restricting marine activities in that area during those times. The closure would prohibit boat travel during exercises, thus diverting passage from the	The MITT Proposed Action is not proposing any safety zone around Tinian. Current and proposed Danger Zones are discussed in Table 2.7-1. No Title 33 C.F.R. Part 334 Danger Zones exist in the Tinian nearshore areas, and none are proposed in this EIS/OEIS. The proposed safety zone around Tinian will be covered in the CJMT EIS/OEIS. Please visit the CJMT Website www.cnmijointmilitarytrainingeis.com for additional information.

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	traditional route, and forcing residents to transit a longer route, resulting in increased fuel costs and travel times. The Council suggests that the eastern side of the island would be a more appropriate place to designate a safety zone for military training activities.	
WPRFMC - 5	The Council would also like to highlight that fisheries development in Guam and CNMI is important to the local economy and food security, and also serves to perpetuate the cultural fishing traditions of the Marianas. The DOD should be considering the potential impacts of its activities on the development of fisheries, which may include offshore FADs and longline fishing. Planning for compatible future uses of the marine environment should be a conducted in coordination with Guam and CNMI governments and other applicable agencies. Lastly, to potentially mitigate or compensate for the loss of available fishing areas in the Marianas within the MITT, the DOD should be working with Guam and CNMI government agencies to establish funding opportunities that support fisheries development. Thank you for considering our comments on the draft EIS/OEIS.	As presented in Section 3.12 (Socioeconomic Resources) of the EIS/OEIS, the military has been conducting training and testing activities within the MITT Study Area for decades, and has taken and will continue to take measures to prevent interruption of commercial and recreational fishing activities. The military does not limit fishing activities from occurring in areas of the MITT Study Area that are not being used for training and testing activities. To minimize potential military/civilian interactions, the Navy will continue to publish scheduled training event times and locations on publicly accessible Navy websites and through U.S. Coast Guard issued Notices to Mariners up to 6 months in advance of planned events. When feasible, the military will use these same means of communication to notify the public of changes to previously published restrictions. These efforts are intended to ensure that commercial and recreational users are aware of the military's plans and allow commercial and recreational users to plan their activities to avoid scheduled training and testing activities. Advanced planning on behalf of the military and effective communication of the military's plans could minimize limits on accessibility to desirable fishing locations and, consequently, have only a minor effect on commercial and recreational fishing activities. The Navy will continue to engage with the public and the local fisherman on issues affecting commercial and recreational fishing in order to limit potential impacts associated with military activities.

Table E.3-2 contains comments from non-governmental organizations received during the public comment period and the Navy's response. Responses to these comments were prepared and reviewed for scientific and technical accuracy and completeness. Comments appear as they were submitted and have not been altered.

Table E.3-2: Responses to Comments from Non-Governmental Organizations

Commenter	Comment	Navy Response
Center for Biological Diversity (CBD) - 1	Dear MITT Project Manager, Please accept these comments concerning the Mariana Islands Training and Testing Activities ("MITT") Draft Environmental Impact Statement/Overseas Environmental Impact Statement. These comments are submitted on behalf of the Center for Biological Diversity, a nonprofit conservation organization whose mission is to protect and restore endangered species and wild places through science, policy, education, advocacy, and environmental law. The Center has over 625,000 members and online activists, some of whom reside and/or recreate in the Mariana Islands.	Thank you for your participation in the NEPA process. Your comment has been broken down into component parts to ensure that all comments provided in your letter are addressed. As a result, this portion of the comment does not contain a specific question or inquiry related to the EIS/OEIS. Therefore, no response is provided.
CBD - 2	The proposed action would result in the continuation and expansion of military training and testing activities that are causing significant adverse impacts to the natural environment of the Mariana Islands, adversely affecting numerous imperiled species and their habitat, and irreversibly impacting the marine environment. The Navy has a mandatory duty under the National Environmental Policy Act (NEPA) to evaluate the direct, indirect, and cumulative impacts of the proposed action and determine whether there will be unavoidable significant impacts. The Navy has failed to meet NEPA's requirements because it improperly limited the scope of the DEIS, failed to properly set forth and analyze the no	See responses below.

Commenter	Comment	Navy Response
	action alternative and other reasonable alternatives, and failed to adequately assess and disclose the adverse environmental impacts of the proposed activities, and the effectiveness of proposed mitigation measures.	
CBD - 3	We are also concerned about the impacts of this proposal on marine mammals and threatened and endangered species, and whether this proposal will comply with the Marine Mammal Protection Act (MMPA) and Endangered Species Act (ESA). We request to receive copies of all MMPA and ESA related documents and correspondence with the expert agencies concerning this proposal.	The military is formally consulting with the NMFS concerning the potential impacts of the proposed training and testing activities on all marine mammals protected under the MMPA and all threatened and endangered marine species listed under the ESA known to occur in the MITT Study Area. The Navy has updated the Final EIS/OEIS based on the ongoing consultation with NMFS and will incorporate all reasonable and prudent measures, and terms and conditions that are set forth in the Biological Opinion in the Record of Decision. MITT MMPA and ESA related documents will be available on the project website located at http://www.MITT-EIS.com.
CBD - 4	**I. The Navy Improperly Limited the Scope of the DEIS** The Council on Environmental Quality ("CEQ") has promulgated regulations to implement NEPA, found at 40 C.F.R. Part 1500. The CEQ NEPA regulations are binding on all federal agencies. 40 C.F.R. § 1507.1. NEPA requires agencies to use the criteria for "scope" that is set forth in the CEQ regulations in order to determine which proposals shall be the subject of a particular EIS. 40 C.F.R. § 1502.4(a). Proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action, must be evaluated together in a single EIS. *Id.* The CEQ NEPA regulations further define the proper scope of EISs, and mandate that connected, cumulative, and similar actions be assessed together in a single EIS. 40 C.F.R. § 1508.25. Actions are connected if they automatically trigger	The training within the MITT Study Area is not dependent upon the Commonwealth of the Northern Mariana Islands (CNMI) Joint Military Training (CJMT) EIS. The training and testing activities with the MITT Study Area will not automatically trigger other actions which may require environmental impact statements. The training within the MITT will proceed regardless of whether other actions (e.g., CJMT EIS) are taken previously or simultaneously and the actions are not dependent on each other for their justification. According to the CEQ regulations, training and testing activities in the MITT Study Area may logically be viewed in isolation, as it has independent utility as training and testing is an on-going activity. In addition, Courts have upheld federal agencies' decisions to organize and plan their actions in a reasonable or rational manner. The MITT EIS/OEIS analyzes the cumulative impacts of these independent actions. The Navy used the best available science and a comprehensive review of past, present and reasonably foreseeable actions to develop a robust Cumulative Impacts analysis (Chapter 4, Cumulative Impacts). As required under NEPA, the level and scope of the analysis are

Commenter	Comment	Navy Response
	other actions which may require EISs, they cannot or will not proceed unless other actions are taken previously or simultaneously, or they are interdependent parts of a larger action and depend on the larger action for their justification. 40 C.F.R. § 1508.25(a)(1). Actions are cumulative if they will have cumulatively significant impacts. 40 C.F.R. § 1508.25(a)(2). And actions are similar if they have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography. 40 C.F.R. § 1508.25(a)(3). The Navy is currently moving forward with two separate proposals, which are being evaluated in two separate EISs that NEPA requires to be analyzed together in a single EIS. The MITT EIS and the are both assessing military training activities that would occur in the same region at the same time. Both of these proposals are interdependent parts of the Navy's overall military training and testing activities in this region, and are therefore connected actions that must be analyzed together in a single EIS. 40 C.F.R. § 1508.25(a)(1); *see Thomas v. Peterson*, 753 F.2d 754, 759 (9th Cir. 1985). Moreover, both of these proposals will undoubtedly result in cumulatively significant impacts on numerous resources in the region, again requiring that they be analyzed together in a single EIS. 40 C.F.R. § 1508.25(a)(2); *Thomas v. Peterson*, 753 F.2d at 759 (NEPA requires that "cumulative actions" be "considered together in a single EIS"); *City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1312 (9th Cir. 1990) (where "foreseeable similar projects in a geographic region have a cumulative impact, they should be evaluated in a single EIS"). Additionally, there is no question that both of these proposed	commensurate with the potential impacts of the action as reflected in the resource-specific discussions in Chapter 3 (Affected Environment and Environmental Consequences). The EIS/OEIS considered its activities alongside those of other activities in the region whose impacts are "truly meaningful" to the analysis. Furthermore, the entire EIS/OEIS provides the cumulative impacts analysis, not just Chapter 4. Chapter 3, in particular, provides the current effects of past and present impacts and environmental conditions that represent the baseline of the environment as it is; Chapter 3 also discusses the consequences or potential future impacts from Navy activities. Chapter 4, then, discusses the other reasonably foreseeable activities to the extent they are known and the incremental impact of the Navy's proposal when added to past, present, and future impacts.

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	actions share common timing and geography, again requiring that they be analyzed together in a single EIS. 40 C.F.R. § 1508.25(a)(3). The Navy's decision to separate and segment these two closely related proposals into two separate EISs violates NEPA. 40 C.F.R. § 1508.25(a). The Navy must issue a revised DEIS, for additional public and agency comments, in order to properly consider both of the related proposals in a single EIS, including the two proposals' collective impact on the environment.	
CBD - 5	**II. The DEIS' Alternatives Section is Inadequate** An EIS must include alternatives to the proposed action. 42 U.S.C. § 4332(2)(C)(iii); *see also* 42 U.S.C. § 4332(2)(E) (requiring agencies to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources"). The alternatives section is "the heart" of the EIS. 40 C.F.R. § 1502.14. The EIS must "present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public." *Id.* NEPA requires agencies to "[r]igorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated." 40 C.F.R. § 1502.14(a). The existence of a reasonable but unexamined alternative renders an EIS inadequate. *Center for Biological Diversity v. U.S. Dept. of the Interior*, 623 F.3d 633,	The Alternatives carried forward meet the Navy's purpose and need (see Section 1.4, Purpose and Need for Proposed Military Readiness Training and Testing Activities) to ensure that it can fulfill its obligation under Title 10. See Section 2.5 (Alternatives Development) for more detailed information on the development of alternatives. The Navy complied with NEPA requirements in the development and consideration of alternatives. This EIS/OEIS analyzes all alternatives in Section 2.5.2 (Alternatives Carried Forward) and explains why the Navy has eliminated other alternatives in Section 2.5.1 (Alternatives Eliminated from Further Consideration). The differences between Alternatives 1 and 2 are detailed in Sections 2.7 (Alternative 1: Expansion of Study Area Plus Adjustments to the Baseline and Additional Weapons, Platforms, and Systems) and 2.8 (Alternative 2: Includes Alternative 1 Plus Adjustments to the Type and Tempo of Training and Testing Activities) of the Final EIS/OEIS. The selection of an alternative by the decision-maker will be based on a review of all relevant facts, impact analyses, comments received via the EIS/OEIS public participation process, and the requirements of the Navy in order to fulfill its mission. As per CEQ interpretation on the “No Action Alternative,” the “no action” is “no change” from the current direction or level of intensity; therefore, the “no action” alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide

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	642 (9th Cir. 2010). Moreover, an agency may not define a project so narrowly that it forecloses a reasonable consideration of alternatives. NEPA also requires agencies to include consideration of a "no action" alternative. 40 C.F.R. 1502.14(d). The no action alternative is required in order to provide a baseline against which the action alternatives are evaluated. *Center for Biological Diversity*, 623 F.3d at 642. A no action alternative must be considered in every EIS. *Id*. The NEPA alternatives requirements ensure that the decision maker "has before him and takes into proper account all possible approaches to a particular project (including total abandonment of the project) . .. only in that fashion is it likely that the most intelligent, optimally beneficial decision will ultimately be made." *Calvert Cliffs Coordinating Committee v. United States Atomic Energy Commission*, 449 F.2d 1109 (D.C. Cir. 1971). In the MITT DEIS, the Navy fails to accurately set forth and evaluate the required "no action" alternative. 40 C.F.R. § 1502.14(d). The Navy claims in the DEIS that the no action alternative simply continues the ongoing training and testing activities, as defined in existing environmental planning documents. DEIS at ES-8. However, the Navy acknowledges that a primary purpose of the MITT EIS is to comply with the Marine Mammal Protection Act (MMPA) and Endangered Species Act (ESA), as the Navy's permits and authorizations under these statutes will soon expire. Thus, a true no action alternative would take into account the impending expiration of these permits and authorizations, which would presumably result in scaled back training and testing activities in areas where marine mammals and/or threatened and endangered	enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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	species are present in order to insure that no illegal takings would occur. The Navy's assumption that under the no action alternative, the ongoing training and testing activities would continue despite the expiration of permits and authorizations under the MMPA and ESA, is arbitrary and capricious and violates NEPA. See *Center for Biological Diversity*, 623 F.3d at 642-43. In the MITT Draft EIS, the Navy also fails to rigorously explore and evaluate all reasonable alternatives, and fails to develop and analyze a reasonable range of alternatives. 40 C.F.R. § 1502.14(a). The DEIS, for instance, fails to provide an alternative that would significantly reduce the predicted harm to the marine environment and wildlife in the region, and thus none of the alternatives were selected to "inform decisionmakers and the public" of how it could "avoid or minimize adverse impacts or enhance the quality of the human environment." 40 C.F.R. § 1502.1. As an example of an action alternative that the DEIS failed to consider, the Navy admits that it "did not identify and carry forward for analysis any separate alternatives with predetermined geographic or temporal restrictions." DEIS at 2-51. The alternatives analysis must include, however, "appropriate mitigation measures." 40 C.F.R. § 1502.14(f). Mitigation measures for the Navy's training and testing activities, especially for marine mammals and threatened and endangered species, should include – or at least consider - geographic restrictions from sensitive areas. By failing to include any consideration of alternatives that impose such restrictions, as a component of the alternative's mitigation	

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	measures, the Navy is failing to rigorously explore and evaluate all reasonable alternatives, including appropriate mitigation measures. In order to engage in an effective, meaningful NEPA process, the Navy must disclose and provide the opportunity for comment on all reasonable alternatives to the proposed project, including mitigation measures. By failing to consider and analyze a range of potential mitigation measures as part of the reasonable range of alternatives to the proposed project, the Navy is failing to disclose to the public and provide the opportunity for comment upon these measures, and failing to present to the decisionmaker the information necessa1y to make an informed decision. We request that the Navy prepare a supplemental DEIS that includes a true and accurate no action alternative, and that includes additional action alternatives that would significantly reduce the environmental harm of the proposed activities.	
CBD - 6	**III. The DEIS Failed to Provide Sufficient Information Concerning the Affected Environment and Environmental Consequences** Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA. 40 C.F.R. § 1500.1(b). A primary purpose of NEPA is to "guarantee that the relevant information will be made available to the larger audience that may also play a role in both the decision-making process and implementation of that decision." *Robertson v. Methow Valley Citizens*, 490 U.S. 332, 349 (1989). "[T]he broad dissemination of information mandated by NEPA	The EIS/OEIS has taken a “hard look” at potential environmental consequences of the Proposed Action and alternatives, and provides sufficient information for careful agency decision-making. As a part of this EIS, the potential direct and indirect impacts of the Proposed Action have been thoroughly reviewed and where gaps in science/environmental impacts exist, those gaps have been noted. Furthermore, as part of the NEPA process, the public and other agencies, both Federal and State, have had the opportunity to review the EIS/OEIS and provide comments on analyses or impacts that may not have been considered. As such, those comments that demonstrate meritful consideration by the Navy have been added to the Final EIS/OEIS, which has been updated to include additional information.

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	permits the public and other government agencies to react to the effects of a proposed action at a meaningful time." *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 371 (1989). A DEIS must fulfill and satisfy to the fullest extent possible all of the requirements established for a final EIS. 40 C.F.R. § 1502.9(a). If a DEIS is so inadequate as to preclude meaningful analysis, the agency must prepare and circulate a revised draft of the appropriate portion. *Id.* The agency must make every effort to disclose and discuss in the DEIS all major points of view on the environmental impacts of the alternatives, including the proposed action. *Id.* In addition to describing the environment of the area that would be affected by the proposed action, 40 C.F.R. § 1502.15, an EIS must analyze and disclose the environmental consequences of the proposed action should it be implemented. 40 C.F.R. § 1502.16. The "environmental consequences" section of the EIS "forms the scientific and analytic basis" for the comparison of alternatives. 40 C.F.R. § 1502.16. This discussion must include "the environmental impacts of the alternatives including the proposed action, any adverse environmental effects which cannot be avoided should the proposal be implemented, the relationship between short-term uses of the environment and the maintenance and enhancement oflong-term productivity, and any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented." Id. This section must include discussions of both direct and indirect effects and their significance, along with the environmental effects of the alternatives. Id.	Direct and indirect effects, as defined by 40 C.F.R. § 1508.8(a), have been included in the analyses of resources in the EIS/OEIS. The Navy is formally consulting with the NMFS concerning the potential impacts of the proposed training and testing activities on all marine mammals protected under the MMPA and all threatened and endangered marine species listed under the ESA known to occur in the MITT Study Area. The Navy is also formally consulting with the USFWS concerning all threatened and endangered species listed under the ESA known to occur in the MITT Study Area. The Navy has updated the Final EIS/OEIS based on the ongoing consultation with NMFS and will incorporate all reasonable and prudent measures, and terms and conditions that are set forth in the Biological Opinion in the Record of Decision.

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	"Direct effects" are defined as those that "are caused by the action and occur at the same time and place." 40 C.F.R. § 1508.8(a). In this case, the "direct effects" that must be analyzed and disclosed in the EIS include the taking of marine mammals, the taking of threatened and endangered species, the destruction and adverse modification of the designated critical habitat for threatened and endangered species, the disruption of marine systems and the resulting impacts to water quality and corals, and the direct impacts to the affected communities. "Indirect effects" are defined as those that "are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. § 1508.8(b). For the MITT EIS, "indirect effects" include the long term aversion of marine species from the destructed environment in and around the MITT, the unknown long-term impacts of toxic chemical build-up in the ocean, and the precedent that the continuation of these military training and testing activities sets for future attitudes and activities concerning this valuable marine area and the Mariana Islands.	
CBD - 7	**A. The DEIS Fails to Adequately Address Impacts to Marine Mammals** Accurate scientific analysis is essential to implementing NEPA, 40 C.F.R. § 1500.1(b), and agencies must insure the scientific integrity of the analysis in EISs. 40 C.F.R. § 1502.24. The MITT DEIS needs to be updated to take into account new information concerning impacts to marine mammals, including the EIS for the U.S. Navy Training and Testing Activities in the Hawaii-Southern California Training and Testing (HSTT) Study Area; the 2013 scientific report, "Blue whales respond to simulated mid-frequency military sonar;"[i]	The Navy believes that the Final EIS/OEIS utilizes the best available science in assessing impacts on marine resources. The EIS/OEIS references recent research by Goldbogen et al. (2013) and DeRuiter et al. (2013) as well as other recent research in Section 3.4.3.1.2.6 (Behavioral Responses) and Section 3.4.3.1.2.7 (Repeated Exposures). As described in Section 3.4.3.1.5.4 (Model Assumptions and Limitations) of the EIS/OEIS, conservative assumptions resulting in likely over predictions of marine mammal exposures include: (1) animats are modeled as always being underwater and always facing the source, and, therefore, always predicted to receive the maximum sound level at their position within the water column; (2) multiple exposures within any 24-hour period are considered one continuous exposure for the

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	and the 2013 scientific report, "First direct measurements of behavioral responses by Cuvier's beaked whales to mid-frequency active sonar."[ii] The DEIS under-estimates and understates the likely extent of harm and impacts to marine mammals that would result if the proposed action is implemented. The Navy's conclusion that no long term impacts to individuals or populations of marine mammals are expected as a result of sonar and other testing is not supported by the information presented in the DEIS as well as other scientific research. Models presented in the DEIS predict that each year over 50 marine mammals would be exposed to acoustic stress from sonar training and testing that would cause permanent hearing damage under Alternative 1. DEIS at 3.4-114 – 3.4-116. Moreover, sonar testing and training plus other sources of anthropogenic noise is predicted to cause thousands of cases of Level B and Level A harassment under the MMPA. *Id.*	purposes of calculating the temporary or permanent hearing loss, because there are no sufficient data to estimate a hearing recovery function for the time between exposures; (3) explosive thresholds for onset mortality and onset slight lung injury are set on the threshold of effect for 1 percent likelihood for a calf-weight animal; and (4) animats are assumed to receive the full impulse of the initial positive pressure wave due to an explosion, although the impulse-based thresholds (onset mortality and onset slight lung injury) assume an impulse delivery time adjusted for animal size and depth. The Navy is consulting with the NMFS regarding model predicted exposures to marine mammals under the MMPA and threatened and endangered marine mammals under the ESA. The military will be in compliance with both acts.
CBD - 8	Additionally, the DEIS understates the severity of behavioral responses on long term health. Dramatic behavioral responses to stressors from naval testing are well documented in the scientific literature.[iii] These responses can limit important activities such as foraging, communication, and predator detection.[iv] Behavioral responses may be temporary, but the long term consequences are not well understood. *See* 40 C.F.R. § 1502.22 (setting forth the NEPA requirements for when information concerning the potential environmental impacts of a proposed action is incomplete or unavailable). The indirect effects of the Navy's activities on marine mammals are also not adequately considered in the DEIS. Stress is a key component of marine mammal health. A study of North Atlantic right whales indicated that chronic stress in whales may be associated with exposures to even low-frequency ship noise.[v] Stress from ocean noise combined with other factors may weaken a cetacean's immune system,	Research cited in the EIS/OEIS indicates that behavioral responses by marine mammals exposed to underwater sound vary from no response to an immediate change in behavior (e.g., change in swimming direction). Behavioral changes are temporary and not necessarily repeated. Unlike noise associated with commercial shipping in some locations, sound sources used by the military do not continuously produce sound. Given the range of possible responses and variability in the type and severity of behavioral responses observed in marine mammals, potential long-term impacts are speculative. The military agrees that long-term consequences are not well understood and has addressed recent research on possible long-term effects in Section 3.4.3.1.3 (Long-Term Consequences to the Individual and the Population) in the Final EIS/OEIS. The Navy funds research on marine mammal responses to underwater sound, including sonar (e.g., Goldbogen et al. 2013) and (e.g., Fulling et al. 2011). For additional discussion on the potential effects of stressors on marine mammals, refer to Section 3.4.2.4 (General Threats), 3.4.3.1.2.5 (Physiological Stress), 3.4.3.1.2.6 (Behavioral Responses), 3.4.3.1.2.2 (Nitrogen

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	making it more vulnerable to parasite and diseases that normally would not be fatal. It is also reasonable to consider the possibility that marine species may exhibit the same physiological effects as terrestrial species that have been exposed to moderate levels of noise. In those studies, chronic noise has interfered with brain development, increased the risk of myocardial infarctions, depressed reproductive rates, and caused malformations in young.[vi] Other indirect effects may arise from mother-calf separation leading to a decrease in survivability.	Decompression), and 3.4.4.7 (Secondary Stressors) which discuss indirect effects on marine mammals. The Final EIS/OEIS is in compliance with NEPA requirements, including 40 C.F.R. §1502.22, and the analysis presented in the EIS/OEIS and Final EIS/OEIS represents the best available and most applicable science with regard to analysis of effects on marine mammals from sound sources.
CBD - 9	**B. The DEIS Fails to Adequately Address Impacts to Water Quality, the Marine Environment, and Wildlife** The DEIS is unclear as to how toxic metals and pollution resulting from the continuation and expansion of military training and testing activities in the region will affect water quality, the marine environment, and wildlife. The Navy states that percentage increases for known toxic metals under Alternatives 1 and 2 cannot be evaluated because these proposed testing and training activities are not currently conducted under the No Action Alternative. The Navy also states that impacts on sediments and water quality would be long term, local and negative, but that federal and state guidelines would not be violated. The DEIS fails to provide the public and decisionmaker with enough information and analysis to gain a clear understanding as to how the marine environment and wildlife may be adversely affected by the introduction of more toxic chemicals and metals as result of the proposed project.	The EIS/OEIS includes an analysis of potential impacts from toxic metals and pollution as a result of military training and testing activities. This analysis is included in Section 3.1 (Sediments and Water Quality), Section 3.3 (Marine Habitats), Section 3.4 (Marine Mammals), Section 3.5 (Sea Turtles), Section 3.7 (Marine Vegetation), Section 3.8 (Marine Invertebrates) and Section 3.9 (Fish). Based on the analysis presented in the EIS/OEIS, the conclusions indicate that all levels of metals, chemicals, and other byproducts would be either below detectable levels or at levels below existing standards, regulations, and guidelines. The Navy applies water quality standards wherever they are applicable. In general, there are no applicable standards for the types of potential water quality impacts analyzed in this EIS/OEIS. Residual concentrations are provided when it is possible to calculate them. In the previous MIRC EIS/OEIS, it was noted that "The CNMI Senate requested the Agency for Toxic Substances and Disease Registry (ATSDR) on 19 February 2008 to conduct a public health assessment on FDM of toxic substances released by bombs and the "bioaccumulation of these toxins in consumable pelagic fish." The Agency, in its letter to the CNMI Senate on 24 September 2008 concluded that "pelagic fish caught in the open water are not likely to contain high levels of explosive residues from the neighboring FDM bombing range and will not pose a public hazard to people who eat them." The conclusion is supported by the Agency's "Preliminary Assessment of Pelagic Fish Caught in the Open Pacific" (ATSDR 2008).

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CBD - 10	**C. The DEIS Fails to Adequately Consider and Disclose Cumulative Impacts** In accord with NEPA, the Forest Service must "consider" cumulative impacts. 40 C.F.R. § 1508.25(c); *Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1379 (9th Cir. 1998). "Cumulative impact" is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." 40 C.F.R. § 1508.7. "Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." *Id.* "To 'consider' cumulative effects, some quantified or detailed information is required." *Neighbors of Cuddy Mountain*, 137 F.3d at 1379. "Without such information, neither the courts nor the public, in reviewing the [agency's] decisions, can be assured that the [agency] provided the hard look that it is required to provide." *Id.* "General statements about 'possible' effects and 'some risk' do not constitute a 'hard look' absent a justification regarding why more definitive information could not be provided." *Id.* at 1380. "Nor is it appropriate to defer consideration of cumulative impacts to a future date," *id.*, as NEPA requires consideration of the potential impact of an action before the action takes place. 40 C.F.R. § 1500.1(b). There is no question that the proposed military training and testing activities will contribute to cumulative impacts on numerous resources within the region when considered together with other past, present, and reasonably foreseeable activities, including the proposed CNMI Joint Military Training activities. The DEIS, however, provides only a general, non-quantified discussion of cumulative impacts, of the same type that the Ninth Circuit has found insufficient under NEPA. *See e.g., Neighbors of Cuddy Mountain*, 137 F.3d at 1379-80. The	The Navy used the best available science and a comprehensive review of past, present and reasonably foreseeable actions to develop a robust Cumulative Impacts analysis. See Chapter 4 (Cumulative Impacts) of the EIS/OEIS. In accordance with Council on Environmental Quality guidance, the cumulative impacts analysis focused on impacts that are “truly meaningful.” This was accomplished by reviewing the direct and indirect impacts that would occur on each resource under each of the alternatives. Key factors considered were the current status and sensitivity of the resource and the intensity, duration, and spatial extent of the impacts of each potential stressor. In general, long-term rather than short-term impacts and widespread rather than localized impacts were considered more likely to contribute to cumulative impacts.

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	general statements provided in the DEIS fail to constitute the required hard look, and the Navy fails to provide an adequate justification as to why more definitive information could not be provided. *Id.*	
CBD - 11	**IV. The DEIS Fails to Insure that the Project Will Comply with the ESA** The ESA is "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation." *Tennessee Valley Authority v. Hill*, 437 U.S. 153, 180 (1978). "The plain intent of Congress in enacting this statue was to halt and reverse the trend towards species extinction, whatever the cost." *Id.* at 194. In enacting the ESA, Congress spoke "in the plainest words, making it abundantly clear that the balance has been struck in affording endangered species the highest of priorities, thereby adopting a policy which it described as 'institutionalized caution.'" *Id.* at 194. "One would be hard pressed to find a statutory provision whose terms were any plainer than those in [Section] 7 of the Endangered Species Act." *Id.* at 173. "Its very words affirmatively command all federal agencies 'to *insure* that actions *authorized*, *funded*, or *carried out* by them do not jeopardize the continued existence' of an endangered species or result in the destruction or modification of habitat of such species ... This language admits of no exception." *Id.* Pursuant to Section 7 of the ESA, each federal agency must consult with the United States Fish and Wildlife Service (FWS) and/or National Marine Fisheries Service (NMFS) to insure that its proposed activities are not likely to jeopardize the continued existence of any threatened or endangered species, or result in the destruction or adverse modification of critical habitat. 16 U.S.C. § 1536(a)(2). Section 9 of the ESA prohibits any person from "taking" a	The Navy formally consulted with USFWS and NMFS concerning the potential impacts of its proposed training and testing activities on all threatened and endangered species in the MITT Study Area. The Navy has updated the Final EIS/OEIS based on the ongoing consultation with NMFS and will incorporate all reasonable and prudent measures, and terms and conditions that are set forth in the Biological Opinion in the Record of Decision.

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	threatened or endangered species. 16 U.S.C. § 1538(a)(1)(B); 50 C.F.R. § 17.31(a). The term "take" is defined broadly to include "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." 16 U.S.C. § 1532(19). There are numerous threatened and endangered species within the study area that may be adversely affected by the proposed action, including the green sea turtle, hawksbill turtle, a number of endangered bird species, the mariana fruit bat, hump back whale, blue whale, fin whale, sei whale, and sperm whale. DEIS at C-33; 3.4-4 to 3.4-5. In addition, there are a number of candidate species under the ESA, including the Mariana eight-spot butterfly, Mariana wandering butterfly, four species of snails, and the Pacific sheath-tailed bat. DEIS at 3.10-7. The Navy must formally consult with FWS and NMFS concerning the potential impacts of its proposed continuation and expansion of training and testing activities on all threatened, endangered, and candidate species in the region. The Navy must also not issue its decision concerning the proposed action until after the completion of the Section 7 consultation, and must incorporate into the proposed action all of the reasonable and prudent measures, and terms and conditions, that are set forth in the applicable Biological Opinions.	
CBD - 12	**A. The Project Will Adversely Affect Coral Species** Currently, 40 species of coral that exist in the study area are proposed for listing as threatened or endangered under the ESA. In the DEIS and in its Section 7 consultation with NMFS, the Navy must address how their proposal would impact these	The Navy's determination of effect on proposed ESA-listed marine invertebrates included "may effect" determinations for acoustic and physical disturbance and strike stressors. This analysis is included in Section 3.8 (Marine Invertebrates) of the Final EIS/OEIS. In addition, the Navy included the four species of ESA-listed corals known to occur in the Study Area as part of their Section 7 ESA consultation with NMFS. The

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	coral species, not only in terms of their listing under the ESA, but also under the assumption that these corals have critical habitat that will be designated within the study area. Corals are under severe threat all over the world. They are slow to adapt to habitat changes and have a limited ability to reproduce over large distances. 73 Fed. Reg. at 6897. Oceans are already experiencing a drop in pH, and this decreases the calcification of corals. Calcification rates of reef-building corals are expected to decrease 30-40% with a doubling of atmospheric carbon dioxide.[ii] Scientists predict that ocean acidification coupled with increasing ocean temperatures will destroy the world's reefs by mid-century.[viii] The proposed action would increase the number of Vessels and activities in and near areas where threatened corals occur. The DEIS must consider and disclose the combination of the grave threats to corals associated with global climate change and the adverse impacts of the Navy's proposed activities on corals in the region.	Navy has updated the Final EIS/OEIS based on the ongoing consultation with NMFS and will incorporate all reasonable and prudent measures, and terms and conditions that are set forth in the Biological Opinion in the Record of Decision.
CBD - 13	**V. The DEIS Fails to Insure that the Project Will Comply with the MMPA** Numerous species of whales and dolphins are known or likely to be present in the study area, including five species of whales that are designated as endangered under the ESA and depleted under the MMPA: humpback whale, blue whale, fin whale, sei whale, and sperm whale. DEIS at 3.4-4 to 3.4-5. The Navy acknowledges in the DEIS, however, that despite its decades of conducting activities in the MITT region, there is a "paucity of systematic survey data" and "little is known about the stock structure of the majority of marine mammal species in the region." DEIS at 3.4-2. The Marine Mammal Protection Act (MMPA), generally prohibits any individual from "taking" a marine mammal, which is broadly defined as harassing, hunting, capturing, or	The results of the analysis presented in Section 3.4.3 (Environmental Consequences) of the EIS/OEIS indicate that marine mammals may be exposed to underwater sound at a level exceeding a criteria threshold for TTS or PTS, as well as levels resulting in a behavioral response. As described in Section 3.4.3.1.5.4 (Model Assumptions and Limitations) of the EIS/OEIS, conservative assumptions resulting in likely over predictions of marine mammal exposures include: (1) animats are modeled as always being underwater and always facing the source, and, therefore, always predicted to receive the maximum sound level at their position within the water column; (2) multiple exposures within any 24-hour period are considered one continuous exposure for the purposes of calculating the temporary or permanent hearing loss, because there are not sufficient data to estimate a hearing recovery function for the time between exposures; (3) explosive thresholds for onset mortality and onset slight lung injury are set on the threshold of effect for 1 percent likelihood for a calf-weight animal; and (4) animats are assumed to receive the full impulse of the initial positive pressure

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	killing it. 16 U.S.C. §§ 1362(13), 1372(a). According to the DEIS, the Navy is seeking a 5-year Letter of Authorization from the NMFS pursuant to the MMPA for certain specified training and testing activities, acknowledging that the use of sonar and other active acoustic sources and explosives may result in Level A harassment and Level B harassment of certain marine mammals, and that the use of vessels may result in Level A harassment, including mortality, of certain marine mammal species. DEIS at 3.4-213. The DEIS fails to address, however, how the Navy would modify its proposed activities to insure no takings of any marine mammals should its request be denied. According to the DEIS, the proposed training and testing activities that involve weapons firing, launch, and impact noise; vessel noise, aircraft noise; energy emissions; and impulses from swimmer defense airguns, are not expected to result in the harassment of marine mammals. DEIS at 3.4-213. Similarly, the proposed training and testing activities using in-water devices, seafloor devices, fiber optic cables and guidance wires, decelerators/parachutes, non-explosive practice munitions, and other military expended materials are not expected to result in harassment of marine mammals. *Id.* And, secondary stressors, including the impacts to habitat or prey from explosives and byproducts, metals, chemicals, and transmission of disease and parasites, are also not expected to result in harassment of marine mammals. *Id.* The DEIS lacks sufficient support for these determinations, especially at the level and extent of the activities proposed under Alternative 1, and especially in terms of the synergistic impact of all these activities on marine mammals. Overall, the Navy greatly underestimates the impacts that their proposed testing and training activities will have on marine mammals in the study area. As acknowledged, the mitigation measures proposed by the Navy will not be sufficient to eliminate "take" of cetaceans. And for some	wave due to an explosion, although the impulse-based thresholds (onset mortality and onset slight lung injury) assume an impulse delivery time adjusted for animal size and depth. Although the Navy acknowledges that acute synergistic effects are not well-studied and can only be accounted for qualitatively, a section for each resource exists that discusses this particular issue. For marine mammals, it is Section 3.4.5 (Summary of Impacts on Marine Mammals). In addition, the military used the best available science and a comprehensive review of past, present, and reasonably foreseeable actions to develop a robust Cumulative Impacts analysis (see Chapter 4, Cumulative Impacts). In compliance with the MMPA, the Navy requested for authorization from NMFS to take marine mammals incidental to the training and testing activities conducted in the MITT Study Area. Mitigation measures to reduce or avoid potential impacts on marine mammals are discussed in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS.

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	activities, it appears that the Navy proposes to reduce the mitigation that is currently in place in the MITT area while at the same time proposing to increase these potentially harmful training and testing activities under Alternative 1.	
CBD - 14	**VI. Conclusion** The DEIS fails to consider the proper scope of the Navy's proposal, fails to consider and disclose a true no action alternative and assess a full range of reasonable alternatives, and fails to adequately analyze and disclose the environmental consequences of the proposal. The DEIS also fails to demonstrate and insure compliance of the proposed activities with the ESA and MMPA. The Center requests that a supplemental DEIS be prepared, with an additional opportunity for public comment. Thank you for taking our comments into consideration, and please add me to the mailing list for this proposed action.	The scope of this EIS/OEIS is properly limited to those actions required to meet the purpose and need of the Proposed Action. The Navy explored a variety of alternatives and the concluded that the three alternatives presented in the EIS/OEIS were the only reasonable alternatives that met training and testing requirements. The development of alternatives and discussion of alternatives eliminated from further consideration is presented in Section 2.5 (Alternatives Development). As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. Effects from training and testing activities for each alternative were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The Navy formally consulted with USFWS and NMFS concerning the potential impacts of its proposed training and testing activities on all threatened and endangered species in the region. The Navy has updated the Final EIS/OEIS based on the ongoing consultation with NMFS and will incorporate all reasonable and prudent measures, and terms and conditions that are set forth in the Biological Opinion in the Record of Decision.
The Guam	The following is in response to the Mariana Islands Training	Thank you for your participation in the NEPA process. Your comment has

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Fishermen's Cooperative Association (GFCA) - 1	and Testing (MITT) Draft Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS) and its potential impact to the Guam's Marine Community. We use the word community as all-encompassing as the past and proposed Actions/Designations impacts not just affect fishermen but everyone including tour operators, economic expansion opportunities for the aforementioned and the consumers of the fresh seafood and services provided by such. While we recognize the needs of the military, most especially the necessity of training the basic tenants of the National Environmental Protection Act and other Federal Edicts must not be ignored. Recognize while some of these ranges may have been pre-existing; such may not be the case or applicable today. We certainly feel the continued existence or expansion is certainly not in the best interest of the community. These pre-existing and proposed ranges need greater thought especially as times change and opportunities are recognized by our small fragile Island community and economy. We ask that that your organization continues to work with the community as partners and as adversaries. To this end; we offer our concerns and recommendations which are as follows: ***Preamble: Facts about Guam's Marine community:*** **Fishing community:** Primarily a small boat community with an average vessel size of 22 feet. Fishing duration is usually a day trip (sunrise to sunset) with an extremely small percentage overnight trips (on a given day as many as 40-50 vessels are operating in coastal waters). It is primarily a Subsistence Fishery where the catch is shared or sold to cover fishing cost; not considered a commercial or recreational fishery…"an expense fishery" is far more acceptable but poorly understood even in Western Terms.	been broken down into component parts to ensure that all comments provided in your letter are addressed. The military will continue to engage with the public to minimize the potential impacts associated with training and testing activities on Guam's marine community.

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	This fishery depends highly on seasonal appearances of pelagic, coral reef and bottom fish species. Majority (70%) of the fishing trips are coastal, primarily within 5 miles but no further than 10-15 miles from the nearest coastline except for trips to nearby seamounts. During summer months where the waters are calmest these small boats may venture to these nearby seamounts to do some shallow bottom or fish for resident pelagic fish. Guam's community depends highly on these small fishing vessels for fresh local fish. Recognize that unlike Hawaii there are no Industrialized Fishing Vessels on Guam. Fishing on Guam is a four thousand year old tradition…a way of life for the fishermen and most especially in meeting the fresh fish needs of the community. Recognize that the multitude of existing activities and designations already hampers the uses of Guam's Marine Resources. These existing areas are: The two large Marine Protected Areas hosted by the Government of Guam on the Western seaboard, the Military Firing Range Danger Zone near Orote, in addition the Safety and Security Zone Designation of Apra Harbor. There are Marine Conservation Areas to the Northwest sector (USFWS) with a soon to be designated Ritidian Firing Range for the Marine Corps Contingent. At the end, nearly 30 to 40 percent of the Fishable Areas are either have or will have fishing access restrictions. Again, the western seaboard is where more than 80% of the marine community activities occur. Lastly, realize that the Military for the most part does not allow fishing activities to occur in or around its shoreline. This poses a dilemma as an active contingent of military personnel are engaged in fishing as well as other marine activities (hence the 20 million dollar improvements to Sumay Cove Marina, certainly not for military vessels) placing additional pressure on an ever shrinking area. In addition, the US negotiated Compact Agreement with the Freely Associated Island States primarily for military access to their respective Zones has	

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	provided for these citizens to freely travel to the US. As a result, these FAS Citizens are now impacting Guam's marine resources on a near daily basis. At the end, the cumulative burden to support the needs of the military should not be placed on the shoulders of this small Island Fishing Community.	
GFCA - 2	**Others in the Marine community:** Marine Tour Operators service nearly three thousand tourists a day. These vessels like fishing ones operate with limited range and time with customer satisfaction its goal in order to ensure continued patronage. Majority of these vessel offer coastal dolphin viewing, diving, fishing and so forth. These vessels (at least 30 vessels on a given day) operate out of Hagatna Marina, Apra Harbor and Agat Marina on a daily basis. Conducting Military exercises in or adjacent waters limits the range or the activities of these vessels. Lastly, these vessels are too limited in range and duration and any impediments to their operation is a significant drawback to an already fragile operation. One needs to understand the meaning of a "fragile operation" in order to fully understand marine operations both in fishing and other marine entities. Fragile, since all are subject weather (Guam averages 10 small craft warnings a month…tours do not like seasick passengers). Second, is visitor arrival as in the case of fishing…fish seasonality and duration which could be good or for the most part bad. High fuel cost especially higher than military fuel consumers giving military owned fishing vessels a higher economic advantage.	The military recognizes the importance of tourism and its benefit to the local economy. The majority of military activities would occur far from shore (> 3 nm) and would not impact nearshore resources. Use of explosives in Agat Bay and Apra Harbor would require establishment of a Temporary Safety Zone, which would be announced in advance by a Local Notice to Mariners and a Broadcast Notice to Mariners, as required. Temporary exclusion zones for underwater detonations typically are in place for 2 hours (see Chapter 2, Description of Proposed Action and Alternatives, Section 2.7). The military has adopted measures to reduce impacts on fishers and tour operators (see Chapter 5, Standard Operating Procedures, Mitigation, and Monitoring). For example, the military allows access to the northern portion of W-517 during activities that occur far from that area in the southern portion of W-517 so that fishers or tour operators can transit to and fish on White Tuna Banks and other nearby popular fishing sites. The military recognizes the importance of these fishing sites and will continue to work with local fishers to minimize restrictions on access to these sites. Previously, any activities occurring in W-517 would have required closure of the entire warning area regardless of where the activity took place within W-517.
GFCA - 3	**Vessel Operations:** The local boating community operates from boats with limited range and duration while the military has ships with a far	The commenter is correct that most military vessels are larger and have greater ranges than most local boats used by the public. The majority of military activities occur far from shore (> 3 nm) and would not impact nearshore recreational or commercial activities.

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	greater range and duration not to mention funding. Therefore special it is far more conceivable that these military vessels should have operational ranges beyond the scope of the local small vessels.	
GFCA - 4	***1. Firing Ranges in General:*** Land and Sea Firing Ranges should be conducted in areas where there is less intrusion on community activities. a. Land Based Firing Ranges should be limited to small arms live-fire. Weapons such hand guns, shot guns and low-load munitions for rifles. The effective range of these types of fire arms would decrease the need for the extended Ocean Surface Danger or Danger Zone. Recognize that the Island of Tinian has already been designated as a Firing Range for all personnel weapons training. All military personnel in need of the higher caliber weapons training could either jump on a Military Aircraft (travel time 30 min.) or one of the new Hydro-Foil Deployment Watercraft (travel time 1hr. 30min.) just after a hearty breakfast. Landing in Tinian before the food is digested then conduct weapons training and be back on Guam for a nice hot supper. Recognizing that it is a Joint Marianas Region under one supposedly Command (Navy).	The MITT EIS/OEIS does not propose new land firing ranges. In addition, the EIS/OEIS does not designate all of Tinian as a firing range or propose changes to the existing rules for use of weapons on Tinian. Refer to www.cnmijointmilitarytrainingeis.com for information regarding proposed firing ranges.
GFCA - 5	b. Ocean Ranges (Mines and Live-fire) either should be limited to existing designated Ocean Training Areas (i.e. W517) or Ocean areas beyond fifty (50) miles of the Island of Guam or seamounts (reefs). The fifty mile zone is a commonly used buffer for both fishery management and conservation strategies in order to lessen impacts to both pelagic and reef like species. Impacts by such proposed military activities largely remain unknown (especially during seasonal appearances) and not likely to be analyzed. However, it has been noted by fishermen that where there is active military training occurring fishing seems to be poor even in fishing "Hot Spots".	As presented in Chapter 2 (Description of Proposed Action and Alternatives) of the EIS/OEIS, the Proposed Action involves analysis of military training and testing activities in the Study Area that are largely identical to activities that have been ongoing for years. To meet the purpose and need for training and testing activity in the Mariana Islands, the proposed activities are conducted in areas that support requirements for those activities. For most mine warfare activity, training must occur where mines are typically found, in relatively shallow waters. In addition, at-sea training and testing in the MITT is proposed for areas recognized as safe for that activity and includes appropriate mitigations and operating procedures as required by regulations and sustainable range practices. However, the Navy will

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		work with GFCA regarding fishing activities off of Guam and potential conflicts with military training and testing activities.
GFCA - 6	***2. The Orote Pt. Danger Zone:*** **Historical usage: The Orote Point Area:** This area has been used for trolling pelagic fish as it is a natural aggregation area and a natural protected area where boaters can safely operate especially during rough sea conditions (4-5 months a year). It is an area almost equal-distant to the two busiest and only civilian marinas on the western seaboard (Hagatna and Agat). There are good bottom fishing areas (seamount) within the Danger Zone and since stopping is not allowed thus rendering these areas as inaccessible to fishermen. In order for one to truly analyze the impacts by the Action, one must first understand the seasonality of fish; bottom fish, reef fish and pelagic fish and their range. By and large nearly all aggregate around Points where the Island extrudes out. These areas are ***Cocos Pt. Facpi Pt., Orote Pt., Hospital Pt., Two Lovers Pt., Haputo Pt., Ritidian Pt. and Pati Pt.*** These extrusions serve as the fishing "Hot Spots" for fishermen and with Cocos, Orote Tip and Ritidian primarily closed about 4 months in a given year; the inner areas such as the Orote Pt. Danger Zone lessens the already limited fishing grounds. The following factors must also be considered in any designation: The area encompassed by the Orote Danger Zone is also an area of safe refuge similar to Double Reef as water conditions too often change in a moment. In addition, Fishermen transiting the DZ will be running surface lures but will have to stop or slow down to land the fish which is contrary to current edicts.	Danger zones and restricted areas located within 12 nm from shore in the MITT Study Area are well-established and clearly marked on navigational charts used by commercial and recreational vessels. These areas do limit access to fishing grounds potentially of interest to commercial, recreational, and subsistence fishers and to dive sites that may be of interest to residents and tourists. The analysis of potential impacts on local fishers is described in Section 3.12 (Socioeconomic Resources). Fishers may transit through the Orote Pt. Danger Zone; however, mooring or anchoring would not be permitted due to safety concerns and limits on the availability of the range.

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GFCA - 7	**Recommendations:** A.The range should be over-looking the entrance to Apra Harbor and designated as a Small Arms Range (pistols only) or designated Orote Pt. Range could be shifted 90 degrees to the North and the "Danger Zone" limited to land areas. This shift would not impact the land area as it is already part of the "Ammo Wharf Danger Zone". b. The range could be easily converted to an indoor range; recognizing that the range is on a Naval Base and Naval Personnel have a much lesser weapons familiarization requirement than the Marine Corps or Army Service Branches; also recognizing that the Marines are planning their own range at Ritidian and the Air Force operates a Firing Range with minimal impact to the marine community. These segregated Service Branch Ranges makes one wonder if there is truly a single military command or that effective use of limited US financial resources is being realized. We feel that with proper planning and funding the placement of an indoor firing range would more than meet the US Navy Training requirements. It is our understanding that 20 million dollar Marina and an 18 million dollar dog kennel received full funding; another 20 million dollars for an indoor range would be far more appropriate use of DOD Funds. I. In-door Firing Range: such a facility could have the following features: Weather controlled environment (wind, rain and other conditions), controlled lighting (day and night simulations) and lastly an environmentally friendly range where projectiles, casings and gases do not impact the land, air and sea; most especially the boating community.	This EIS/OEIS carries forward, without change, the proposed usage for the Orote Point Small Arms Range analyzed in the MIRC EIS/OEIS. Changes to the existing Orote Point Small Arms Danger Zone and rule may occur only through amendment to the existing rule C.F.R. §334.1420 (Pacific Ocean off Orote Point, Apra Harbor, Island of Guam, Marianas Islands; Small Arms Firing Range). Following the requirements of Title 33 Part 334 of the C.F.R. the range operator may propose an amendment to the Danger Zone rule without requirement for analysis in this EIS/OEIS. The Navy is not considering reorienting the range at Orote Point because it is an existing constructed range. The Proposed Action did not include consideration of moving the range or any changes to the range. The range as depicted in Chapter 2 Description of Proposed Action and Alternatives meets the Navy's training requirements. As mentioned in the previous response, fishers may transit through the Orote Pt. Danger Zone; however, mooring or anchoring would not be permitted due to safety concerns and limits on the availability of the range. No alternative range types are being considered under any of the action alternatives.
GFCA - 8	c. In the event the aforementioned recommendations are unsuitable we offer the following enhancement programs: I. Marker Buoys set up ½ to one mile from the outer boundaries as designated as the Danger Zone for the Orote	The military does not believe the placement of markers buoys is necessary because the range would be clearly defined on navigational charts and would remain accessible to transiting vessels at all times. When the range is active, mariners would be permitted to transit

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	Range. Kindly recognize that many coastal boaters do not have a GPS. The placement of these Marker Buoys may compensate for the loss of pelagic fishing opportunities but more so alleviates encursions. II. Signage at both Marinas for notification that Range is Hot. III. Suggest working with NOAA Weather to include the Range "in-use" notices. IV. Suggest the Orote Danger Zone be changed to a Surface Danger Zone.	directly though the danger zone to a destination outside of the danger zone, but would not be allowed to anchor or loiter within the danger zone. Military activities utilizing the danger zone would be halted until the danger zone is cleared of transiting vessels. Discussions on adding signs at nearby marinas to indicate the status of the range to mariners is on-going. The Navy is coordinating with the local NOAA National Weather Service office on Guam to include all Notice to Mariners on their website. The danger zone at Orote Pt. must be a Danger Zone to meet mission requirements and maintain public safety. The Navy has and will continue to communicate with local community representatives to address issues that are important to the community, such as access to fishing sites. For example the Navy has been limiting access only to portions of W-517 (southwest of Guam) during certain military training activities, which allows fishers access to popular fishing sites (Galvez Bank, Santa Rosa Reef, and White Tuna Banks) located adjacent to the northern portion of W-517 while military training activities are being conducted farther south in W-517. In CNMI waters, the Navy announces time periods when FDM will not be in use for several consecutive days, allowing mariners to plan activities (e.g., fishing) in waters surrounding the island beyond 3 nm from shore (waters from shore to 3 nm are always restricted).
GFCA - 9	***3. Proposed Ocean Small Arms Firing Range:*** **Historical Usage:** The area encompassed by the Proposed Range included traditional fishing grounds. Schooling fish have been frequently found in this area. The Department of Agriculture Fish Aggregating Devices (FADs) is in close proximity to the proposed range. The Proposed Range is also located just outside the largest Marina on the western seaboard and	The proposed small arms training area will be relocated as a result of comments received from the public (including the Guam Fisherman's Cooperative). The Navy intends to work with the U.S. Army Corps of Engineers to locate the proposed Offshore Small Arms Training area (shown in Fig 2.7-1) further to the north to avoid fishing activity. The potential impacts on marine mammals from the proposed activities are analyzed in Section 3.4 (Marine Mammals). The vast majority of predicted impacts from acoustic stressors are expected to be temporary effects to behavior and hearing. These effects are not expected to affect

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	would limit resource access by the boaters as normal range is 12-15 miles from the Marina. This area is also host to a variety of "protected" marine mammals; whales and dolphins that visit the area frequently (most important for the array of Tourism vessels). **Recommendation:** Relocate the Proposed Ocean Firing Range within or to closer the Ocean Dredge Material Disposal Site as designated by the US EPA. This area is already designated and therefore additional exclusion areas unnecessary. Naval Vessels will need to take a direct heading out of Apra Harbor and designated Shipping Lanes without interacting with local vessels (note that there a safety buffer area requirement around all Naval Vessels). Note: In the event the aforementioned recommendation is unsuitable or acceptable relocation we offer the following enhancement programs: I. Marker Buoys set up 1/2 mile from the outer boundaries as designated as the Danger Zone for the Ocean Firing Range. Kindly recognize that many coastal boaters do not have a GPS and if they do the markings would clutter the screen. II. Signage at both Marinas for notification that Range is Hot. III. Suggest working with NOAA Weather to include the Range info.	marine mammal populations. The various means of communicating information on areas restricted to public or commercial activities are described in Section 3.13 (Public Health and Safety) of the EIS/OEIS. As specified in Title 33 C.F.R. Subpart 72.01, Notices to Mariners, the U.S. Coast Guard issues information to the public concerning maritime navigation. There are three categories of Notices to Mariners: the Local Notice to Mariners (LNM), the Notice to Mariners (NTM), and the Marine Broadcast Notice to Mariners (BNM). Additionally, nautical charts issued by the National Oceanic and Atmospheric Administration include these federally designated zones and areas. Operators of recreational and commercial vessels have a duty to abide by maritime regulations administered by the U.S. Coast Guard. See response to GFCA-8 with regards to recommended enhancement programs.
GFCA - 10	***4. Agat Bay Mine Neutralization Site and Piti Floating Mine Neutralization Site:*** **Historic Usage:** These areas are frequently used by all boaters from fishermen to Tourism engaged vessels. The latter is also located in close proximity to a Local Fishing Preserve where is has been scientifically documented that the coral fish larvae disperse	MITT EIS/OEIS does not propose new UNDET or Mine Neutralization sites. The two existing mine neutralization sites are used by divers training to conduct underwater detonations. These sites were previously approved for use in the MIRC EIS/OEIS and were approved and in use prior to the MIRC EIS/OEIS. We will continue to use these previously disturbed sites. Events at these sites are typically completed within 4–8 hours, are coordinated with U.S. Coast Guard for each event, and are announced in Local Notice to Mariners and Broadcast Notice to Mariners in advance of the activity to make mariners aware that the

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	into the Piti Zone. Tourism dive boats also frequent the area either for transit or an expedition where the latter occurs several times daily. **Recommendation:** Relocate the Proposed Mine Neutralization Sites is relocated within or to closer the Ocean Dredge Material Disposal Site as designated by the US EPA. Again, this area is already designated and therefore additional exclusion areas unnecessary. Naval Vessels will need to take a direct heading out of Apra Harbor and designated Shipping Lanes without interacting with local vessels (note that there a safety buffer area requirement around all Naval Vessels (500 yds.). Recently, the number of Military vessels operating within the 15 miles of Guam is ever increasing. This increased presence also adds to the reduction of fishing grounds not to mention the aerial exercises which causes seabirds to dissipate. Note that seabird aggregation is a tell-tale sign that pelagic schools of fish are in the area…aiding fishermen in the hunt. Note: In the event the aforementioned recommendation is unsuitable or acceptable relocation we offer the following enhancement programs: I. Marker Buoys set up ½ to one mile at 1 mile intervals from the outer boundaries as designated as the Danger Zone for the Mine Neutralization Sites. Kindly recognize that many coastal boaters do not have a GPS and if they do the latitude/longitude markings would clutter the screen. II. Signage at both Marinas for notification that Range is Hot. III. Suggest working with NOAA Weather to include the Range info. In closing, while in full support of the US Military Training needs we feel there is a need to establish a cooperative balance between the needs of the military and the	area will be temporarily closed for safety reasons. The temporary exclusion zone is established with a minimum 640 m radius. The Navy schedules training and testing in approved areas only, and reviews all requests for training and testing in the Mariana Islands for deconfliction with known safety hazards and heavily trafficked areas. The security requirement for Navy vessels is 100 yards as established by rule in the C.F.R., unless otherwise modified by the U.S. Coast Guard. Impacts on fishers and tourism are not expected to be significant because of the short duration that the area would be inaccessible and the relatively small size of the area that would be closed. The various means of communicating information on areas restricted to public or commercial activities are described in Section 3.13 (Public Health and Safety) of the EIS/OEIS. As specified in Title 33 C.F.R. Subpart 72.01, Notices to Mariners, the U.S. Coast Guard issues information to the public concerning maritime navigation. There are three categories of Notices to Mariners: the Local Notice to Mariners (LNM), the Notice to Mariners (NTM), and the Marine Broadcast Notice to Mariners (BNM). Additionally, nautical charts issued by the National Oceanic and Atmospheric Administration include these federally designated zones and areas. Operators of recreational and commercial vessels have a duty to abide by maritime regulations administered by the U.S. Coast Guard. See response to GFCA-8 with regards to recommended enhancement programs. The U.S. military will continue to focus on preserving the natural environment while maintaining military readiness. The military has adopted measures to reduce impacts on fishers (see Chapter 5, Standard Operating Procedures, Mitigation, and Monitoring). The military recognizes the importance of these fishing sites and will continue to work with local fishers to minimize restrictions on access to these sites.

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	community. We have presented to you our limitations and graciously forgo the areas beyond such limits. We feel the recommendations aforementioned to be reasonable and should be considered in the Site selection and Environmental Impact Assessment.1	
Guardians of Gani (GoG) - 1	Dear Sir or Madam: I write on behalf of our local grassroots organization named GUATDIA'N GANI - LEGHLIGHIIL GANI (GUARDIANS OF GANI). First of all, we would like to thank you for the opportunity to submit our comments. The local people and residents of the Northern Mariana Islands (NMI) have made it abundantly clear that we have been ignored for so long when it comes to soliciting comments from our local community. We have long felt that the outreach efforts of the military have been largely lacking and meaningless. Secondly, we would like to extend our untiring support for our troops serving the armed forces of the United States of America, most especially, to our Chamorro and Carolinian brothers and sisters who are sons and daughters of our spectacular Northern Mariana Islands. We also give our love and support to their spouses and children for making their own sacrifices at home while they await for their loved ones to return from tour duty and/or training abroad. In response to the proposed expansion of the danger zone on Farallon de Medinilla (FDM), GUARDIANS OF GANI is unequivocally opposed to such. We respond as so mainly because the Commonwealth of the Northern Mariana Islands (CNMI), in our view, has made significant and long standing impacts since the signing of the Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political	Thank you for your participation in the NEPA process. Your comment has been broken down into component parts to ensure that all comments provided in your letter are addressed. As a result, this portion of the comment does not contain a specific question or inquiry related to the EIS/OEIS. Therefore, no response is provided.

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	Union with the United States of America. Since 1976, the year the covenant was enacted, the people of the CNMI have sacrificed not only our lands and resources, but also our Carolinian and Chamorro brothers and sisters who have paid the ultimate price in serving our country and the nation's security.	
GoG - 2	Three alternatives were analyzed in your draft EIS/OEIS: •The No Action Alternative represents those training and testing activities as set forth in previously completed environmental planning documentation. • Alternative 1 consists of the No Action Alternative, plus the expansion of Study Area boundaries and adjustments to location, type, and tempo of training and testing activities, which includes the addition of platforms and systems. • Alternative 2 consists of all activities that would occur under Alternative 1 plus adjustments to the type and tempo of training and testing activities. We submit that you adopt the NO ACTION ALTERNATIVE.	As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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GoG - 3	On June 15, 2013, the U.S. Navy issued its Environmental Assessment/Overseas Environmental Assessment (EA/OEA) Finding of No significant Impact/Finding of No Significant Harm (FONSI/FONSH) with regard to its proposed Mariana Islands Range Complex Airspace Modification. Although this document stipulates "adherence to the July 2010 Record of Decision (ROD) with respect to considered and approved military training activities," and that this EA/OEA is in "compliance with the National Environmental Protection Act (NEPA)" we find that compliance with Section 106 requirements under NEPA is lacking on several key points: • The EA/OEA involved only two other consulting parties, the U.S. Air Force and the Federal Aviation Administration (FAA). There is no mention in this document as to consultation with or by the Commonwealth of the Northern Mariana Island (CNMI), nor more importantly, with or by its public. Holding public meetings over the course of one or two evenings for a two to three hour period does not constitute consultation. • The National Environmental Policy Act (NEPA) and the regulation of the Council on Environmental Quality (CEQ) requires that agencies consider the effects of their actions on the HUMAN ENVIRONMENT in all its aspects, including its cultural qualities. With respect to its proposed undertaking and prior "approved" activities on FDM, the U.S. Navy has chosen to disregard this requirement by "not pursuing further analysis of Geology, Soils, Water Quality, Air Quality, Fish, Marine Mammals, Sea Turtles, Seabirds, Terrestrial Species and Habitats, Socioeconomics, Cultural Resources, and Environmental Justice." • Pursuant to Section 800.4 through 800.5 of Section 106 Review under the National Historic Preservation Act (NHPA), "the agency has to identify historic properties and assess the effects" that the undertaking has on said properties in a manner commensurate with the assessment of environmental	This comment addresses the Mariana Islands Range Complex Airspace EA/OEA and not the Mariana Islands Training and Testing EIS/OEIS. The MIRC Airspace EA/OEA was completed in June 2013 and no further comments can be accepted. The EA/OEA only analyzed modifications to existing training airspace and extension of the Danger Zone around FDM. It did not propose training activities that were different in scope, nature, or location from those approved in the Record of Decision for the MIRC EIS/OEIS. Therefore, the analyses of the resource areas in the MIRC EIS/OEIS, except for public health and safety, transportation resources, regional economy, and recreation, were still valid. The U.S. Air Force and Federal Aviation Administration were cooperating agencies for the MIRC Airspace EA/OEA, not consulting parties. Analyses presented in the EA/OEA have been incorporated into the MITT EIS/OEIS as part of the baseline environment. The MITT EIS/OEIS includes the analysis of training and testing activities that would occur within the modified airspace and Danger Zone around FDM. Effects from training and testing activities were analyzed in the relevant resource sections within Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. The Final EIS/OEIS has been updated with the most recent dive reports (released in 2013, with dives occurring in 2012), and includes information discussed below. It should be noted that the Navy's analysis of mass wasting and erosion on FDM includes historical photograph analyses and direct observations during dive surveys conducted since 1999 off of FDM. The report information has been added to Section 3.1 (Sediments and Water Quality), with specific new text in Section 3.1.3.1.5.3 (Farallon de Medinilla Specific Impacts) in the FEIS/OEIS. The 1999–2004 surveys were completed by a Navy contractor and a

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	factors. • Moreover, Executive Order 12898 requires that agencies pay special attention to disproportionate and adverse environmental impacts on low income and minority populations; such impacts may be cultural in nature. The native Chamorro and Carolinian communities of the Northern Mariana Islands appear on numerous federal reports as "low income, underserved, minority groups" and in its FONSI/FONSH, it is clear that the U.S. Navy did not address any such disproportionate and adverse environmental impacts on the Chamorro and Carolinian communities of the Northern Mariana Islands who have called the Marianas Archipelago their island home for millennia and for whom the islands and the ocean that connects them are one and the same and not distinct nor disparate entities. From a compliance standpoint, we find that the EA/OEA FONSI/FONSH is not only inaccurate, but negligent in its exclusivity with regard to the adverse impact that past military activity has had on FDM and its immediate and surrounding environs, and under which the current proposed MIRC Airspace Modification anticipates to do the same. The many effects of the continued bombing on FDM, for example, cause erosion. Bombing decimates vegetation, thereby exposing the soil, which in turn end up in nearshore waters as a result of runoff. Additionally, any chemicals in the bombs themselves end up in the nearshore waters, either directly or indirectly by leaching into the ground. "The nearshore is defined as an indefinite zone extending seaward from the shoreline well beyond the breaker zone. It defines the area where the current system is caused primarily by wave action." Nearshore waters "provide a unique habitat for a variety of plants and animals. Sea grasses and other aquatic plants living in the nearshore waters provide food and	representative from the USFWS, the National Marine Fisheries Service and the Commonwealth of the Northern Mariana Islands. All surveys since 2004 have been performed by the NAVFAC and Expeditionary Warfare Center's Scientific Diving Services (SDS). Direct ordnance impacts upon the submerged physical environment, which were clearly attributable to training activities, were detected in dive surveys conducted in 2007, 2008, 2010, and 2012. Indirect impacts, such as ordnance that skipped or eroded off the island and rock and ordnance fragments blasted off the island, were detected every year. However, natural phenomena such as typhoons, tropical storms, large wave events, tsunamis/micro-tsunamis and earthquakes are the primary disturbances which shape and modify FDM's physical environment between the intertidal zone and depths of 30 m. During the 2004 survey the dive survey team (which included representatives of stakeholder agencies cited above and a Navy contractor) noted changes to the submerged lands relative to observations made between 1999 and 2003. These physical changes included: (1) fresh boulder/rock slides, (2) submerged rock areas off the southern tip of FDM, that appeared to have been peeled back to expose bright yellow-orange patches of underlying rock, and (3) cracked and broken coral colonies. The 2004 report (released in 2005), stated: "Examination of photographs from 1944 indicate that changes in the geologic structure of the island by erosion and mass wasting …have been going on for decades." No newly submerged cliff blocks were observed between 2005 and 2012. The detonation of live ordnance, and the impact of inert ordnance both act to fracture rock and make the island more susceptible to the impacts of earthquakes, typhoons, and other natural erosional forces. Small to moderate sized (generally < 30 cm) fresh rock fragments have been observed yearly. Many, if not most of these, are clearly the result of training activities. However, the number and size of these items and the locations in which they occur have not resulted in any significant changes to the topography or significant adverse impacts on marine biological resources.

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	shelter for many species of fish and shellfish. Many marine organisms, including most commercially valuable fish species, depend on nearshore waters at some point during their development." [1] "*Sediment* and other suspended solids can wash off when it rains. As these sediments enter coastal waters, fish respiration is impaired, plant productivity and water depth are reduced, aquatic organisms and their habitats are smothered, and the aesthetic enjoyment of the water is diminished." "*Toxic substances*, such as metals (e.g., mercury and lead) and toxic organic chemicals (e.g., PCBs and dioxin), which may originate from" bombing the island, "can severely disrupt the nearshore waters habitat. These toxic substances can cause death or reproductive failure in the fish, shellfish, and wildlife that use the habitat. In addition, they can accumulate in animal and fish tissue (leading to fish consumption advisories), become attached to sediments, posing long-term health risks to humans." [1] "*Habitat modification* results from activities like development, channelization, dam construction, impacts from storms, and dredging," and bombing the island. Typical examples of the effects of habitat modification include loss of vegetation, siltation, smothering of bottom-dwelling organisms, and increased water temperatures. The modification of surrounding lands causes water quality problems that can decrease the number of species capable of living and reproducing in the nearshore waters." [1] Current bombing and the proposed increased bombing activities at FDM WILL HAVE A SIGNIFICANT IMPACT on near shore water habitat.	
GoG - 4	At the scoping meeting held on Saipan at the Multipurpose Building on November 13, 2013, we asked if there were any baseline testing of near shore waters at FDM, and we were	While monitoring of nearshore waters has not been performed for this EIS/OEIS, the best available science was used in the analysis of water quality. In support of the EIS for the Designation of an Ocean Dredged

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	told "no". And that water sampling of near shore waters had not been conducted in the past. It would appear that monitoring of near shore waters has never been done. Therefore, the statement of No Significant Impact is not accurate. Until data is provided, one cannot and must not assume that there will be No Significant Impact.	Material Disposal Site Offshore of Guam (U.S. Environmental Protection Agency 2010a), extensive sediment studies were conducted at two alternative disposal sites that begin approximately 12.4 nm north and 8.9 nm northwest of the entrance to Naval Base Guam Apra Harbor, and at a proposed reference site located inshore of the two alternative sites. Alternative sites and the inshore reference site are located in the MITT Study Area. Information presented in the EIS/OEIS provides a summary of these studies as some indication of sediment characteristics and good sediment quality in the Study Area. This information was used to inform the analysis and ultimately arrive at the conclusions made in the EIS/OEIS.
GoG - 5	Section 802 of the Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America states in part and relative to the lease on FDM: (a) The following property will be made available to the Government of the United States by lease to enable it to carry out its defense responsibilities: (b) (3) on Farallon de Medinilla Island, approximately 206 acres (83 hectares) encompassing the entire island, and the waters immediately adjacent thereto. Section 803. (a) The Government of the Northern Mariana Islands will lease the property described in Subsection 802(a) to the Government of the United States for a term of fifty years, and the Government of the United States will have the option of renewing this lease for all or part of such property for an additional term of fifty years if it so desires at the end of the first term. (b) The Government of the United States will pay to the Government of the Northern Mariana Islands in full settlement of this lease, including the second fifty year term of the lease if extended under the renewal option, the total sum of $19,520,600, determined as follows:	This comment addresses the Mariana Islands Range Complex Airspace EA/OEA and not the Mariana Islands Training and Testing EIS/OEIS. Unfortunately, this document has been finalized and no further comments can be accepted. The EA/OEA only analyzed modifications to existing training airspace and extension of the Danger Zone around FDM. It did not propose training activities that differed in scope, nature, or location from those approved in the Record of Decision for the MIRC EIS/OEIS. Analyses presented in the EA/OEA have been incorporated into the MITT EIS/OEIS as part of the baseline environment. The MITT EIS/OEIS includes the analysis of training and testing activities that would occur within the modified airspace and Danger Zone around FDM. Effects from training and testing activities were analyzed in the relevant resource sections within Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. FDM management measures are in place that limit the amount of annual ordnance expenditure by explosive weight and location, and regularly monitors island resources in order to responsibly manage

Commenter	Comment	Navy Response
	(1) for that property on Tinian Island, $17.5 million; (2) for that property at Tanapag Harbor on Saipan Island, $2 million; and **(3) for that property known as Farallon de Medinilla, $20,600. The sum stated in this Subsection will be adjusted by a percentage which will be the same as the percentage change in the United States Department of Commerce composite price index from the date of signing the Covenant.** To the best of our understanding, your report states that there is no significant impact on the island of FDM with your proposed expansion of the danger zone; in other words, increased bombs, mortars, missiles and toxins dropped on FDM are without further annihilation of the island or the people of the Northern Mariana Islands. By our sense of logic, we find this very difficult to assimilate or even understand. We request, therefore, that the U.S. military, specifically the Navy, conduct a new environmental and socio-economic evaluation so that a proper appraisal of FDM could be made available. This reassessment has been long overdue. We also feel that to indicate that our beautiful FDM was "uninhabited" or is "uninhabitable" and that a mere $20,600.00 to lease it for "purposes" not detrimental to its environs (and to those of her sister islands to its north and south), is not only grossly inaccurate, but expressly and unconscionably negligent.	potential effects. Since the late 1990s, the Navy has established designated impact areas to minimize impacts on areas on FDM such as the remaining taller stature forests in the northern portion of the island and the land bridge towards the southern portion of the island. Although the Navy is increasing some ordnance use at FDM, the extent of the impact areas will remain the same, with the remainder of the island outside of impact areas continuing with no targeting restrictions. The Navy includes FDM as part of the Joint Region Integrated Natural Resources Management Plan, which involves cooperation with local stakeholders (e.g., CNMI Division of Land and Natural Resources). The Navy also consults with the USFWS for potential impacts on ESA-listed species (e.g., the Mariana fruit bat and Micronesian megapode). Further, the Navy maintains additional targeting restrictions to minimize, to the extent practical, potential impacts on nesting seabirds and migrating shorebirds that visit the island.
GoG - 6	FDM has the largest reef mass in all of Micronesia. FDM is a very special place for NMI fishermen because of its proximity to Saipan, additionally; the depth of its reef mass is rich in mafuti (emperor) and atulai (big eye scad), for example. Mafuti and atulai are readily recognized and very much loved by the people of the Marianas most especially during the season of Lent. Moreover, there are three sea mounds immediately north of FDM where fishermen have had and should continue to have	Potential socioeconomic impacts related to fishing near FDM have been addressed in Section 3.12 (Socioeconomics) in the EIS/OEIS. The military is aware that the 12 nm Danger Zone around FDM may affect access to fishing sites around FDM, but regards the safety of fishermen and other boaters as a top priority, and the 12 nm Danger Zone is necessary to ensure safety. The map of the area around FDM (Figure 3.12-4) has been revised to show the bathymetry around the island as a proxy for fishing sites (no data on specific fishing sites is available). Areas shallower than 400 m are considered potential fish

Commenter	Comment	Navy Response
	the greatest potential for harvest. Expanding the danger zone clearly has a significant impact on the livelihood of our fishermen which in turn will decrease their catch affecting our local market by lowering the availability of fish for purchase and ultimately increasing the price of fish. In the end, our diet will be affected because these increased prices on local fisheries will force our local community to purchase cheaper foods such as canned foods which have been scientifically proven to be an unhealthy diet.	habitat accessible to bottom trawlers. While some areas within the 12 nm danger zone will not be accessible during certain activities for safety reasons, access will only be limited temporarily and not for all activities occurring at FDM. The military currently issues Notices to Mariners out to 12 nm around FDM and is seeking a congruent C.F.R danger zone. The military is also planning to announce upcoming periods when FDM will not be used for several consecutive days to allow mariners to plan to fish or transit through the danger zone beyond 3 nm from FDM. Waters around FDM within 3 nm from shore are permanently closed for safety reasons due to the potential presence of unexploded ordnance.
GoG - 7	The Avifauna of Farallon de Medinilla, Mariana Islands (La Avifauna del Farallón Medinilla, Islas Marianas), Michael R. Lusk, Phillip Bruner and Curt Kessler, Journal of Field Ornithology Vol. 71, No. 1 (Winter, 2000), pp. 22-33, discusses the impacts of military training on FDM: **FDM's vegetation appears to have undergone significant changes since the island has been used as an impact area for military training. At the height of the Vietnam era, as much as 22 tons of ordnance per month were delivered to the island (USDN 1975). Over a three year period that began in May 1988, ordnance delivered to the island includes up to: (1) 5 to 612 live/inert bombs per month from bombers, (2) 920 missiles and 1,825 kg of bombs annually from fighter aircraft, (3) 1,440 rounds from naval gunfire annually, and (4) 50,600 rounds of small caliber ammunition and 2,600 grenade rounds annually (USFWS 1998a). The potential for this level of military training to alter drastically the vegetation of FDM was apparent in August 1997 when post-bombardment surveys of FDM revealed 45-50 fresh bomb craters and a large section of the island burned to bare earth (USFWS 1998A). It is likely that this type of damage is representative of vegetative change that can occur during military training and demonstrates its potential to alter the vegetative structure of FDM from one of a medium-height, relatively closed canopy forest, to one dominated by open**	Potential impacts on vegetation on FDM have been addressed in Section 3.10 (Terrestrial Species and Habitats) in the EIS/OEIS. The Navy has included a discussion of how vegetation communities have been affected by military use of the island, compounded by natural processes (e.g. disturbances from typhoons). Figure 3.10-4 has been updated in the Final EIS/OEIS to compare forest structure on FDM with present conditions. As shown in the comparison of aerial photography, forests have been completely removed from the impact areas, with patches of forest on the periphery of Impact Area 1. Forested areas have decreased in the northern special use area, however, decreases here appear to be much less severe with continuous forested areas still evident to the present.

Commenter	Comment	Navy Response
	areas with intermittent patches of low forest.	
GoG - 8	**Despite continuing impacts from military training, FDM remains a valuable seabird nesting resource in the Marianas and deserves protection. It is particularly valuable because it possesses important breeding populations of Masked Boobies and Great Frigatebirds. In order to properly assess the impacts of military training on resident land and seabirds, we recommend that the Navy permit frequent, on-the-ground surveys by qualified biologists. This is the only method by which changes in densities, distribution, and species composition can be adequately monitored over time. Studies of nest success on FDM compared to other islands would also help to determine affects of military training on resident seabirds.**	Potential impacts on sea birds have been addressed in Section 3.6 (Marine Birds) in the EIS/OEIS. The Navy has included in the Final EIS/OEIS additional information regarding great frigatebirds breeding information as well as a statistical analysis of 17 years' worth of monthly and quarterly bird counts of the three booby species that nest on FDM. The results of this analysis are included in Section 3.6.2.6 (Rookery Locations and Breeding Activities within the Mariana Islands Training and Testing Study Area). It should be noted that the three booby species are easily seen (and therefore counted) reducing uncertainty in the survey effort. The results of the statistical analysis do not show any significant changes in population trends for the three booby species included in the analysis.
GoG - 9	Although the Migratory Bird Treaty Act regulations were amended in 2007 to allow for the incidental taking of migratory birds during military readiness activities (50 C.F.R. §21.15), it is worth mentioning that impacts on FDM as mentioned above are significant to the health of our land in relation to its resident birds and its surrounding waters. Furthermore, we are not asking to cease current military practices, rather, to simply stay the course and not pursue the proposed increase of the danger zone.	Potential impacts on sea birds and compliance with the Migratory Bird Treaty Act has been addressed in Section 3.6 (Marine Birds) in the EIS/OEIS. Section 3.1.3.1.5.3 (Farallon de Medinilla Specific Impacts) has been added to the MITT FEIS/OEIS to report direct observations for 13 years' worth of dive survey information. An additional figure (Figure 3.1-1) has also been added to the FEIS/OEIS that shows the location of survey transects of nearshore areas surrounding FDM (e.g. areas near the land bridge, eastern cliff lines, southern end of FDM including an apparent sea cave collapse). Based on these direct observations of damage off the coast of FDM, the majority of disturbances to the seafloor sediments, substrates, and mass wasting of FDM can be attributed to typhoons and storm surges. Further, seafloor and substrate damage attributed to military training activities recovered within 2 to 3 years at the same rate of damage associated with natural phenomenon. The 2012 dive report is available on the project website located at http://www.MITT-EIS.com. The expansion of the Danger Zone around FDM was analyzed under the Mariana Islands Range Complex Airspace EA/OEA process. The U.S. Army

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		Corps of Engineers has authority over the establishment of and changes to Danger Zones. They will use the EA/OEA in their rulemaking process in accordance with 33 C.F.R. Part 334. Their findings will be published in the Federal Register. To better analyze the potential socioeconomic impacts associated with the danger zone, a map of the area around FDM (Figure 3.12-4) has been revised to show the bathymetry around the island as a proxy for fishing sites (no data on specific fishing sites is available). Areas shallower than 400 m are considered potential fish habitat accessible to bottom trawlers. While some areas within the 12 nm danger zone will not be accessible during certain activities for safety reasons, access will only be limited temporarily and not for all activities occurring at FDM. The military currently issues Notices to Mariners (NTMs) out to 12 nm around FDM and is seeking a congruent C.F.R danger zone. The Navy is also planning to announce upcoming periods when FDM will not be used for several consecutive days to allow mariners to plan to fish or transit through the danger zone beyond 3 nm from FDM.
GoG - 10	The Commonwealth of the Northern Mariana Islands is a fishing community. The legal concept of a fishing community comes from the Magnuson Fishery Conservation and Management Act, reauthorized in 1996 and amended by enactment of the Sustainable Fisheries Act (SFA), which also renamed it the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The MSA requires Fishery Management Councils to amend existing fishery management plans and, among other things, pay more attention to human fishing communities. MSA National Standard 8 (NS8) specifies that: Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and the rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the	Potential socioeconomic impacts related to fishing near FDM have been addressed in Section 3.12 (Socioeconomics) in the EIS/OEIS. The military is aware that the 12 nm Danger Zone around FDM may affect access to fishing sites around FDM, but regards the safety of fishermen and other boaters as a top priority, and the 12 nm Danger Zone is necessary to ensure safety. The map of the area around FDM (Figure 3.12-4) has been revised to show the bathymetry around the island as a proxy for fishing sites (no data on specific fishing sites is available). Areas shallower than 400 m are considered potential fish habitat accessible to bottom trawlers. While some areas within the 12 nm danger zone will not be accessible during certain activities for safety reasons, access will only be limited temporarily and not for all activities occurring at FDM. The military currently issues Notices to Mariners out to 12 nm around FDM and is seeking a congruent C.F.R danger zone. The military is also planning to announce upcoming periods when FDM will not be used for several consecutive days to allow mariners to plan to fish or transit through the danger zone beyond 3 nm from FDM. Waters around FDM within 3 nm from shore are permanently closed for safety

Commenter	Comment	Navy Response
	extent practicable, minimize adverse economic impacts on such communities (MSA Section 301(a)(8)). The amendments also defined fishing community: The term "fishing community" means a community which is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community. (MSA Section 3(16)) The National Standard Guidelines (50 CFR 600.345(b)(3)) provided additional definition of fishing communities: A fishing community is a social or economic group whose members reside in a specific location and share a common dependency on commercial, recreational, or subsistence fishing or on directly related fisheries-dependent services and industries (for example, boatyards, ice suppliers, tackle shops). In response to the mandate of MSA to identify and describe fishing communities, the Western Pacific Regional Fishery Management Council (Council) proposed that each of the major island areas (Hawaii, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands) be identified as a fishing community, because In contrast to most U.S. mainland residents, who have little contact with the marine environment, a large proportion of the people living in the western pacific region observe and interact daily with the ocean for food, income and recreation ... fishing also continues to contribute to the cultural integrity and social cohesion of island communities ... In each island area within the region the residential distribution of individuals who are substantially dependent on or	reasons due to the potential presence of unexploded ordnance.

Commenter	Comment	Navy Response
	substantially engaged in the harvest or processing of fishery resources approximates the total population distribution. These individuals are not set apart ... from island populations as a whole (September 1998, p. 52-53). On April 19, 1999, the National Marine Fisheries Service (NMFS) approved identification of American Samoa, the Northern Mariana Islands, and Guam as fishing communities (64 FR 19067). FDM is rich in fisheries for our people. Please allow us more access to our birthrights at our FDM. The waters surrounding our islands have been recently returned to us, rightfully. On September 18, 2013, 48 U.S.C. § 1705 was amended and now reads, in part: Subject to valid existing rights, all right, title, and interest of the United States in lands permanently or periodically covered by tidal waters up to but not above the line of mean high tide and seaward to a line three geographical miles distant from the coastlines of the territories of Guam, the Commonwealth of the Northern Mariana Islands, the Virgin Islands, and American Samoa, as heretofore or hereafter modified by accretion, erosion, and reliction, and in artificially made, filled in, or reclaimed lands which were formerly permanently or periodically covered by tidal waters, are hereby conveyed to the governments of Guam, the Commonwealth of the Northern Mariana Islands, the Virgin Islands, and American Samoa, as the case may be, to be administered in trust for the benefit of the people thereof.	
GoG - 11	Prior to September 18, 2013, we did not have our submerged lands. The U.S. government has finally recognized that we have been neglected for many decades past and has begun remedies by enacting U.S. Public Law 113-34. We are asking that the Navy do the same. Please respond favorably to our	As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The chosen

Commenter	Comment	Navy Response
	requests: 1. Adopt the No Alternative; 2. Allow our fishermen more time to harvest from the rich waters of FDM; 3. Conduct a complete reassessment of the impacts on FDM thus far; and 4. Allow for on-site studies of our wildlife on FDM by non-military personnel.	alternative will be selected in accordance with the regulations established under the National Environmental Policy Act of 1969, as amended. To help mariners better plan fishing and boating activities that involve accessing the waters around FDM (waters between 3 and 12 nm), the Navy plans to notify mariners of time periods when FDM will not be in use for several consecutive days. Announcing in advance when FDM will be in use and when it will not be in use for an extended period of time will facilitate the use of waters around FDM by the public for recreational activities. Waters around FDM within 3 nm from shore are permanently closed for safety reasons due to the presence of unexploded ordnance. The Navy shares your concerns regarding FDM. The potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. Because FDM has been used for and is used for live and inert bombing, for safety reasons, third-party personnel are restricted from the island. The FDM range is operated in accordance with the terms and conditions specified in the 2010 Biological Opinion (U.S. Fish and Wildlife Service 2010a).
GoG - 12	Should you still find it necessary to pursue Alternative1 or Alternative2, we strongly suggest renegotiating the technical agreement executed on January 6, 1983 by and between the Commonwealth of the Northern Mariana Islands and the United States of America. We are undoubtedly part of the fabric of our nation's security	Thank you for your participation in the NEPA process.

Commenter	Comment	Navy Response
	and we share those same concerns as any other citizen within the 50 states. However, what sets us apart from the rest of the nation is the fact that we are a small chain of islands living off of our lands and waters. FDM has been, and always will be, an important and living component of our NATIVE MARITIME HERITAGE. Thank you for your time and meaningful consideration of our submission.	

Table E.3-3 contains comments from private individuals received during the public comment period and the Navy's response. Responses to these comments were prepared and reviewed for scientific and technical accuracy and completeness. Comments appear as they were submitted and have not been altered with the exception that expletives, addresses, and phone numbers have been removed, as necessary.

Table E.3-3: Responses to Comments from Private Individuals

Commenter	Comment	Navy Response
Anonymous (Northern Island Mayor's Office) (Written)	As a Civilian, I am neither for nor against the Military in General. However, if the trainings and testing is sure to not harm both marine land and human life then I will give my support.	Thank you for participating in the NEPA process. The military implements to the maximum extent practicable, mitigation and conservation measures while training and testing is being conducted in order to minimize and reduce potential impacts.
Anonymous (Written)	The commenting & public hearing process was not very open or accessible. The website was not very user friendly also. In regards to marine life, threatened species should also be in consideration of monitoring & study. We should not wait til they are endangered to protect them. Training should not happen at the expense of important cultural resources.	Thank you for participating in the NEPA process. Because of the footprint of the proposed activities, public meetings with an "open-house" style, including posters and one-on-one discussions with subject matter experts, is a more effective way of communicating the Proposed Action and the results of the EIS/OEIS analysis to the public. In addition to the meeting venues, the public could download and review the document, and make comments to it, on the website, which is readily available to anyone anywhere. The military is committed to protecting the marine environment during the conduct of its training and testing activities. As described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the military has used extensive measures to protect the marine environment while training and testing for nearly a decade. The analysis is applicable to all species. The Navy has consulted with NMFS and USFWS on Federally protected species. The EIS/OEIS fully considers the potential social and cultural impacts associated with the proposed activities.

Commenter	Comment	Navy Response
Anonymous (Written)	No Action Alternative: Because many of these military ordinances are still presently around the Marianas today, there is no telling that during training & military exercise, some of these explosive materials might be around for many years within our lands & sea. Who knows, some may be carrying poisonous & radioactive elements.	Thank you for participating in the NEPA process. The analysis and the science show that there are no significant impacts on marine and terrestrial environment as a result of military training and testing activities. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities.
Anonymous (Written)	I believe the training activities currently taking place on island are already a threat to the people and environment. Our island is considered sacred among the natives and it would be great for visitors, and people not local to the place, to grasp this. However, training activities may continue to happen. We are thankful to the military for what they have and are doing to improve and protect us. We are not resentful towards the military's actions. We just want a little acknowledgment and respect towards our culture and beliefs. Being a small island located in the pacific, we have a lot of issues to worry about already, mostly dealing with the environment.	Thank you for participating in the NEPA process. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities.
Anonymous (University of Guam) (Written)	"I do not support the proposed Mariana Islands Training & Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands."	Thank you for participating in the NEPA process. As per CEQ interpretation on the “No Action Alternative,” the “no action” is “no change” from the current direction or level of intensity; therefore, the “no action” alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities.
Anonymous (Written)	I do not support the actions of the U.S. military using any Mariana Island for aggressive and violent training. Thank you	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during

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	for educating the local people on their brother/sister islands.	the conduct of its military training and testing activities.
Anonymous (Written)	People need to see more beauty to appreciate the beauty and resources that these islands contain. Military has bit off more than it can chew	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
Anonymous (Written)	I propose that the MITT activities implement a No Action Alternative'. In such, this recommendation does not mean that I support the on going activities already occurring in the Marianas Islands. Such Training Activities and testing poses an extreme threat to our islands, people and our Marine & land resources. Stop militarization In the Marianas Islands!!!	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities.
Anonymous (University of Guam) (Written)	I do not support the proposed MITT activities. I recommend the No Action Alternative. However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training & testing activities pose severe threats to our islands. I am against the destruction of my islands & the negative impacts it has on our marine life.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities.
Anonymous (Written)	The testing that is about to happen on our island is not safe for the environment. Even though they say it won't harm the environment, the training they do will affect the wildlife that's been living in the area. Also it's an ancestry ground. We keep our island as beautiful as it can get. The training will just alter some of the species' living habit.	Thank you for participating in the NEPA process. The military is committed to protecting the environment during the conduct of its training and testing activities. Effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities.
Anonymous	Est 2000 is a possible alternative - there's only so much land	Thank you for participating in the NEPA process. The Alternatives carried

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(University of Guam) (Written)	that can be taken before there is nothing left	forward were developed to meet the Navy's purpose and need and to ensure that it can fulfill its obligation under Title 10 of the United States Code. See Section 2.5 (Alternatives Development) for more detailed information on the development of alternatives.
Anonymous (Written)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the "No Action Alternative." However, my recommendation of the alternative does not mean I support the ongoing training activities already occuring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities.
Anonymous (Electronic)	DO NOT BOMB FDM! DO NOT INCREASE TRAINING IN THE MARIANA ISLANDS. OKINAWAN CITIZENS HAVE PROTESTED AN INCREASED MILITARY PRESENCE AND SO ARE THE PEOPLE OF THE MARIANAS. THERE HAS BEEN WIDESPREAD DISSATISFACTION WITH THE MILITARY IN THE MARIANAS AND THIS REACTION SHOULD BE TAKEN SERIOUSLY BY THE U.S. MILITARY. AN INCREASED PRESENCE WILL NOT PRODUCE LONG-TERM ECONOMIC EQUALITY THROUGHOUT THE MARIANAS AND WILL ONLY SERVE TO INCREASE THE CNMI GOVERNMENT'S DEPENDENCE ON THE MILITARY. THERE IS NO AMOUNT OF MONEY THAT THE MILITARY CLAIMS IT WILL BRING TO THE ISLANDS THAT WILL REVERSE THE NEGATIVE IMPACTS THAT THE USE OF WEAPONS WILL HAVE ON THE LAND AND THE PEOPLE OF THE MARIANAS.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
Anonymous (Written)	There are good things and bad things to the testing. The good things are at least they do have a place to test on and find out the effects. It is also okay since they do notify people and make it safe. However it is bad because our islands are sacred and we should aim to protect it. This is harmful with the radiation and harmful to the animals around it. I think they	Thank you for participating in the NEPA process. The military is committed to protecting the environment during the conduct of its military training and testing activities, including FDM. Effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating

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	should stop the testing and find a new way to test.	Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities.
Anonymous (Written)	I think that it is good that they have a place to test bombs and their other services but there are consequences. Although they do warn fishermen, they are still harming the sea animals with this, they should be careful. In the room, they did say that they are expanding their area but that also means they are expanding the harm towards sea animals.	Thank you for participating in the NEPA process. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. The military is committed to protecting the marine environment during the conduct of its training and testing activities. As described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy has used extensive measures to protect the marine environment while training and testing.
Anonymous (Written)	I feel that you are gradually setting up the destruction of the Mariana islands with your trainings and testings. As I continued down the line of posters, your justification for your action showed to be hollow. They did not give me the assurance of "safety" that was constantly stressed. Most of your reasons were vague and lacked a clear description of how your actions could affect and benefit US positively. This is our island! Please respect it.	Thank you for participating in the NEPA process. The military is committed to protecting the marine environment and public safety during the conduct of its military training and testing activities.
Anonymous (Written)	The formal open-house event for the EIS is nice, but an actual conference where interested individuals can listen to speakers about the various components in the EIS and ask questions would be best for this purpose. Allows everyone to share and gain more detailed information for those that do not have time to read the entire EIS.	Thank you for participating in the NEPA process. After considering several options for meeting format, the Navy selected the format used during the MITT public meetings based on its desire to provide detailed information to the public and provide the public an opportunity to ask questions to the various subject matter experts. The Navy found that some people are hesitant to ask questions in a public setting, especially in a room with a number of people, so the Navy provided everyone an opportunity to ask questions one-on-one with the experts in each particular field of interest through the poster station format during each public meeting. For those who wanted to make oral comments in a public forum, the Navy provided that opportunity. This format ensured that everyone had sufficient time to ask questions and have their

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		comments heard.
Anonymous (Written)	I choose the no action Alternative, fishing in the NMC Islands has been a way of life for my family. & we have seen drastic changes in the population of wild life in our ocean, I do not support the training currently taking place. I believe the live ammunition in this area disturbs the matured fishes habbits scaring them and preventing them from spawning in shore.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. Though the intensity of live training will increase, the events are of relatively short duration and therefore we do not anticipate that fish will be affected as a result of the training exercises and testing activities. Fish may respond behaviorally to sound sources in their hearing range (most Navy sound sources are not in the hearing range for most fish species), but this reaction is only expected to be brief and not biologically significant. Most commercially important fish species are not believed to hear mid- and high-frequency sound sources which make up the majority of sound producing activities.
Anonymous (Academy of Our Lady of Guam) (Written)	In sum, the Mariana Islands training and testing of the use of vessels, sonar, and explosives will indeed take impact on the marine habitat, marine birds, vegetation, invertebrates, fish, and cultural resources. It does not matter whether the tests affect a small or big fraction. it still doesn't deny that these species will be harmed during the duration of this period. Sonar waves can be compared with a faulty sound wave just imagine experiences excruciating soundwaves on a daily basis. It is like giving permission for our dolphins and whales to suffer. All for the sake of surveying & "protecting" this island that is not being threatened in the waters.	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable during its training and testing activities.
Anonymous (Academy of Our Lady of Guam) (Written)	Stop supporting the destruction of marine life and land life. Please stop telling the public that the benefits outweigh the consequences. If you are going to destroy our island for military purposes, at least be honest about it. Although the	Thank you for participating in the NEPA process. The military is committed to protecting the marine environment during the conduct of its training and testing activities. As described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the

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	military might think your reasons to bomb and attack the Mariana Islands are valid, the people of Guam do not. The military definitly does not have the consent of Guamanians to destroy our island. Also, the ends do not justify the means.	Navy has used extensive measures to protect the marine environment while training and testing.
Anonymous (Academy of Our Lady of Guam) (Written)	I do not support the sonar training. It may benefit the U.S., but there are no benefits for our ocean lives. You may turn the waves off when you see oncoming creatures but that is not 100% guaranteed. There are many undiscovered sea creatures in the Mariana Islands, so I do not support sonar training.	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities.
Anonymous (Academy of Our Lady of Guam) (Written)	I do not fully agree with the bombing on the mariana islands. Even though it may benefit the military they are destroying what is left of the mariana islands. I also disapprove because it harms the animals and environment.	Thank you for participating in the NEPA process. The military is committed to protecting the environment during the conduct of its training and testing activities. As described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy has used extensive measures to protect the terrestrial and marine environment while training and testing.
Anonymous (Academy of Our Lady of Guam) (Written)	The sonar presentation did not deny the fact that the sonar was a contribution to the death of whales. Although the sonar is a way to defend their navy sailors from warfare, it still has negative effects on the natural habitats. The whole MITT presentation is a bit overwhelming for those who want to keep the islands safe. It is a sensitive case for islanders because it is our home and we should not be marginalized. I agree, however that it is for the overall protection of the island.	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities.
Anonymous (Academy of Our	Although these environmental impact statements lists down ideas of the good it may contribute for the military, I feel as	Thank you for participating in the NEPA process. The military is committed to protecting the marine environment during the conduct of

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Lady of Guam) (Written)	though some of these factors have been a threat to the Mariana Islands in terms of their use in the technologies produced. I am aware that the intentions of these trainings are for preparation for the worst, but are they really that valuable to sacrifice our natural habitat without the consent of the People of Guam! Hear Our Voice!	its training and testing activities. As described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy has used extensive measures to protect the marine environment while training and testing.
Anonymous (Academy of Our Lady of Guam) (Written)	I wasn't able to go through all the booths, but I was able to go to 2. I went to one about sonar and FDM. I mentioned radar and how it contributes to the death of whales. She went on with how its not the only contributing source and she does deeply care of them. Her stance was that its for our defense, our protection. Sonar is used to detect mine. I thought this was really interesting. I knew they kept away enemy ships but wasn't aware of its lookout for bombs and mines. I really dislike the bombing of outer islands. However because our safety is also important, I can't be against it. We need to train in order to be safe. I understand the people of Guam's point of view, but I wish they provide more compelling evidences so the People of Guam could know what they're fighting for.	Thank you for participating in the NEPA process. Thank you for participating in the NEPA process. The military implements to the maximum extent practicable, mitigation and conservation measures while training and testing is being conducted in order to minimize and reduce potential impacts.
Anonymous (Our Islands Are Sacred) (Written)	I do not support the proposed Mariana Islands training and Testing Activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occuring in the Marianas. The Navy's training and testing activities pose severe threats to our islands and its people.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities.
A. A. (Electronic)	The proposed bolstering of military planning and activities throughout the Mariana Islands will not doubt have tremendously negative impacts on the physical environment in the region, as well as on social, cultural and political arenas. As a citizen of the CNMI, I simply do not support any and all	Thank you for participating in the NEPA process. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. As described in Section 3.11 (Cultural Resources), Section 3.12 (Socioeconomic Resources), and Section 3.13 (Public Health and Safety)

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	actions that the military has always had, and continues to have in this area. The islands are essentially being used by the U.S. military and government as the expense of the lives of those in the Marianas, all in the name of a convoluted notion of "security," that misleads the American public into believing it is truly becoming a safer nation. All the while, the people who have always suffered and continue to suffer form this belief, are the people of the Marianas who's lands need to be bombed and trained on in order to maintain the "security" of mainland America. This growing militarism must stop now.	of the EIS/OEIS, the Navy's proposed activities are fully compatible with other uses of the ocean space around Guam and the Mariana Islands. The EIS/OEIS fully considers the potential social and cultural impacts associated with the proposed activities. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
P. A. (Electronic)	Is it really necessary? How will doing this benefit us in any way? All of this just entails destruction. Destruction to land and all of its inhabitants. More thought and research should be done about how this would affect the wildlife. It affects people too! We care about our islands. It takes billions of years for one island to emerge and to destroy it doesn't make sense at all. Then it becomes a home to many species of all animals and plants. It only makes the matters worse for this to affect species of the land and sea! It's slaughter! Are we trying to lead these creatures into extinction? Our environment is everything and we should only treat it with the utmost respect. While recycling is being strongly encouraged to save the environment of an island, another island is being bombed and destroyed. Something needs to change! Changes in the environment affects all creatures! It is like a domino effect. It may not be soon but in the long run. This madness needs to stop.	Thank you for participating in the NEPA process. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
Y. Acfalle (Electronic)	I have a BIG feeling that the department of defence has planned this all along. If we go way back in history, it is evident to see that they're trying to take over our islands as their training site-- it is even evident today. If you compare our islands to other islands such as the Federated States of Micronesia, Hawaii, Puerto Rico, they all have bases but they	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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	don't take up most of their islands. They still speak their native language even though they are part of the US. That's the sad thing, we are an UNINCORPORATED territory of the US. They are trying to get rid of us, they are trying to push us out of our islands. I feel they chose our islands because of our Marianas Trench. --This is why they had that rule of absolutely NO speaking our native language in schools back then (to weaken our culture). --This is why whenever a person from here goes to the states, they (a US citizen) say they're not allowed to speak of our citizenship or they don't accept our ID's. --This is why I want to fight it. This isn't right! Us Chamorus have to end this now before it's too late. We need to spread the word! We need to take action NOW because right now, the way I see it, in probably 50 years or less, our islands will be 100% military bases. #SMH	
R. Ady (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. It puts our sacred and takes away our land.the land of the people	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
L. Aguilera (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
M. Aguon (Electronic)	I am against the DOD proposal to use the Northern Mariana Islands as a training and bombing site. This area MUST be preserved and NOT used for the proposed destructive	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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	training.	
T. Ahana (ASUW Pacific Islander Student Commission) (Electronic)	Me and my constituents here at the University of Washington do not support the US military occupation of any islands in the Pacific. Please stop the occupation!	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
T. Akerele (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
S. Alberts (Electronic)	It is wrong to take peoples land. This land is sacred, and it does not belong to the US! Stop colonization, and gentrification, and exploitation of these people, and of all people. This is threatening something beautiful, and important.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
D. Alcantara-Camacho (Electronic)	I oppose the current training and testing in the Marianas and select the No Action Alternative. We don't need no war. We need Love a whole lot more.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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R. Alexander (Electronic)	I understand that from a military point of view, a training area in this region might be necessary, although personally I believe that the ocean should be used for peaceful purposes only. With regard to the EIS, however, I have several concerns. 1. Although the EIS process itself allows community participation, the people of Guam, in spite of being US citizens, are not able to participate in the formulation of US military policy itself, because, for example, they cannot vote for president or have a voting say in Congress. It seems to me that until the people of Guam can participate from the begining in policy formulation, aggressive plans such as this have no place here. 2. Sonar has been proven to adversely affect hearing and perhaps other functions in dolphins and whales. There are also possibilities that it will affect other sea life. The EIS itself states that it will permanently affect hearing in whales and dolphins. If this is known in advance, then according to the precautionary princile, it seems that until this problem is solved sonar training should not be conducted in the area. 3. The proposed training area contains vasts areas of ocean, islands, and air. We know that in recent years, global warming and atmospheric changes have brought a serious of disasters of unimaginable proportions. What guarantees are in place to ensure that extensive sonar use and underwater explosions will not affect the geo-thermic balance and/or the ability of sea life to sense and protect themselves from changes in their environment? Are there guarantees to protect the ocean, sea life, and surrounding island communities in the event of such a disaster during training exercises?	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals.
A. Arriola (Academy of Our Lady of Guam) (Written)	It was good to learn more about what the US is trying to do and how in some ways it could play a role in our protection since we are a US territory. However, I was questionable if they knew the harmful effects that could happen to surrounding islands, such as Guam. I did learn that they advise fishermen before they start testing, which I thought was very considerate, but I also wish they could reconsider the harmful	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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	effects that could happen. I'm stuck in between & could only hope for the best for our island.	
K. Asuncion (Electronic)	I think that these training and test should be contained to the Islands of the Mariana's that are already being used for trainings, the islands that are uninhabited. Why are is the military trying to take more lands? There is more than enough lands for real life trainings in the islands that are already being used!	Thank you for participating in the NEPA process. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur and the MITT Proposed Action does not include the "taking" of more land. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
M. Atoigue-1 (Electronic)	Why doesn't the United States just give us our Constitutional Rights?	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
M. Atoigue-2 (Electronic)	Why does the United States have to use our Islands for testing? Aren't there plenty of unused lands in the United States that can be test on?	The Alternatives carried forward were developed to meet the Navy's purpose and need and to ensure that it can fulfill its obligation under Title 10 of the United States Code. See Section 2.5 (Alternatives Development) for more detailed information on the development of alternatives and rationale on why alternative training and testing locations are not feasible. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
G. Avilla (Academy of Our Lady of Guam) (Written)	I spoke to the speaker who is a part of the Coast Guard, who practices the transmission of awareness and information to the island of target. He spoke about how the Navy and Coast Guard practice the safety of warning the people of the island when they are prepared to release bombs and any release of materials dropped by the military. I believe that the speaker enlightened me about the whole idea of awareness and protection of people. Even if the protection and awareness is provided, the effects still will conquer the life on the islands of	Thank you for participating in the NEPA process. The military is committed to protecting the marine environment during the conduct of its training and testing activities. As described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy has implemented extensive measures to protect the marine environment while training and testing.

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	the inhabitants.	
L. Axelrod (Electronic)	I write this as a lawyer who practiced environmental law. There is no environmental mitigation that can make up for the injuries and death this "training" has inflicted and will in the future. This project is an environmental disaster without proportionate redeeming value. It's the ultimate hubris to destroy innocent life by bombing the hell out of this area in the name of preserving life. Has the military learned nothing about species being pushed further and further into small pockets of survival and about the injuries inflicted by sonar? Or, at the most 'practical' level, about the benefits flora and fauna wildlife provide humans by way of medicine, etc.? This is a form of destroying a village to save it, writ large. The lessons of Vietnam have been forgotten if, in this age of declining natural resources and species going extinct from various forces, including climate change, the military thinks that eradicating a rich area of species population can do anything but contribute to killing off human life since we're dependent on the chain of life, not outside it. Kill this program, please.	Thank you for participating in the NEPA process. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
V. Balajadia-1 (Electronic)	To whom it may concern: I am commenting on your proposals concerning our "beloved" island home "the Mariana Islands"and surrounding ocean-the blue pacific! I strongly believe that the outcome of your proposal will destroy our environment and our care of the earth and our future as an island nation. I urge you to listen to our island leaders and indigenous people's concerns in your deliberations as you move forward with your plans. KUDOS and blessings to Julian Aguon and those working to preserve our "small" island!	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
V. Balajadia-2 (Electronic)	To whom it may concern: I am commenting on your proposals concerning our "beloved" island home "the Mariana Islands"and surrounding ocean-the blue pacific! I strongly	The Navy shares your concern for marine life. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the

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	believe that the outcome of your proposal will destroy our environment and our care of the earth and our future as an island nation. I urge you to listen to our island leaders and indigenous people's concerns in your deliberations as you move forward with your plans. KUDOS and blessings to Julian Aguon and those working to preserve our "small" island!	EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
C. Barretto (Electronic)	The People of Guam appreciate the freedom we live under, but in this day and age I am not sure that the price we have to pay if it's worth it. imagine these facts below: 1.The MIRC is the largest DOD range in the world. It spans 501,873 nautical miles of ocean and is 3 times larger than California. 2.The MIRC also includes 70,000 nautical miles of airspace for training. This is the size of the state of Washington. 3.The MITT would nearly double the ocean covered under the MIRC, expanding the range of DOD training to 984,469 square nautical miles. The MITT would be larger than the states of Washington, Oregon, California, Idaho, Nevada, Arizona, Montana, and New Mexico combined. 4.Under the MIRC/MITT, DOD will bomb Farallon de Medinilla, blow up mines under water and perform sonar training. 5.The use of sonar training will result in permanent hearing loss for up to 59 whales and dolphins per year. (MITT, Vol. 1, p. 3.4-114) This will kill off our natural resources and environment and will have a large impact on our island community and the rest of the world.	Thank you for participating in the NEPA process. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals.
J. Bartlett (Main Street Moms) (Electronic)	The U.S. Military plans to occupy ALL of Pagan Island for live-fire training and military exercises, ignoring the indigenous rights of Pagan Islanders, and the devastating environmental impacts that such activity will certainly cause. Please do not	Thank you for participating in the NEPA process. Training and testing activities on Pagan are not part of the Proposed Action for this EIS/OEIS. Actions proposed for Pagan are addressed in the CJMT EIS/OEIS. Information regarding the CJMT EIS/OEIS can be found at:

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	let this happen to such a precious biological treasure	http://www.cnmijointmilitarytrainingeis.com.
T. Benavente (Electronic)	Leave our Island and waters alone, Guam is our home.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
P. Blair (Electronic)	No to the Navy conducting live rounds training in the Mariana's Pagan Island. Clean up of one of the Hawaiian Islands used for such training is not complete. Navy nuclear testing in the Marshall Islands without ESA continues to cause long standing environment and human health problems for the Marshallese.	Thank you for participating in the NEPA process. Training and testing activities on Pagan are not part of the Proposed Action for this EIS/OEIS. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. Actions proposed for Pagan are addressed in the CJMT EIS/OEIS. Information regarding the CJMT EIS/OEIS can be found at: http://www.cnmijointmilitarytrainingeis.com.
M. Blas (University of Guam) (Written)	I do not support the proposed Mariana Islands Training & Testing activities. I support the No Action Alternative. It is obvious that using that area for these activities pose severe threats to our islands, and beyond that it is selfish.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities.
M. Blas-1 (Electronic)	Permanent hearing loss of 59 dolphins and whales???? That's just like murdering them! Hearing is their most important sense and without it, they have little chance of surviving. Their echolocation is how they survive and how they escape predators... Is this really necessary? Does it have to be done here? And can it be tested in a laboratory and not in our waters killing real animals? In this day and age, simulations are very realistic and would result in NO animals killed... This past year, we have seen one giant dead sperm whale wash up on Guam's waters and one dolphin. It was very sad to see this, but with your proposed MITT site, we will see 59 of these a year? That's deplorable. What happened to the Marine	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for

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	Mammal Protection Act? And what happened to the Marianas Trench marine National Monument that President George Bush created? I'm truly disgusted by this decision to practice active sonar in the Marianas and by the lack of concern for our fellow mammals and these beautiful creatures that have been on this earth millions of years longer than we have, yet we humans (our US Navy mostly) are so insensitive and horrible to them...	decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals. The Navy's assessment of potential impacts reflects the use of the best available and applicable science determined in consultation with NMFS. This includes analysis of the cumulative impacts, mid and high frequency active sonar, underwater detonations, and activities within the Marianas Trench National Marine Monument. The training activities within the MITT are not expected to have any effect on those resources designated for special protection under the Mariana's Trench Marine National Monument designation. Furthermore, the Presidential Proclamation included that the prohibitions included in the Proclamation shall not apply to the activities and exercises of the Armed Forces. The extensive mitigation measures followed during activities and exercises of the Armed Forces within the Monument ensure that the activities are consistent so far as is reasonable and practicable with the Proclamation.
M. Blas-2 (Electronic)	Protection of Wildlife and Habitat??? How can you say that you are doing ANY of this if you are going to be dropping bombs in our waters? Our fish live in these waters. Our turtles live in these waters. Turtles that are federally protected in the USA... Our whales and dolphins live in these waters... Our food live in these waters. We only have ONE ocean... with many parts near many different countries... By bombing in OUR backyard, you are poisoning our waters, OUR food, OUR people... There has got to be another way... There just has to be... And with technology and our ingenuity... We need to find those ways... If you REALLY want to PROTECT WILDLIFE AND HABITAT.. If you REALLY want to PROTECT OUR CULTURAL RESOURCES AND HISTORIC PROPERTIES... Unless it's just talk and you are just saying those words to pretend you do...	The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals.
M. Blas-3 (Electronic)	Here's what I want to know... When our Navy is out there bombing and testing bombs on the whales and dolphins' homes, who is out there checking to make sure that they are ceasing their activity "until the animal exits the zone"? So they will just be patrolling and policing themselves... We will just	The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5

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	have to take "their word" that they are honoring the marine Mammal protection act and the Endangered Species Act? I hardly qualify that as "The Navy protects marine species and reduces its effects on the marine environment when training and testing at sea." It's like saying you don't need principals at a school because we just trust that the students will do what is right... And like saying that the police are not necessary because everyone is going to do what they are supposed to do... And how can you say that they are reducing the effects on the marine environment? You are BOMBING THEIR HOME!!! You are bombing our food source! You are bombing and putting tons of chemicals into the water that we swim in, the water that we fish from, the water that we invite tourists to visit and stimulate our economy. THE OCEAN IS THEIR HOME!! THE OCEAN IS OUR FOOD SOURCE!! IT WILL GREATLY IMPACT AND HARM US FOR YOU TO BE BOMBING IN AN AREA THREE TIMES THE SIZE OF CALIFORNIA! THIS IS UNACCEPTABLE AND JUST PLAIN WRONG! Please do something REAL to protect our Marine animals.. Here's a suggestion: DON'T BOMB OUR OCEAN. DON'T PLAY WITH BOMBS FOR PRACTICE. DON'T KILL OUR ANIMALS. DON'T POISON OUR PEOPLE. FIND ANOTHER WAY. IF YOU REALLY WANT TO PROTECT MARINE SPECIES.. IF YOU REALLY WANT TO REDUCE THE EFFECT ON THE MARINE ENVIRONMENT.	(Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals.
J. Blume (Electronic)	The USA has done enough harm in Guam. It is home to great natural beauty and magnificent creatures, a number of whom are endangered.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
J. Borja (Electronic)	I do not support the Mariana Islands Training and Testing. The Chamorro people have suffered enough. Our island has very little cultural insignias that remain in tact and not destroyed by people. These islands above Guam May be nearly impossible to occupy, but it is still sacred land. In Guam we have almost no wildlife, birds killed by snakes brought to the island by ships. Insects, rodents, and disease have become	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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	normal to our once sacred land. Much like the Native Americans we lived off the land, prayed to spirit, honored our surroundings, respected what and who came before. We didn't have a say when they suppressed our language and culture hundreds of years ago, now we do. Please do not destroy our sacred lands. One day when land shifts beyond human control it may one day become home to many Chamorros. Our reefs of Guam almost extinct still suffering and diminishing slowly yet surely. It is time to stand against destroying and stand for preserving Mother Natures beautiful bounty. Our islands are not up for grabs. Let our land be free from western development and high profit gaining, power struggle, and the need to control all beings on earth, including animals and plants. Stop destroying the earth	
G. Borrini-Feyerabend (Electronic)	Unique biodiversity on the scale of the foreseen range in the Mariana Islands should NOT be destoyed or kept hostage to military exercises. Doing so would be nothing short of an environmental crime.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
H. Bowen (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats the wellbeing of the people and animals that live there. Why continue seeing the people of these islands and their lands as expendable? The expansion would be irresponsible and very detrimental.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur.

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E. Bowman (Electronic)	I am opposed to the Department of Defense's plans for the Marianas Islands Range Complex (MIRC) and the Marianas Islands Training and Testing (MITT). In light of the calamity that occurred in the Marshalls and the continuing threats to Pagat and the entire Marianas as well as this region, it is time to step back and rethink an increase in destruction of the irreplaceable natural environment. I stand with the people of Guam and the CNMI who do not support increased destructive foreign military presence here.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
C. Brands (Electronic)	I request that you NOT allow the bombing and otherwise destructive "training" exercises on the Mariana Islands. There are valuable and diverse, terrestrial and marine animals and fragile ecosystems, that, if destroyed, will never recover. Do Not allow the bombing of the Mairana Islands.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
B. Bukikosa (Simon Sanchez High School) (Electronic)	Instead of using live ammunition, use blanks. Also cut down the amount of training days and exercises to prevent a large amount of marine life casualties. Or concentrate training site in a less inhabited area	Thank you for participating in the NEPA process. Range complexes provide controlled and safe environments where military ship, submarine, and aircraft crews can train in realistic conditions. The combination of undersea ranges and operating areas with land training ranges, safety landing fields, and nearshore amphibious landing sites is critical to realistic training (including use of live ammunition), and allows electronics on the range to capture data on the effectiveness of tactics and equipment—data that provide a feedback mechanism for training evaluation. The Navy continues to research new ways to provide realistic training through simulation, but there are limits to the realism that technology can presently provide. Unlike live training, computer-based training does not provide the requisite level of realism necessary to attain combat readiness. Simulation cannot replicate the inherent high-stress environment and complexity of the coordination needed to combine multiple military assets and personnel into a single fighting unit. Most notably, simulation cannot mimic dynamic environments involving numerous forces or accurately model the behavior of sound in complex training media such as the marine environment.

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		The Alternatives carried forward were developed to meet the Navy's purpose and need and to ensure that it can fulfill its obligation under Title 10 of the United States Code. See Section 2.5 (Alternatives Development) for more detailed information on the development of alternatives and rationale for the amount of training required. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
M.C. (Written)	This question was asked to a six-year old. What do you like about Guam? How would you try to keep it? I want to protect my family. I would like families to give can food to the Philippines. Guam I think about the flowers. I care about the animals.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
H. Cabrera-1 (Oral/Written)	My name is Herman B. Cabrera and I am a resident of Saipan. I am in opposed to the proposed military firing and bombing activities on and underwater of the Commonwealth of the Northern Mariana Islands (CNMI). Let me start by saying that our ancestors survived for centuries here in the Mariana Islands and lived to tell their children the tale of our natural healthy ocean environment and the abundance of marine recourses in the ocean that they used as their main food source. The vast blue water of this part of the Pacific Ocean still has lots of different kind of marine life living in it particularly those around our islands in the CNMI from Rota, the island on the south end of the CNMI, to Farallon De Pajaros, the northern end of the CNMI. Fish was and still is part of our healthy natural diet. Therefore, besides land, the ocean is the only other lively hood we have from the beginning to the present.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
H. Cabrera-2 (Oral/Written)	After World War II, the military left us with military junk such as unexploded ordinance, filled and empty oil (as well as tar, petroleum and other type of fuel) drums, Polychlorinated	The Navy complies with all applicable laws and regulations for military expended munitions and range clearance for the training and testing activities proposed within the MITT EIS/OEIS Study Area. Off-range

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	biphenyl (better known as **PCBs**) and other poisonous and toxic pollutants, and even the million gallon fuel tanks all over the south western part of Saipan without any mitigation plans for proper disposal. Not to forget to mention, this junk was left here on the island without warning to the local residents of the dangers when someone touches or gets near them. Another example, Puerto Rico dump was the military's disposal area for some of this junk and the area has become a public health dilemma as the situation within and around it still contains lots of impurities that even the military themselves now do not know what toxin materials are in there. We, the local people, do not want to fish around that area because we are afraid of what impurities those fish may have been exposed to. The white sand beach to the south of Puerto Rico dump changed over time to purple black like color and the place now smells horrible. Since the time the military left Saipan, Puerto Rico dump remains as it was, as a toxic dump. It still contains the harmful waste materials and worst of all we never hear from the military as to when they will come and properly clean up and dispose of this toxic waste.	unexploded ordnance resulting from previous war activity is recognized by law and regulations as a problem to be addressed by a cooperative effort between the Federal and local governments, implementing programs such as the U.S. EPA Brownfields Program or the U.S. Army Corps of Engineers Formerly Used Defense Sites Program.
H. Cabrera- 3 (Oral/Written)	The reasons why I am opposed to these military activities in the Mariana waters are: 1. These activities if allow will gradually contaminate our water around our islands and eventually will have strong negative environmental impact on all sea life in the CNMI waters.	The Navy shares your concern for marine life. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
H. Cabrera- 4 (Oral/Written)	2. Bombing activities, when exploded on or in the waters, will have a significant and harmful impact to our marine life such as the fragile plankton. Plankton is a microscopic animal that live on the surface and underwater which can easily be destroyed. Plankton is an important part of the marine life in	The Navy shares your concern for marine life. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy

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	the ocean. Once these microscopic animals are destroyed Pelagic and all other fish in the CNMI waters will be greatly diminished.	implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
H. Cabrera- 5 (Oral/Written)	3. Bombing activities along the Mariana Islands will stop us from being able to enter within 12 miles from the firing and bombing zone. We will be forbidden to go to our northern fishing grounds. This will limit my communities fishing capability and will have a significant impact on our fishing industry which will limit the economic growth within the CNMI.	Prior to training at FDM, a Local Notice to Mariners is issued at least 72 hours in advance, and other public outreach, including notices in local news outlets, is provided, notifying the public of potentially hazardous training at FDM. The Mariana Islands Airspace Environmental Assessment/Overseas Environmental Assessment proposed that a 12-nautical-mile Danger Zone be established around FDM in accordance with the requirements of the U.S. Army Corps of Engineers and Title 33 Part 334 of the Code of Federal Regulations. Danger Zones and their rules are published in the Federal Register and are added to navigation charts for public warning and safety. The Danger Zone may be closed to the public on a full-time or intermittent basis, as stated in the regulations; however, danger zone regulations provide for public access to the area to the maximum extent practicable.
H. Cabrera-6 (Oral/Written)	4. My travel industry group in collaboration with Guam tourist industry is now promoting an international cruise ship for the Mariana Islands. The proposed military firing and bombing in the Mariana waters will definitely impacted our tourism economic growth.	The military recognizes that tourism is an important economic resource to Guam and the CNMI and that the natural resources of Guam are a key component of the tourism industry. The EIS/OEIS analyzes the impacts of the proposed activities on socioeconomic resources, including tourism, and while impacts on certain resources (e.g., accessibility to fishing sites) may increase under Alternatives 1 and 2, these impacts are not expected to be significant or substantial. The majority of activities using ordnance occur far from shore. Additionally, the military's standard operating procedures involve Lookouts surveying for non-participating vessels during activities. If a vessel is encountered, the activity is halted or relocated. The military is and will continue to work with local fishers and mariners to minimize potential impacts on the tourism industry.
H. Cabrera-7 (Oral/Written)	5. Farallon De Medenilla (FDM) is an island just about 45 miles north of Saipan. The island is surrounded by a coral reef and it is in its birth stage. The military love to bomb this fragile and	In 2008, the Agency for Toxic Substances and Disease Registry (ATSDR) received an inquiry from Senator Crisostimo regarding concerns of potential exposure to chemicals released on the island of FDM in the

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	god given island. The island has been bombarded for decades and the middle part of the island is almost gone. The destruction is far too great and the water around the island is contaminated. According to one of the scientists from NOAA, who gave a presentation about dolphins, stated that Guam waters is contaminated 20% more than the water in Saipan. I believe that the water around FDM is by far more contaminated than Guam. The pelagic fish that travel thru FDM waters are contaminated. We catch and eat these contaminated fish. Based on CHC record people of the Marianas are dying of cancer practically every week. This is an alarming rate and most evidence points to this being caused by these contaminates left here by the military. Many of my people are dying of cancer and this military venture will only cause more pain and more suffering. My people deserve more than this.	Commonwealth of the Northern Mariana Islands. The ATSDR worked closely with the U.S. Department of Defense and U.S. Environmental Protection Agency (EPA) to gather available information related to these concerns. ATSDR examined fish, water, sediment and other media that was collected near bombing ranges and other marine environments where explosive chemicals were dropped or dumped. ATSDR also reviewed numerous files on studies about the accumulation of chemicals in seafood. From this information, they concluded that pelagic fish caught in open waters are not likely to contain high levels of explosive residues and do not pose a public health hazard to people who eat them. Additionally, as indicated in Section 3.1 (Sediments and Water Quality) of the EIS/OEIS, a study by Pait et al. (2010) of previous Navy training areas at Vieques, Puerto Rico, found generally low concentrations of metals in marine sediments. The Navy compared sediment concentrations of metals and compared them to the National Oceanic and Atmospheric Administration's Sediment Guidelines and found average sediment concentrations of the metals evaluated, except for copper, were below both the threshold and probable effects levels. The average copper concentration was above the threshold effect level, but below the probable effect level. The military is committed to protecting the environment during the conduct of its military training and testing activities, including FDM. FDM management measures are in place that limit the amount of annual ordnance expenditure by explosive weight and location, and the Navy regularly monitors island resources in order to responsibly manage potential effects. Effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities.
R. Cage (Electronic)	The U.S. military continue to destroy the Earth and the natural world. Please stop and get some help concerning your day to day mundane life style.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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C. Calvo-1 (Electronic)	I believe it should be in everyone's best interest to take every precaution there is to prevent any disturbance of marine life to their highest extent.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. As described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities.
C. Calvo-2 (Electronic)	I believe it should be in everybody's best interest to prevent as much harm from being caused to marine life. Absolutely all precautions should be thoroughly considered.	The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
L. Camacho (We Are Guahan) (Electronic)	The Draft EIS fails to evaluate all reasonable alternatives. Three alternatives are considered in the Draft EIS, the "no action" alternative, DOD's preferred alternative, and a third alternative that adds 3 major training exercises and adjusts the preferred alternative for air and sea systems command. The Purpose and Need portion of the Draft EIS speaks generally about the importance of testing and training. It also provides an overview of the importance of the existing range. The Drat EIS, however, does not explain why DOD needs to nearly double the size of the existing range. It also does not explore any other configurations that have the potential for fewer environmental impacts. The no action alternative itself is misleading. DOD has presented the no action alternative as a continuation of the MIRC. This process is required for DOD's continued use of the MIRC area for testing and training. There is a significant difference between the status quo, which was addressed in the previous MIRC EIS, and a true no action alternative. The MIRC itself should be considered and evaluated as a separate alternative rather than being presented as a "no action" alternative. DOD is preparing several environmental impact statements covering actions in this region. Several of these are connected. DOD does not appear to have do an cumulative impacts assessment on these proposed actions. DOD should prepare a SEIS that properly complies with all of NEPA's requirements.	Thank you for participating in the NEPA process. The Alternatives carried forward were developed to meet the Navy's purpose and need and to ensure that it can fulfill its obligation under Title 10 of the United States Code. See Section 2.5 (Alternatives Development) for more detailed information on the development of alternatives. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. Cumulative impacts are addressed in Chapter 4 (Cumulative Impacts) of the EIS/OEIS.

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S. Camacho (University of Guam) (Electronic)	The military build up has its pros and cons, however there are more cons that weighs out the pros. The information that I have searched for through the Internet and from my professors plays a big role here towards this plan for the military build up. Even when looking at a few pictures about the plan and what they plan on occupying and changing will be a huge drastic change for everything on the island and the people living on it throughout the Mariana Islands. I was reading through a news article in the Internet and how there are different opinions within the people living in the island of Saipan. They mainly focus on the economy and the environment towards the island. There are some people who have agreed and want the military build up to happen due to the fact that they think it will boost up the economy, because there many people leaving the island to seek for jobs and better opportunities. The people like for example former Rep. Manny Tenorio is siding the military build up due to the economy and the lack of job opportunities, where he thinks the build up will provide for jobs for the local people and will help the island. However, there are also some people who do not agree with the build up like for example Victoria-Lola Leon Guerrero of the Guam-based We Are Guahan, is against the build up, because she is concern for the environment and remembers a past incident within the island due to the military build up. Some people think that there will still be no job opportunities and it will go to off-island workers instead of the local residents. When I was reading another article as well through the internet and where my previous professor of Marine Biology has discussed before dealing with the military build up that the military plans on taking out a huge amount of coral reef habitat on the island of Guam in the Apra Harbor area. The island of Guam's economy mainly depends on the tourism as to what attracts the tourists are the coral reefs habitats, the beaches, and other sites that deals with the environment. There were also other issues that are being concerned like the taxation issue, the issues with water supply, sewage treatment, electricity, and roadways. The	Thank you for participating in the NEPA process. The proposed build up is not part of this Proposed Action; the build up on Guam was considered as part of the EIS/OEIS for the Guam and CNMI Military Relocation. The Proposed Action for the MITT EIS/OEIS does not involve major permanent relocations of U.S. Army, USN, USMC, USAF, or U.S. Coast Guard personnel or assets. These actions are addressed in the Guam and CNMI Military Relocation (2012 Roadmap Adjustments) SEIS. Information regarding the SEIS can be found at: http://www.guambuildupeis.us. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. As described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities.

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	surge in wastewater discharge to coastal waters, runoff from construction activities, and the population having to be increased could have damaging consequences for the near shore reefs if proper wastewater treatment systems and erosion-control techniques are not put in place. When looking at a map of the site for the military build up towards the entire region of the Mariana Islands, it was a complete shock towards myself due to the fact that the military will be occupying the whole entire region and it leads the local people to wonder on what will happen to them. The build up is not an easy thing to do let alone it also comes with different types of trainings, testing's, and all sorts of heavy equipment that can affect the people and the island. It can also lead the people to leave the island for good like previous islands from World War II. Anything is possible at this point, so in my view and my opinion. I am deeply concern for all of the islands within the Mariana Islands and Im also against the military build up.	
R. Capati (Academy of Our Lady of Guam) (Written)	What I learned from the questions we've asked about the FDM, during the Mariana Islands Training and testing was really convincing and it may be helpful although in the end I know it may destroy the islands especially the fishes, and species here on Island. The guy also mentioned that he would alert the fishermens about the training and testing and itll also be announced before they do the testing. It was good to learn something new tonight. I kind of have mixed emotions about this though.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
J. Capitulo (Electronic)	Testing in the Marianas Trench is a bad idea. The Marianas Trench is like one of the greatest monuments in the world that must be kept and not be tampered by using bombs. There are also hundreds of marine life that reside in the Marianas Trench. Thousands of fishes will die which the nearby islanders depend on. Nearby natives will be agitated if not angered if their source of food is gone. Fishing is also a	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures

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	culture to them. Also the testing of the active sonars could disrupts the natural sonars that dolphins and whales have. It will cause them to be confused that they cannot navigate properly. Many of them could die and would ruin the island's source of tourism which could be terrible since some islands only depend on their source of tourism for a source of funds. Training and testing on the Marianas Island is bad idea overall since it will disrupt lives and not just the marine life but the islands as well since it is their home.	with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals. The Navy's assessment of potential impacts reflects the use of the best available and applicable science determined in consultation with NMFS. This includes analysis of the cumulative impacts, mid and high frequency active sonar, underwater detonations, and activities within the Marianas Trench National Marine Monument. The training activities within the MITT are not expected to have significant effects on those resources designated for special protection under the Mariana's Trench Marine National Monument designation. Furthermore, the Presidential Proclamation included that the prohibitions included in the Proclamation shall not apply to the activities and exercises of the Armed Forces. The mitigation measures followed during military activities and exercises within the Monument ensure that the activities are consistent so far as is reasonable and practicable with the Proclamation.
M. Caringal (Electronic)	Although I am originally from the island of Saipan, I treasure the island of Guam because it is my current home. I can see that the people of Guam are really concern about what may happen to their island. I hear a lot of Chamorros asking "Out of all the islands, why Guam?" And I, too, ask that question. How much more acres of land are going to be taken away just for the testing? Yes, I have heard that the testings will be conducted on the lands already occupied, but what if one day, more land needs to be taken? The Chamorros of Guam may not have any more land to pass down from generation to generation. I understand both sides of the situation, and as long as the testings do not burden the citizens of Guam, then the testings can proceed.	Thank you for participating in the NEPA process. The Alternatives carried forward were developed to meet the Navy's purpose and need and to ensure that it can fulfill its obligation under Title 10 of the United States Code. See Section 2.5 (Alternatives Development) for more detailed information on the development of alternatives and rationale on why alternative training and testing locations are not feasible. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. The military is committed to protecting the terrestrial and marine environment during the conduct of its military

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		training and testing activities. As described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities.
I. Carrera (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
G. Carter (Electronic)	To whom it may concern, Im Glenda Carter and currently a student of University of Guam major in Social work. I would like to express my concern regarding to Marianas Training and Testing(MITT) in my island as well as the neighboring island such as the Commonwealth of Northern Mariana Island (CNMI). I understand that the US Navy is preparing for readiness, development, and research to expand the military capability however, I believe that these training and testing will only deteriorates the island natural resources. The marine species will be endangered, and the safety of community will be at risk. Please take any consideration and evaluate carefully on what is the major possible impact of these training and testing to the island of Guam as well as the CNMI. I think every living things deserves to live.	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS including public safety. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
G. Carter-2 (Electronic)	To whom it may concern, I'm Glenda and currently a student from University of Guam. I would like to voice out my concern regarding to Marianas Training and Testing (MITT) in Guam as well as my neighboring island such as the Commonwealth of	The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental

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	Northern Mariana Island (CNMI). I understand that the US Navy is preparing for readiness, development and research to expand the military however, I believe that these training and testing will only endangering our marine species and the possible health risk to the people in the community. According to Natural Resources and Defense Council, they stated that the increase of training exercises will "harm marine mammals and disrupt their migration, nursing, breeding, or feeding, primarily as a result of harassment through exposure to the use of sonar". They also added that although the "sonar use does not result in these or other kinds of physical injury, it can disrupt feeding, migration, and breeding or drive whales from areas vital to their survival". In the article called Sonar* An Effective Herbicide that Poses Negligible Risk to Human Health and the Environment,by www.sepro.com, "Sonar is absorbed through the leaves, shoots, and roots of susceptible plants, and destroys the plant by interfering with its ability to make and use food", which can be harmful to the environment and any thing that is in contact with this hazardous military devices. additionally, the explosive testing is also harmful to humans because of the chemicals such as "combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive), or water-reactive" can cause chronic health effects,health toxins, irritants, damage of mocous membranes, and lungs, skin, and eyes damages. Please take any consideration of these negative factors that very detrimental not only to our environment but also to the lives of billions of people. Please think about the health of your children, grandchildren, and your great-grandchildren and try to understand how they are going to live in this earth with full of hazardous chemicals that you will left behind. :(	Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals. The Navy has applied for a letter of authorization from NMFS concerning potential impacts of the proposed training and testing activities on all marine mammals protected under the MMPA and known to occur in the MITT Study Area.
A. Castro (CM101) (Written)	I do not support the military taking Pagan because it is home to many indigineous Chamorro people.	Thank you for participating in the NEPA process. Training and testing activities on Pagan are not part of the Proposed Action for this EIS/OEIS. Military activities proposed on Pagan are addressed in the

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		Commonwealth of the Northern Marianas Islands Joint Military Training (CJMT) EIS/OEIS. Information regarding the CJMT EIS/OEIS can be found at: http://www.cnmijointmilitarytrainingeis.com.
F. Cepeda (Electronic)	Mariana's islands our sacred and I'm here to defend it our ancestor found the islands for the future of the chamoru people not a testing ground for bombs or for your strategic plans I plan on visiting all the the islands north of Saipan in the future I wanna see the islands the way my ancestor found it so have some respect Uncle Sam you don't see us chamoru people going to the United States of America taking land or bombing any of your lands	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
F. Charfauros (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. As described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities.
R. Charfauros (Electronic)	Please take into consideration the neighboring islands that consist of many diverse populations that call these islands their home.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
D. Choi (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action

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	occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands. People have a right to their land—these rights are the founding principles of the united states. The hypocrisy of these policies are outrageous and ignore the fundamental principles of equality and justice. Please stop the exploitation and invest into areas that do not destroy or exploit people. There is a way to find win-win situations and with the innovation of technology, ideas and globalization, there is a better way.	until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
C. Christensen (Electronic)	The Draft EIS (DEIS) fails to address the possibility that partulid snail species (members of the genera Partula and Samoana) may occur on Farallon de Medinilla. In Table 3.10-2 (Species Considered as Candidates for Endangered Species Act Listing) the DEIS notes that four species of the land snail family Partulidae occur in the project area. It also states that one of them, the humped tree snail (Partula gibba) is known to occur, or to have occurred, on Guam, Rota, Aguiguan, Tinian, Saipan, Anatahan, Sarigan, Alamagan, and Pagan. No mention is made of the occurrence (or verified ABSENCE) of this species on Farallon de Medinilla. The discussion of the terrestrial environment of Farallon de Medinilla (section 3.10.2.1.5, pp. 3.10-22 to 3.10-23) states that a survey of the vegetation of that island has been undertaken, but makes no mention of a survey of terrestrial invertebrates or, specifically, of a survey the island's land snails. In the absence of survey data verifying that no partulid species inhabit Farallon de Medinilla, it cannot be assumed that these species are absent. Although in Table 3.10-2 it is stated that partulid snails inhabit "[s]ub-canopy vegetation in lower strata of intact limestone forests forested and river corridors," the presence (or former presence) of P. gibba on the volcanic islands of Anatahan and Pagan indicates that the presence of (at least) this species on Farallon de Medinilla cannot be excluded on the basis of the information provided in the DEIS.	Thank you for participating in the NEPA process. The types of training events, as described in the EIS/OEIS, "may affect" partulid snails that may inhabit forested areas of training lands. The Navy, in consultation with the USFWS Pacific Islands Field Office has designed training measures that avoids, minimizes, or offsets potential impacts on partulid snails. The Final EIS/OEIS has been updated to include measures and conclusions included in the USFWS Biological Opinion.

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J. Citizen (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands. The people of the Mariana Islands do not enjoy the privlege of citizenship and do not even get to vote on their own future.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. As described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities.
A. Coolidge (Electronic)	Please stop destroying our precious cetaceans and ocean environment for the sake of preparing for war. When will the truth be accepted by the military that violence does not keep us safe and that the greed of the military complex is such a large part of the force behind it all? The mentality of war is so retro, i.e. from early Greek and Roman times, somehow continuing in the mentality. Time for transformation. Instead of testing war machines, what about getting into non-lethal games, or music, or challenges that amp up the adrenaline without harming anyone. Why not take some time to simply sit down and listen and talk with "the enemy?" We are all people with feelings and thoughts and beliefs. And the world is abundant enough for all of us. Please -- drop the need to overpower and destroy and instead create a better world -- truly.	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
P. Crispell (Electronic)	I cant imagine a justification for bombing yet another island in the Pacific. Pagan is an inhabitable island and land owners still desire to live there. There are endangered species that will be disrupted by bombing and live fire practices let alone the vehicles and personnel traffic. Including Pagan in a training area will render the island unusable for its native inhabitants	Thank you for participating in the NEPA process. Training and testing activities on Pagan are not part of the Proposed Action for this EIS/OEIS. Activities proposed on Pagan are addressed in the CJMT EIS/OEIS. Information regarding the CJMT EIS/OEIS can be found at: http://www.cnmijointmilitarytrainingeis.com.

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	and the land owners with rightful claims. The US has destroyed enough natural habitat for its war machine. I realize it wont stop until we have destroyed everything beautiful in the world but it would be nice to leave this one island alone as long as we can.	
J. Crump (Electronic)	The Navy should not do SONAR testing near Guam or the Commonwealth of the Northern Mariana Islands. The Natural Resources Defense Council (NRDC) is the nation's most effective environmental action group and they state that manmade sound waves, which we know as SONARs drown out the noises that marine mammals rely on for their survival, cause them injuries and death. "Nature," the international weekly journal of science published an article confirming the military's knowledge of their SONAR testing on marine mammal life, in particular the effects it has on whales. So, I plead with the Navy wanting to test around our waters to test elsewhere! Guam and the CNMI are surrounded by marine mammal life. The release of their SONARS will kill almost all of them. There are several solutions to prevent injuries and death, but those options cannot be explored near Guam or the CNMI because of our high marine mammal life. There are other water grounds where marine mammal migration isn't as high where SONAR testing can be an option. Let the Navy use other devices to check if marine mammals are nearby before releasing their SONARs. Let us research more about SONAR testing and the effects it has on marine mammal life and until then, let us limit the SONAR intensity until we discover how to avoid serious injuries and death to our marine mammals. Let us meet our military's need for testing and keeping our nation safe without killing a big part of our nations marine life.	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals. The Navy has applied for a letter of authorization from NMFS concerning potential impacts of the proposed training and testing activities on all marine mammals protected under the MMPA and known to occur in the MITT Study Area.
A. Cruz (Electronic)	I do NOT support the current or proposed Marianas Training & testing activities and recommend the "No Action" alternative. Based on the current geopolitical climate in the region, and on the historical track record in the Marianas, as well as	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action

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	American treatment of Natives in the U.S., it would only serve to further tarnish the American reputation. In would be prudent to encourage and settle first the issue of self determination, particularly in Guam, before mass migration and further land takings occur. It would only serve to affirm America's role as a Democratic and just nation, rather than make it out to be imperialist and a military colonizer.	until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities.
A. Cruz (Academy of Our Lady of Guam) (Written)	My main concern is about the marine life. The waters around FDM would be 'closed off' at certain times just for the testing of bombs and different weaponry. When I had questions about the safety of the creatures that lived in the water, few of the people had solid answers. I strongly believe that these testings will have nothing but a negative affect on the islands. They Koku bird and some other animals that are close to extinction inhabit that land as well.	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. Many Navy at-sea training and testing areas are accessible to the public for recreational and commercial purposes. The Navy acknowledges that during specific exercises, its training and testing could briefly limit public access (usually lasting hours) to a very limited portion of coastal and ocean areas to ensure public safety.
A. Cruz (University of Guam) (Written)	I DO NOT SUPPORT THE PROPOSED MARIANA ISLANDS TRAINING AND TESTING ACTIVITIES. I RECOMMEND THE 'NO ACTION ALTERNATIVE'. HOWEVER, MY RECOMMENDATION OF THIS ALTERNATIVE DOES NOT MEAN I SUPPORT THE ONGOING TRAINING ACTIVITIES ALREADY OCCURRING IN THE MARIANA ISLANDS. THE NAVY'S TRAINING AND TESTING ACTIVITIES POSE SEVERE THREATS TO OUR ISLANDS. I WILL NOT ALLOW OUR PEOPLES CUSTOM OF HOSPITALITY BE TAKEN ADVANTAGE OF. I WILL NOT ALLOW OUR HOME TO BE DESICRATED AND LEFT TO TROUBLE MY CHILDREN.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities.
E. Cruz (Our Islands Are Sacred)	We can no longer continue to allow you to devalue and disrespect the very islands that we have inherited from our ancestors. NO ACTION ALTERNATIVE! But we do not support	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action

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(Written)	the activities already in place. PEACE IN THE PACIFIC.	until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities.
M. Cruz (Electronic)	What exactly are the military's plans for the region?	Thank you for participating in the NEPA process. This Proposed Action for this EIS/OEIS focuses on military training and testing activities within the MITT Study Area.
M. Cruz-2 (Electronic)	Although the Mariana Islands Training and Testing (MITT) Environmental Impact Statement (EIS) provides information to the public regarding the proposed action that will be taken by the United States Navy, from the perspective of certain sects of the general community on the island of Guam, the EIS fails to provide information specific and concrete enough to assure the community of its safety. This comment will focus on the effects that the U.S. Navy's proposed actions may have on the sea life in the region. Although the EIS, along with the website that is provided for it to inform the public, states that "[p]rotecting the marine environment of the Mariana Islands is an important goal for the Navy," the supporting documentation provided fail to justify this claim. The importance of this goal comes to question when one reads he Department of Defense's "Marine Mammal Stranding Report," which reports that despite the presence of "… marine mammal mortalities associated with Navy activities, the root causes are not clear in most cases. (42)" Reports such as these, along with the MITT/EIS website, which is riddled with generalities and vague statements regarding the "strict guidelines and … measures" employed by the U.S. Navy do little to assure the public and concerned communities that the Navy is indeed taking measures to ensure the safety and welfare of sea life in the region. Further, these reports are contradicted by sources like Peter Eisler, whose article implies that the Navy is doing very little to understand what wildlife	The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals. The Navy has applied for a letter of authorization from NMFS concerning potential impacts of the proposed training and testing activities on all marine mammals protected under the MMPA and known to occur in the MITT Study Area.

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	may be affected by their training activities. The purpose of this comment is not necessarily to state that the U.S. Navy is explicitly participating in activities that will be harmful to the community (or to accuse them of doing so); it is to question and examine the specifics of the information that the U.S. Navy is providing for the general public. The resources discussed in this comment contain so many general statements and lack so many specifics that it would be difficult for any concerned individual of the community to truly absorb and believe that the U.S. Navy is indeed concerned about the welfare and safety of sea life in the region, and that the same train of thought can easily be extended to the Navy's concern for the people of these regions.	
S. Cucinotti (Electronic)	It would serve us all well if we protect the environment!	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
G. Dahtah (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training

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		and testing to meet the purpose and need. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. As described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities.
G. Datuin (University of Guam) (Written)	I do not support the proposed Mariana Islands Training & Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already ocurring in the Mariana Islands. The Navy's training & testing activities pose severe threats to our islands"	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities.
J. de Cruz-1 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	To the Project Manager MITT EIS/OEIS: Thank you for the opportunity to comment on the Draft Mariana Island Training and Testing EIS/OEIS. Generally, I believe the document covers the effects of the proposed actions in detail and is well written. Sections 2 and 3 that detailed how the analysis was carried out, what other alternatives were considered (and why they were omitted from further consideration), and the extensive information on explosives, weaponry, and proposed activities written for those with non-military backgrounds were especially appreciated. Exceptions to the general high quality of the document are the sections on terrestrial species. These sections seem to have more errors of fact, often struggle with grammar or are awkwardly worded, and lack coverage or data for the Marpi Maneuver Area on Saipan. Therefore, most of my comments and suggestions will focus on sections 3.10, 4.3, 4.4, and 5, with specifics given below:	Thank you for your comment and for participating in the NEPA process.

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J. de Cruz-2 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 3.10.2.3.4.2 Population and Abundance [of swiftlets] states that there are 10 known nesting caves on Saipan but there is a discrepancy with Figure 3.10-7 that lists only eight.	The Navy has updated the Final EIS/OEIS with the most recent known occurrences of ESA-listed species within the Saipan Marpi Maneuver Area. This information has been obtained from the USFWS representative on Saipan during the informal phase of the Section 7 ESA consultation between the Navy and the USFWS.
J. de Cruz-3 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 3.10.2.3.6.4 Status within the MITT Study Area [of common moorhen] does not give any information on the status of moorhen in the Marpi Maneuver Area on Saipan.	Based on the best available information, the Marpi Maneuver Area does not support habitat for the Mariana common moorhen. The USFWS, in support of the Section 7 ESA consultation with the Navy, provided information regarding the current status of species within the Saipan Marpi Maneuver Area. Military training activities within the Saipan Marpi Maneuver Area will not affect this species.
J. de Cruz-4 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 3.10.2.3.8.4 Status within the MITT Study Area [of megapodes] does not give the status of megapodes on either Rota or Saipan. As this is one of the endangered species that is found to be adversely affected by several of the proposed actions it might be a good idea to improve the information in this section. The species is not known to be present on Rota (and this should be stated), but the megapode has been documented by surveys in the Marpi Mitigation Bank and the Bird Island Conservation Area that are both in close proximity to the Marpi Maneuver Area on Saipan. More information would be helpful here.	The Final EIS/OEIS has been updated with more clarifications on where military training may occur on Rota, with a figure clearly showing that training areas would not occur in areas occupied by species with special regulatory status. The Navy has updated the Final EIS/OEIS with the most recent known occurrences of ESA-listed species within Rota and the Saipan Marpi Maneuver Area. This information has been obtained from USFWS representatives on Rota and Saipan during the informal phase of the Section 7 ESA consultation between the Navy and the USFWS.
J. de Cruz-5 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 3.10.2.3.9.8 3.10.2.3.9.8 Status within the MITT Study Area [of reed-warblers] cites a 1992 paper by Craig which indicates that reed-warblers exist in Saipan's proposed Marpi Maneuver Area. This is not very exact information on the bird's status in the area and is also based on surveys conducted over 20 years ago. Camp, et al. (2009), which is a paper cited in your references, analyze more recent survey data. Perhaps the information in this paragraph could be updated.	The Navy has updated the Final EIS/OEIS with the most recent known occurrences of ESA-listed species within the Saipan Marpi Maneuver Area. This information has been obtained from the USFWS representative on Saipan during the informal phase of the Section 7 ESA consultation between the Navy and the USFWS.

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J. de Cruz-6 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 3.10.2.3.11.3 Status within the MITT Study Area [of fruit bats] gives the status of this threatened species in all the other areas where activities are proposed except for the Marpi Maneuver Area. Fruit bats are sighted on Saipan with some frequency, often in the northern areas of the island including Marpi. Surely their status in this region should be given here, and if unknown, surveys should be conducted.	The Navy has updated the Final EIS/OEIS with the most recent known occurrences of ESA-listed species within the Saipan Marpi Maneuver Area. This information has been obtained from the USFWS representative on Saipan during the informal phase of the Section 7 ESA consultation between the Navy and the USFWS. Based on this information, Mariana fruit bats are not expected to co-occur with training activities within the Marpi Maneuver Area.
J. de Cruz-7 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 3.10.2.4.1 Partulid Snails and Section 3.10.2.4.2 Mariana Eight-Spot Butterfly (*Hypolimnas octocula mariannensi*) and Mariana Wandering Butterfly (*Vagrans egistina*) include no information on the status of either snails or butterflies in Saipan's proposed Marpi Maneuver Area. It seems that surveys have recently been conducted in the other proposed areas for these species, but not in the Marpi area where karst limestone, abundant host plants, and limestone forest co-occur. Why hasn't this been done?	Please see responses to comments de Cruz-4 and de Cruz-5. It should be noted that training is not authorized to occur within limestone forests within the Saipan Marpi Maneuver Area or the Tinian MLA, or in any habitat areas on Rota.
J. de Cruz-8 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 3.10.3.1.1.1 No Action Alternative box states that "Explosions on FDM may affect, but not likely adversely affect, the Mariana fruit bat," followed by "Explosions on FDM may affect, and are likely to adversely affect, the Micronesian megapode and Mariana fruit bat." Mariana fruit bats can't have it both ways; which is it?	Please note that the effects determinations, as noted in the EIS/OEIS, for the No Action Alternative were derived from the previous Section 7 ESA consultation between the Navy and the USFWS. In the 2010 Biological Opinion, the USFWS applied a "may affect, but not likely to adversely affect" determination for the Mariana fruit bat on FDM. The Navy's analysis during the Section 7 ESA consultation process resulted in a conclusion that all Mariana fruit bats on FDM may be adversely affected by the continued military use of FDM.
J. de Cruz-9 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 3.10.3.2.1.1 No Action Alternative [with respect to low level helicopter training at Fena Reservoir] about the middle of the fourth paragraph states that "Mariana swiftlets leave caves located on the facility primarily at dusk and return at night. Some swiftlets, however, may leave caves during nesting periods to incubate eggs and to feed hatch lings. Most of the swiftlet activity outside of caves does not occur during helicopter flight times." These three statements are inaccurate. Swiftlets leave their nesting caves during the day	The Final EIS/OEIS has been updated in accordance with this comment. The statement has been revised to state that "Mariana swiftlets leave caves located on the facility primarily at dawn and return at night." The statement regarding foraging and helicopter training activities has been deleted.

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	to forage and return to them at dusk. During nesting periods, birds are present in the caves during the day while incubating eggs but frequently fly in and out of the caves during the day when feeding nestlings. Most swiftlet activity outside of the caves occurs during daylight hours (whether nesting or not) so that they would be active during helicopter flight times. The errors of fact need to be corrected.	
J. de Cruz-10 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Same section, paragraph five states: "There is an elevated risk for night exercises for the Mariana fruit bats [sic] .. .. ". Does the writer mean that there is an elevated risk to bats *during* night exercises? The paragraph goes on to state in an awkward way that night dispersing bats may co-occur with night time training in open areas, but rates the likelihood of injury or mortality as "discountable". Would that be a 30% or 40% discount? Or is the risk of contact low? The conclusion box following the paragraph states that: "Aircraft and aerial target strikes during training activities under the No Action Alternative may affect, but not likely adversely affect the Mariana fruit bat or the Micronesian megapode." This conclusion is confusing after having just read that the risk to night foraging fruit bats is elevated. Also, the Micronesian megapode was not discussed in this section at all and if it is likely to be affected, then the reason should be stated. It also seems likely that the swiftlet might be impacted. These paragraphs deserve some additional attention.	The Final EIS/OEIS has been updated in accordance with this comment. The text has been revised to state: “Night exercises would increase exposures to Mariana fruit bats because fruit bats disperse from colonies or solitary roosts at night in search of foraging trees across the island.” The likelihood of injury and mortality, using terms such as “discountable,” is used in accordance with Section 7 ESA determinations for “may affect, not likely to adversely affect” determinations. Mariana swiftlets are only included in the analysis for Guam and Saipan, not for Rota or Tinian. This species is not expected to co-occur with military training activities on Rota or Tinian, and are not included in the Section 7 ESA consultation for activities on these islands. Additional text has been added to the Final EIS/OEIS in this section address the potential effects of aircraft strikes on moorhens and megapodes. The likelihood of aircraft strike is discountable, as these birds would likely respond to noise stimulus of approaching helicopters (fixed wing aircraft are discounted due to flight altitude).
J. de Cruz-11 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 3.10.3.2.1.2 Alternative 1 and Alternative 2 Training Activities [for fixed- and rotary-wing aircraft overflights] conclusion box indicates that Mariana fruit bats and Micronesian megapodes might be impacted without a discussion of how that might happen. This is confusing given the conflicting statement that most flights would be at "high altitudes where wildlife species, including ESA-listed species, would not co-occur with aircraft." Clarification is needed.	The EIS/OEIS refers the reader to the discussion of the No Action Alternative for a summary of potential impacts on Mariana fruit bats and Micronesian megapodes. Please note that effects determinations in the conclusion boxes are using regulatory language specified in Section 7 of the ESA and the Section 7 ESA consultation handbook (published by the USFWS and NMFS in 1998).

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J. de Cruz-12 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 3.10.3.2.2 Impacts from Military Expended Materials Including Explosive Munitions Fragments. The sentence in the first paragraph, "Munitions are only dropped on FDM; therefore, only activities that expend munitions that occur at FDM are included for analysis" should be moved to the end of the paragraph for clarity. Also, the second paragraph concludes with some oddly structured sentences: "On FDM, the range area where ordnance is restricted to inert munitions, vegetation is recovering in vertical structure and surface cover, relative to range areas where high explosive ordnance is permitted (U.S. Department of the Navy 2008c, 2012). Micronesian megapodes have been observed –within this area, although in apparent lower densities relative to areas north of the "special use area" where no live-fire training occurs (U.S. Department of the Navy 2008c)." Because the 'special use area' of FDM *is* the north of the island (Fig. 2.1-10) it might be less awkward to say: "In the range area on FDM where ordnance is restricted to inert munitions, vertical vegetation structure and surface cover is greater than in range areas where high explosive ordnance is permitted (U.S. Department of the Navy 2008c, 2012). Micronesian megapodes have been observed within the inert munitions area, although at a lower density than in the northern area of the island where no live-fire training occurs (U.S. Department of the Navy 2008c)."	The Final EIS/OEIS has been updated in accordance with this comment. The sentence "Munitions are only dropped on FDM; therefore, only activities that expend munitions that occur at FDM are included for analysis" has been moved to the end of the paragraph. The statement in the second paragraph has been revised to read: "In the range area on FDM where ordnance is restricted to inert munitions, vertical vegetation structure and surface cover is greater than in range areas where high explosive ordnance is permitted (U.S. Department of the Navy 2008c)."
J. de Cruz-13 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 3.10.3.2.2.1 No Action Alternative Training Activities [use of explosives on FDM] contains several awkward phrases at the end of the first paragraph. I suggest re-wording the last two sentences to read: Mariana fruit bats are not likely to be struck by munitions because bats are expected to occur only in the relatively closed-canopy forests in the "special use area" where ordnance is not used. Also FDM is believed to be little used by foraging bats transiting between islands (U.S. Fish and Wildlife Service 2010a). The possibility of injury to or mortality of individual transient fruit bats may be low, but is not	The Final EIS/OEIS has been updated in accordance with this comment. The statement has been revised to read as: "Mariana fruit bats are not likely to be struck by munitions because bats are expected to occur only in the relatively closed-canopy forests in the "special use area" where ordnance is not used. FDM is also believed to be rarely used by foraging bats transiting between lands (U.S. Fish and Wildlife Service 2010a). The possibility of injury to or mortality of individual transient fruit bats may be low, but is not negligible."

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	negligible.	
J. de Cruz-14 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 3.10.3.2.2.2 Alternative 1 Training Activities [number of bombs, projectiles, missiles, and rockets that may be dropped on FDM]. It is difficult to see how exponentially increasing the amount of ordnance dropped on FDM (an increase from 2,900 small caliber rounds to 42,000 under Alternative 1, for example) would have the same impact on terrestrial species as the No Action Alternative. It seems unlikely that megapodes and fruit bats would recognize that there is a "No Fire" safety zone set aside on the island (based on the Navy's surveys of seabirds that continue to nest in no fire, no live fire, and live fire zones despite repeated bombardment). The conclusion that the impacts on species under Alternatives 1 and 2 would be the same as under the current or No Action Alternative, given the increases in explosive ordnance use, is unjustified.	The Navy recognizes that increased ordnance use on FDM would increase exposures of stressors discussed in the EIS/OEIS; however, no new impact areas are proposed. All of the additional ordnance would be dropped or fired into existing impact areas. It should be noted that under all alternatives, the Navy is assuming that all Mariana fruit bats and Micronesian megapodes could suffer injury or mortality from the direct effects and indirect effects of strike warfare activities on FDM.
J. de Cruz-15 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 3.10.3.2.4.1 No Action Alternative, Alternative 1, and Alternative 2 Training Activities [that involve high explosive detonations on FDM]. Do the terms "No Drop Zone", "No Fire Line", and "No Fire Zone", all used in this section, refer to the 'special use area' of FDM? Can a consistent reference to this area be adopted?	The Final EIS/OEIS has been revised for clarity. “No Drop Zone” has been replaced by “Special Use Area.” The line separating the northern Special Use Area from the rest of the island is referred to as the “no fire line.”
J. de Cruz-16 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 3.10.3.3.1 Impacts from Invasive Species Introductions. This section describes various pathways, pertinent to the military, by which a species may spread from a point of origin. I suggest that the first three paragraphs be edited closely for verb/noun agreement, errors in the use of parentheses and other typos, grammar, and clarity. In paragraph four, the first sentence maintains that the Navy inspects 100% of outgoing vessels and aircraft, which conflicts with the second sentence that states what the Navy does when it misses inspections; I'm sure 100% inspection is the goal, but what is the actual percentage inspected? And last	The Navy recognizes the importance of biosecurity, ecological integrity, and resiliency of island ecosystems to the potential introduction of invasive species to the Mariana Islands associated with military training and testing. The Navy has a number of policies in place to prevent, interdict, and control invasive species introductions in both terrestrial and marine environments. Specific policies for marine invasive species can be found in OPNAVINST 5090.1D Chapter 35-3.19. (Ship and Ballast Water), 5090.1D Chapter 35-3.1 (Environmentally Sound Ships), and 5090.1D Chapter 12-3.10 (Invasive Species). This information has been added to Section 3.10 (Terrestrial Species and Habitats) as part of an overall invasive species discussion that includes terrestrial, marine, and

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	but not least, the final two paragraphs of the section do not describe invasive species impacts but rather the actions taken by the Navy to avoid new introductions and to mitigate for an introduction to Guam that had disastrous consequences. Glaringly, this section does not either define what an invasive species is, does not describe the impact of an invasive species on insular organisms, and only tangentially refers to the brown tree snake, the organism that is at the root of the large containment effort. I urge that this section be re-written to focus less on generalizations and more on why the brown tree snake's introduction had such a devastating impact on Guam, as well as the potential risk for its introduction to new areas by the various pathways described.	freshwater invasive species. In conclusion, the Navy maintains that introduction of invasive species associated with military training and testing activities is low. It should be noted that the Navy or other military services do not have jurisdiction of other potential pathways for introduction (e.g., commercial activities, U.S. mail, non-DoD personnel).
J. de Cruz-17 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 3.10.3.3.1.1 No Action Alternative, Alternative 1, and Alternative 2 Training Activities [with regard to invasive species impacts] concludes that the No Action Alternative, Alternative 1, and Alternative 2 would not increase risks to wildlife resources, species or habitats within the Study Area. While it is true that the kinds of pathways invasive species make use of to enter, establish, and spread from DoD installations may not change among alternatives, it is false to say that the risk of introduction does not increase with an increase in number of vehicles/personnel/food/landings, etc., that might transport an organism from an area where it is established to an area where it is not. Using humans as a disease vector for an example, a factor from those listed in Figure 3.10-10, it is easy to see that the more frequently a person infected with a virulent disease comes into contact with an uninfected population, the more likely the infection rate in that population is to rise (virulence x number of contacts = infection rate). An 'infection', or the introduction and spread of an invasive organism (say seeds of a weedy plant or tree snakes), has often followed a similar pattern. If the number of urban warfare training missions on Tinian and Rota increase from 17 (the No Action Alternative) to 36 (Alternative 1) and personnel and equipment will be	Please see response to comment de Cruz-16.

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	transported from Guam, the chances of stow-away introductions increases. If helicopter landings during direct action landings as described in 3.10.3.2.3.2 are increased from 3 to 18 under Alternative 1, the number of contacts between potentially 'infected' aircraft or personal and an uninfected environment also increases exponentially resulting in increased risk of 'infection' (or invasive species introduction). So the conclusion that Alternative 1 and Alternative 2 do not increase the risk of secondary stressors to vegetation communities and wildlife resources is faulty.	
J. de Cruz-18 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 3.10.3.3.2.1 No Action Alternative, Alternative 1, and Alternative 2 Training Activities [with respect to stressors associated with impacts to water and air quality] does not discuss the impacts on Micronesian megapodes on FDM. However, the conclusions in the box following the text state that secondary stressors may affect and are likely to adversely affect megapodes on FDM. The discussion of these issues has been omitted .... it would be good to include further discussion of those impacts here.	The Final EIS/OEIS text has been revised to state: "As noted in Section 3.1 (Sediments and Water Quality) and Section 3.2 (Air Quality), implementation of the No Action Alternative, Alternative 1, or Alternative 2 on Guam, Rota, Tinian, and Saipan would not adversely affect sediments, water, or air quality. Therefore, military activities would not indirectly impact terrestrial species or habitats on these islands. Within impact areas on FDM where explosive munitions are permitted, further erosion of soils may inhibit the long-term establishment of vegetation. The degradation of habitat associated with secondary stressors, therefore, may limit the natural succession of vegetation establishment if military use of FDM ceases in the future. Limiting the ability of damaged areas to recover would limit the recovery potential of the Micronesian megapode on FDM."
J. de Cruz-19 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 3.10.4.2.2 Summary of Endangered Species Act Effects Determinations. The word "to" has been omitted between 'likely' and 'adversely affect' in the third sentence of the first paragraph.	The Final EIS/OEIS has been updated in accordance with this comment.
J. de Cruz-20 (Beach Biology – former CNM-DFWI	Section 4.3.3.1 Army and Air Force Exchange Service on Saipan lists the new shopping complex at Andersen Air Force Base on Guam but nothing for Saipan. Is there a new building on	No construction is proposed as part of this action.

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Wildlife Division Supervisor) (Written)	Saipan as well?	
J. de Cruz-21 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 4.4.6.9 Cumulative Impacts on Sea Turtles states that: "The Preferred Alternative could also result in injury and mortality to individual sea turtles from underwater explosions, sonar, and vessel strikes." This doesn't jive with the paragraph's last sentence: "No sea turtle mortalities are estimated for Alternatives 1 and 2", the estimate coming from the model outlined in the previous volume of the EIS for sonar and non-impulse acoustical events. This seems to be misleading because explosions clearly produce an impulse, making the application of the model suspect. Or does this mean that the level of sea turtle mortality from underwater explosions proposed under the Preferred Alternative cannot be estimated?	Modeling indicated the potential for mortality from explosions under Alternatives 1 and 2. The conflicting sentence contained a grammatical error that has been fixed in the Final EIS/OEIS. The final sentence now reads, “No other sea turtle mortalities are estimated for Alternatives 1 and 2.”
J. de Cruz-22 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 4.4.7 Marine Birds states that: "Potential responses would include a startle response, which includes short-term behavioral (e.g., movement) and physiological components (e.g., increased heart rate)." I believe that this belittles the potential impacts of mortality from air strikes, live gun fire, and underwater explosions on seabird populations. Mortality of breeding adults, especially for long-lived seabirds, can have a huge impact not only upon individuals, but also on population structure and population genetics; that impact would be quite a bit more long-term than a startle response.	In the Final EIS/OEIS, the Navy has expanded on the distribution data of species chosen for focused analysis, which has included subspecies distribution in the western and central Pacific. Based on this information, restricting the definition of “population” to the colonies located within the Mariana archipelago is not appropriate. In addition, the Navy has included in the Final EIS/OEIS a statistical analysis of 17 years’ worth of monthly and quarterly bird counts of the three booby species that nest on FDM. The results of this analysis are included in Section 3.6.2.6 (Rookery Locations and Breeding Activities within the Mariana Islands Training and Testing Study Area). It should be noted that the three booby species are easily seen (and therefore counted), reducing uncertainty in the survey effort. The results of the statistical analysis do not show any significant changes in population trends for the three booby species included in the analysis. The conclusions for increased ordnance drops on FDM as not adversely impacting seabird populations is sound, as no new bombing areas would be used. In other words, the same restrictions listed and described in COMNAVMARINST 3500.4A would be carried forward under all alternatives.

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J. de Cruz-23 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	This section goes on to state that the "incremental contribution of Alternatives 1 and 2 to cumulative impacts on birds would be low" for several reasons including that "Alternatives 1 and 2 would not result in destruction or loss of nesting habitat". Given the large increase in training and testing activities planned for FDM under the Preferred Alternative and given that seabirds nest all over the island, including the active strike zones, this statement is unlikely to be true.	Please see response to comment de Cruz-22.
J. de Cruz-24 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	This section also states that: "For most stressors, impacts would be short term and localized, and recovery would occur quickly", and that "While a limited amount of mortality could occur, no population-level impacts would be expected." I don't think that either of these statements is true given the plentiful studies of the impacts of multiple stressors (such as mortality due to predation, trampling, and grazing) repeated over many years that have limited many long-lived seabird populations to the point where they have dwindled to endangerment if not extinction. Hawaiian seabird populations are a good example of such cumulative, long-term, but not negligible, impacts. How many impacts, assessed as making a relatively low contribution to the cumulative impact of man plus nature, does it take to push a population, incrementally, into serious decline? Section 4.4.11 Terrestrial Species and Habitats reiterates the same kind of misleading statements as found in the section above (e.g., “Potential responses would include a startle response” and “Recovery from the impacts of most stressor exposures would occur quickly"). As pointed out earlier, there would be no recovery from fatal stressor exposures.	Please see response to comment de Cruz-22.
J. de Cruz-25 (Beach Biology – former CNM-DFWI	Section 4.4.11.2 Summary of Endangered Species Act Effects Determinations mentions only the cumulative impacts of the proposed actions affecting Micronesian megapodes on FDM. The summary fails to mention the other species that are	The comment refers to Section 4.4.11.2, but the content in the Final EIS/OEIS is now contained in Section 4.4.10.3 (Cumulative Impacts on Terrestrial Species and Habitats). In addition, the text has been clarified to indicate that other actions (particularly on Tinian and Guam) will also

Commenter	Comment	Navy Response
Wildlife Division Supervisor) (Written)	earlier listed in this EIS as likely to be adversely affected by various proposed activities. The omissions include the common moorhen on Tinian, the nightingale reed-warbler on Saipan, the Micronesian megapode on Tinian and Saipan, and the Mariana fruit bat on islands throughout the MITT Study Area. Does this section need to be expanded?	likely impact terrestrial species and habitats. The text referring to Micronesian megapodes and Mariana fruit bats is part of a discussion obviating the potential for cumulative impacts on FDM (because of the lease agreement affording the Navy exclusive access to the island).
J. de Cruz-26 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	Section 5.3.1.1.1.1 United States Navy Afloat Environmental Compliance Training Series sounds like an excellent training tool, especially for Lookouts. It meets military effectiveness and readiness policies, provides a level of expertise for constantly changing personnel, and presumably helps to reduce the impact of military activities on marine organisms. It is a great idea. Although the EIS avows that the "Marine Species Awareness Training is an effective tool for improving the potential for Lookouts to detect marine species while on duty, " I wonder how the effectiveness was evaluated. Is there a cipher that can be cited as to the difference in number of sightings by trained vs. untrained Lookouts? or perhaps the difference in sightings between Lookouts not undergoing the same training as those undergoing the Series?	Per the mitigation measures described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, all Lookouts are required to undergo training. Therefore, there are no possible comparisons between untrained vs. trained Lookouts.
J. de Cruz-27 (Beach Biology – former CNM-DFWI Wildlife Division Supervisor) (Written)	And lastly, a general question about mitigation measures in Section 5. I note that the mitigation measures for Section 5.3.2.1.2.4 Mine Countermeasure and Neutralization Activities Using Positive Control Firing Devices and for Section 5.3.2.1.2.5 Mine Neutralization Diver-Placed Mines Using Time-Delay Firing Device include ceasing detonations if seabirds are sighted within the mitigation zone. This is laudable. My question is why do the rest of the activities (gunnery exercises, missile explosions, etc.) halt detonations only if marine mammals and sea turtles (but not seabirds) are spotted? Can seabirds be reasonably added to the 'cease detonations' list for activities such as anti-swimmer grenades and sonoboy detonations, for example? Again, thank you for the opportunity to comment on the Draft MITT EIS/OEIS.	Mitigation measures for mine countermeasure and mine neutralization activities were developed differently from other training activities as they typically occur close to shore, where shorebirds are known to concentrate and forage. Because of the tendency of seabirds to be present in groups in these nearshore areas, they were accounted for in the development of mitigation measures. Chapter 5 of the EIS has been updated to include seabirds in the list of animals that, if sighted in the mitigation zone, would halt an exercise. For example, under Section 5.3.2.1.2.5 (Mine Neutralization Diver-Placed Mines Using Time-Delay Firing Device, the text has been amended to state: “The fuse initiation will cease if a marine mammal, sea turtle, flock of seabirds, or individual foraging seabird is sighted within the water portion of the mitigation zone (i.e., not on shore).

Commenter	Comment	Navy Response
K. De Leon (Electronic)	I fully support the military and their endeavors to help protect the Mariana Islands. However, there is a thought as to how this would affect us. With all your testing, will you at least notify the people as to when the testing will happen, and what kind of testing you will do?	Thank you for participating in the NEPA process. Prior to training and testing activities, a Local Notice to Mariners is issued at least 72 hours in advance; and other public outreach, including notices in local news outlets, is provided, notifying the public of potentially hazardous training and testing activities.
M. De Oro (Electronic)	I do not support the current, or on going or future actions in regard to military testing and training in the Mariana Islands. The comment period was inadequate and access to this document was limited. The language used was also above the level of understanding for most residents in the Marianas.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. The comment period for the EIS/OEIS was 90 days. This time period is in compliance with NEPA requirements for the public to comment. In addition, a project website (http://mitt-eis.com/) was available for the public. Copies of the document were available via the website for public comment. In addition, the website allows the public to submit their comments online.
W. Dela Cruz (University of Guam) (Written)	I do not support the proposed Marian Island training and testing activities. I recommend the 'No Action Alternative'. However my recommendation of this alternative does not mean I support the ongoing training activities already occuring in the Marian Islands. The Navys traing and testing pose severe threats to our islands."	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
C. Delacruz (Electronic)	Our island is sacred and our ocean is magnificent, don't add to what has been already threaten and taken away from us by the military. "I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the

Commenter	Comment	Navy Response
	does not mean I support the ongoing training activities already occurring in the Marianas Islands. The Navy's training and testing activities pose severe threats to our islands."	Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
S. Demapan (Electronic)	It is understandable that our geographic isolation combined with our proximity to a major military outpost on Guam would make Pagan a very appealing site for military training and testing. The trouble is less about relocation and more about preservation of our already limited resources and land. Monetary compensation cannot replace the legacy of a habitable island that holds roots to indigenous past.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. Military activities proposed on Pagan are addressed in the CJMT EIS/OEIS. Information regarding the CJMT EIS/OEIS can be found at: http://www.cnmijointmilitarytrainingeis.com.
N. Desai (Electronic)	I oppose the American military's expansion on Guam. The islands have suffered enough under American rule and deserve the rights of citizens, not an even larger military presence.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
A. Diaz (Electronic)	As a former member of the US Navy, I am aware of the trash that is dumped overboard of the ships while underway, among other things. I have personally seen it. Though there are regulations and scheduled times of trash collecting, I also know that trash is illegally thrown overboard, to include hazmat when facilities on the ship are closed, or because XO Happy Hour has ended and the trash needs to disappear, or a Sailor is too lazy to stand in line. When darkness falls, anything goes and who knows what is thrown overboard when no one can see. If ships are to be used in conjunction with these exercises or have more presence in the area, I do not want that trash to be anywhere near my island. The MARPOL annex outlines what may or may not be thrown overboard from a ship http://ocean.floridamarine.org/efh_coral/pdfs/Habitat_Plan/HabitatPlanAppL.pdf Most ships honor this, what makes the	Thank you for participating in the NEPA process. The U.S. Navy complies fully with the requirements of Annex V of the MARPOL Convention as directed by the Act to Prevent Pollution from Ships (33 U.S.C. 1902) and modified by the National Defense Authorization Act for Fiscal Year 1994. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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	Navy so special or unique? Another issue I have is the US amassing more area to conduct training. An area the size of Washington state? First the US and the military take control of over 30% of my island of Guams total land area, then the military wants to seize and use more islands in the Mariana archipelago, and now the US military wants to extend the zone of which they currently use for military exercises? Why cant all the training be conducted stateside off the coasts of the US before pilots and service members PCS? Or sent to Hawaii for that matter? Is it because US soil is more valuable than my island and the rest of Micronesia. Every time the US military tests and explodes something in or from Micronesia, it is a catastrophe more or less. I do not want my people to experience anything close to what the people of the Marshall Islands like Bikini Atoll did. http://www.nuclearclaimstribunal.com/biksum.htm The Mariana Islands and the reset of the islands in Micronesia are sacred. Stop using and exploiting our lands to promote and further US agendas and policies.	
J. Diaz (Electronic)	My dear friends, please do not do anymore harm to our homelands on Guam. While I totally understand the objectives of the Nixon Doctrine, we need to look at better ways to work in collaboration with our neighbors to the East, North, South, and West. Please consider the situation and look at other viable options. I want to thank you for looking within your own footprint, but I'm not sure if this is the best option. What I would like for the Department to consider as well as the Pentagon, is to look at what our boys and gals really need and that's family and friends in the towns that they grew up in, to be the local hero's and heroines. This is the reason why I support the total withdrawal of our troops and to work in collaboration with other nations. I don't know about you, but I sure am tired of war and death and destruction and all of that nonsense. While Freedom is never free and while I absolutely support our U.S. troops in the line of duty and in harm's way, what I don't understand is "tearing down paradise to build a	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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	parking lot." We have done a wonderful job, but I hope that we can look at all the altervatives of how to best us resources in a time of huge crunches. Please remember that U.S. Congress has much on its plate this coming January 2014 when they go back for rounds of talk to avert another government closure. It makes sense to bring back the troops and have them employed on the local side. We need to think about the better ways in which we can foster peace within the region - the main reason why Guam was created the Tip of the Spear, but I believe that TOGETHER with the local community and backed by the expressed opinions of the troops themselves, why not consider some of the alternatives of our young people at We Are Guahan. And lastly, we need to look at first creating a better and lasting legacy of Freedom in this region and to look see Guam's Decolonization effort a noble endeavor indelible to U.S Democracy and Values. Please give the Chamorro People of Guam as chance to determine their future and with the help of the members of the United Nations, especially those who sit on Global security, we can find sustainable ways to promote those values that most Americans enjoy. Why can't we give the Chamorro people their chance to vote for their determination. Please. It is already late and I just want the U.S. Government to finally recognize us as their Warriors who are in harmony with their roots, their human dignity and their full human right. While I recognize that there are many who are against such as plan of decolonization, this is the first step that needs to be done before you decide to use any more "space" on a very contaminated island. We need to focus clearly on achieving World Renowned healthcare on Guam. If we begin there, then we can achieve perhaps what the U.S. Marines were set out to do in the first place! I love all members of the U.S. Military and especially to all our Veterans. What we advocate for is not anti military, but just saying that the whole world deserves to see Pagan too. Don't you think? And so now you understand Paradise - the Garden of Eden - that's the Marianas my friends. While there are breathtaking places all over the world	

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	that are far superior than mine, I like to think that its "ours" and for "all generations." Please don't take anymore than we have already chewed. I love the United States of America and I sure love the country and the lands that I was born and hope that you can see that there is love deep down from all these comments and I hope that we can look at bringing in more troops, especially for rest and relaxation after training. I totally "get it" and why all of this is necessary, but I just hope that we can move forward, together as one people that want one thing - PEACE! Happy Feast of Our Lady of Guadalupe - the Feast of the Virgin of the America's who appeared to many "indigenous peoples" and who we hail as the Mother of the Savior of the World! May this Holiday season never be forgotten and that the love of a mother to a son who was the world to her, is akin to the love that we have for the islands named after Mary - Marianas! I hope that we can look at these archipelego islands as absolutely Sacred! The world needs the Marianas and we need the World! Here's to a United Marianas effort honoring the human right to be part of that table with all the nations of good will! May God who is the Almighty and the Awesome One be at the center of this sacredness as this Creator created us and our islands for a reason! Please give us a chance to join forces with the rest of the world! Long Live the United States of America, it's Armed Forces - connected to families that we are all a part of, and May God Bless Guam, Rota, Tinian, Saipan and all the Mariana Islands. Please end all wars and let us begin with the ones that start within us all. Remember, we are ONE WORLD, ONE NATION, ONE HUMAN RACE! Saina Ma'ase, jon	
J. Digno (Electronic)	I know it is in the military's best interest that the people of the Mariana Islands and military forces get along during this process of amalgamation. Hopefully through the open house discussions, everyone will get along.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
J. Drake	Western Pacific marine life and oceanic territories are gravely	Thank you for participating in the NEPA process. The Navy shares your

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(Electronic)	threatened by the US Navy's military operations and exercises in that region. The USN's own continued surveillance and research of the impact of these operations exposes a troubling reality which indicates that there are few measures that can protect the region from future harm if they continue. Therefore I urge they be abandoned, or greatly modified if not completly ended.	concern for marine life. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
J. Duenas (Electronic)	another pre-empt for the navy.do it in malibu beach,calfornia. not in the mariana islands.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
I. Eathing (Ioadahea Lida'ha Kattnrad) (Written)	Any Sovereign Patron would receive monetary compensation for the use of their territorial space for another governments military training. There is no reciprocity here, just a blatant use of eminent domain. 12 terms of mitigation, 12 surveys spanning over 35,000 kilometers of track size covered and requiring over 3,000 hrs of visual and sound recording, yet there is no demonstration for understanding the migration patterns of marine life. if you're looking to dissolve any issues between fishing boats and military brigade moves. Then place the training spaces in areas that are to receive little or no migratory traffic. The fishermen follow the fish. If you're training where there is reportedly no migratory marine traffic, then you won't have a problem with the fishermen.	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities.
H. Elias (Electronic)	As islanders, we know that land and sea is a crucial factor for survival. The least we can do is to create an awareness regarding this situation so that most island resident can work together in protecting our land and sea from destruction. Our islands are sacred, be sustained for the generation of tomorrow. Lets maintained the beauty of our islands as it is right now, cause most of it was being used for the benefit of	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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	civilizing our people during the first colonization till now.	
S. Elias (University of Guam Social Work) (Electronic)	As a concerned islander and student, I strongly uphold the importance of our islands because our islands are sacred and deserve to be taken cared of not be destroyed. For instance, Guam is already known as the hottest in the region and I can't imagine when the military finally really moved to Guam. Besides destroying the land and the sacred of our islands, my other biggest concern is the Marine Biodiversity in Apra Harbor. Our islands value the ocean so much and we cannot just let it be destroyed and taken away from us. "This operation (CNMI Military Relocation, or military buildup) could be one of the largest peacetime military buildups in U.S. history. Underwater tests close to the surface can disperse large amounts of radioactive particles in water and steam, contaminating nearby ships or structures." (Marler and Moore 2011). As I did my research, I come to a point where I know that our ocean especially the Coral Reef is going to be affected as much as our lands. I also know that most concerned citizens will be voicing out the importance of our lands so I chose Apra Harbor as a case to support this relocation of the Military bases to our Marianas Islands. "Apra Harbor is the largest deep-water port in the Western Pacific and the busiest in Micronesia. Within this port are over 70 acres of coral reefs that will be destroyed in the process. The port is of vital importance not only for the U.S. Navy but also as a tourist attraction for its wealth of marine life—its unique habitats host many species not found elsewhere in the archipelago, as well as some of the highest coral covered." (Paulay 2003). Finally, I am also a strong-minded islander and I strongly believe that the relocation of the military bases will not only affect our lands and ocean but most importantly our people. Because the land, the ocean, and the people together is what makes it sacred, the more we destroy one of these aspects of our cultural being, the less sacred we are. Knowing the consequences and what our islands would be like if the relocation is passed really saddened my heart. I honestly	Thank you for participating in the NEPA process. The proposed build up is not part of this Proposed Action; the build up on Guam was considered as part of the EIS/OEIS for the Guam and CNMI Military Relocation. The Proposed Action does not involve major permanent relocations of U.S. Army, USN, USMC, USAF, or U.S. Coast Guard personnel or assets. This EIS/OEIS focuses on the achievement of service readiness activities while the analyses of the Guam and CNMI Marine Relocation EIS/OEIS focus on the relocation of forces to the Marianas with its associated infrastructure and military construction requirements. These actions are addressed in the Guam and CNMI Military Relocation (2012) Roadman Adjustments SEIS. Information regarding the SEIS can be found at: http://www.guambuildupeis.us.

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	cannot handle the pressure and the kind of communities we will become. Most especially, our children or the future generation, they will grow up without knowing that our islands were once sacred or our home islands and the culture where we value family and society so much. It would be really hard because the influence and the environment our children will grow up and see will be different than what we see now.	
D. Erway (Electronic)	We need pristine islands and their surroundings, much more than we need military practice fields. Just say no to this whole idea! We need a much smaller military over all, to be MORE secure, by scaring the rest of the world less. Please stop to travesty!	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
D. Ezekiel (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to a population with insufficient oversight and say in the matter.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
F. Famalao'an (Fuetsan Famalao'an) (Electronic)	As women of Guam, we, the members of Fuetsan Famalao'an (Strength of Women), submit the following comments. First, we have submitted comments for previous Environmental Impact Statements (EIS), and for each, we have been concerned about the short timeframe for comment. For an extensive action such as the Mariana Islands Testing and Training (MITT), we object to a restricted comment period such as this, and request that an extension for comments be allowed until after the holidays. Based on previous EIS comments we have submitted, we find that many of the	Thank you for participating in the NEPA process. The comment period for the EIS/OEIS was 90 days. This time period is in compliance with NEPA requirements for the public to comment. In addition, a project website (http://mitt-eis.com/) was available for the public. Copies of the document were available via the website for public comment. In addition, the website allows the public to submit their comments online. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and

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	issues we were concerned about then are still those we are concerned about today with the MITT EIS. One such concern is that this EIS process has not allowed the local community or local officials any interim access to findings of the off-island consultants hired by the Department of Defense (DoD) to assess the impacts to us. Similarly, as with the 2009 Draft EIS for the Mariana Islands Range Complex (MIRC), DoD disregarded our concern about continued degradation of our lands and waters, and the continued risks to our health and safety. Further disregard is evidenced today in the preferred alternative option to expand the existing testing and training area to accommodate the MITT. Based on the alternative options described in the MITT, an increase of firing ranges and warfare training on our lands and waters may be imminent. This includes Pagan, and Guam, and other lands, oceans and skies within the Marianas. We object to any DoD claims that there is minimal or no negative impact because the testing and training already taking place. In fact, we insist that further analysis be conducted to guarantee that the existing training and testing is not in violation of our rights as indigenous women to protect and defend our families and our environment. Our everyday efforts to sustain our families and our environment are at risk if we allow for the operation of live firing ranges and warfare training on Guam or any of the Marianas Islands. Thus, as our policy, we advocate for an environment free of warfare and munitions testing and training, and we object to DoD's preferred alternative (including Pagan) to expand the existing MIRC and double the size of the testing and training range. Based on these few comments and our previous experience with the EIS, we have little to no confidence at all in this process. In spite of that, we register our objection to the continuation and expansion of such actions in our region, and insist that the involvement of the women of our islands continually be sought to ensure a balanced position is included in this process.	testing activities historically occur. Regarding concerns about interim access to findings, the Navy fully complies with the process outlined in the National Environmental Policy Act. The public has the opportunity to review and comment on the EIS/OEIS so that those comments may be considered during the development of the Final EIS/OEIS. Officials are offered opportunities for meetings with the Navy to discuss the proposed activities and the results of the findings. The findings contained within the EIS/OEIS were the findings of the entire Navy team of experts, which includes scientists that have studied the marine environment in the Marianas as well as other locations around the world. The list of preparers is provided in Chapter 7 (List of Preparers) of the EIS/OEIS. The military is committed to protecting the environment during the conduct of its military training and testing activities, including FDM. Effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities.
M. Flores	I am writing to OPPOSE the expansion of the Marianas Islands	Thank you for participating in the NEPA process. The Navy expanded the

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(Electronic)	Training and Testing site. The expansion would not only cause further degredation in our delicate ecosystems, negatively impacting our nearby waters and skies, harming whales, dolphins, and corals, it would also reflect a continued expansion of American imperialism and colonialism, and more so environmental racism against the people of the Marianas. Beyond being a US territory, the people of the Marianas are part of an oceanic community, having knowledge of ocean highways and a deep understanding of sustainable resource management. Much of this has been drastically altered throughout our colonial history, bringing a loss of sacred knowledge and language. Great work has been done to reconstruct these lost narratives for the survivorship of Chamoru people. But even more so, the decision to expand the site emphasizes the continued objectification of native communities carried on by the United States. We are not separate from our environment - we are the earth, we are the oceans. The harm we do to our planet manifests in our bodies and in our cultures.	geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals.
L. Galindo (Electronic)	I am horrified that our nation would even consider funding a proposal to destroy pristine islands in the Pacific. i witnessed the horror of the bombing on Kahoolawe in Hawaii. Not only is it immoral, the MITT would violate the National Environmental Policy Act and other environmental laws passed by Congress. On behalf of the people, the marine mammals and the endangered plants & animals of these sacred lands, I beg you to halt this proposal now!	Thank you for participating in the NEPA process. The Navy is compliant with NEPA for this action. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
F. Garcia (Federal Aviation Administration) (Electronic)	1. The Draft EIS states training activities will be limited to Rota International Airport but it does not describe what type of activities will happen on the airport or if there will be any construction needed at the airport to support training activities. The EIS should determine what are the potential effects on airport operations and environ. 2. Any proposal to use Rota International Airport (or any airport within CNMI)	Thank you for participating in the NEPA process. No construction is proposed at Rota Airport or anywhere on the island as part of this action. Aircraft overflights on Rota, with the exception of landings and takeoffs as part of training exercises (landings, takeoffs, and insertion events at the Rota International Airport), are prohibited below 1,000 feet above ground level and within 1,000 feet of coastlines. The Navy will coordinate with the Commonwealth Ports Authority when

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	must be coordinated with the airport sponsor - Commonwealth Ports Authority (CPA). Has this been coordinated with CPA? 3. CPA will require execution of a Ground Operations Plan and SOP.	required.
J. Garrido (Task Force on Free Association) (Electronic)	The MITT EIS/OEIS for the Mariana Islands, including Guam, is too hugh a proposal and too much of a sacrifice to impose on the Chamorro people who have already given away much of their island and lost more of their history and culture than most nation of people could bare. MITT proposal is an action that would adversely affect the the life and territory of the Chamorro people. It is also a violation of their human right that would further erode and undermind their right to exercise their right of self-determination, as setforth in the United Nation decolonization process for non-self-governing peoples and territories. Under Free Association, there is recognition of mutual sovereignty and mutual respect. The United States has much to learn about true democracy, a terrible stigma on a Nation that created it. jose ulloa garrido, Chairman Task Force on Free Association	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
A. Gill (Electronic)	The island of Guam and all the Marianas Islands as well as surrounding continents are inhabited. The consequences of the MITT operation to these lands and their people need to be clearly posted and noted to the people before any such operation. We can appreciate the need to be prepared for any such tactical defenses that this operation may be training for, but at what cost? Clearly our government has no concerns of the little people on any side of the line, be it training or actual conflict. Are the islands and their people to be a collateral damage to this operation?	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
C. Graham (Electronic)	Clark Graham OK, we are having a meeting to discuss the Environmental Impact Statement... We are going to blow things up, probably on land and underwater, and we will use sonar that we know is harmful to marine mammals (our	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected

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	brothers). What are the results of these actions? We will alter the natural land and marine environment negatively, we will kill and maim animals including birds, fish, mammals... Conclusion: It is HORRIBLE for,the environment. Testing at an uninhibited island in the state of HI. Result: destructive to land and sea. Testing at Bikini, RMI. Result: Island blown off the face of the Earth, radioactivity caused heartache, illness, untold suffering for people, animals, earth, sky and water! Testing in USA: Similar to Bikini There should be NO testing in CNMI! The islands, marine and animal life are sacred!	Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements the mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
A. Grajek (Electronic)	The people of the Marianas have lost enough land and ocean access to the military complex. They have both given and in many cases had it taken. For people who have limited natural resources every drop of ocean and every blade of grass is sacred. While the military sees our resources as training ground we see it as a life source. Please respect that.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
S. Greenway (Electronic)	Pagan Island is home to many, many species of animals and plants, surrounded by beautiful corals, not to mention is inhabited by many people who will all be put at risk if the U.S. military uses this island for bombing practice. The U.S. military has a long history of treating people of color around the world like second class citizens on this planet and I for one believe the time to stop that is now. In addition, the U.S. military has plenty of training sites already in existence and should continue using the places they have already destroyed, not expanding. Also, the economic deficit of our country is still incredibly high and the military should be trying harder to be reduce their budget, not frivolously spending money on things they don't actually need. America is already viewed very unfavorably around the world for its war with Iraq to find "Weapons of mass destruction", which didn't actually exist and disregard for yet more human life isn't helping that image	Thank you for participating in the NEPA process. Training and testing activities on Pagan are not part of the Proposed Action for this EIS/OEIS. Military activities proposed on Pagan are addressed in the CJMT EIS/OEIS. Information regarding the CJMT EIS/OEIS can be found at: http://www.cnmijointmilitarytrainingeis.com.

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	at all.	
H. Groot (Electronic)	We should stop American imperialism. We have no business making bases, interfering all over the world. We are making things worse doing that! Let us take care of internal problems in the US, and most importantly: work on climate change as we are the big polluters!	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
C. Guerrero (Electronic)	I don't believe bombing Farallon de Medinilla, blowing up mines underwater and performing sonar training is such a good idea. There will be devastation for many, many years. Also, the sonar training will result in permanent hearing loss for dolphins and whales.	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
J. Guerrero (Electronic)	Due to the recent nuclear catastrophe in Japan our region is experiencing a disregard from the united nations about the long term effect that Pacific Islanders will have to burden. The health problems that the next generation will develop is being over looked once again! Our people have suffered the nuclear bomb testing in the 50s and till present day. Considered to have the highest rate of cancer per capita by health officials is evident of the consequence that the past is still present today. Only recently has pacific pigeons been reestablishing a flock on our island. With the continue destruction of their habitat the people of the Mariana's will not be able to enjoy its	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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	natural birds, it is unfair that the u.s.a get to establish a reservation in america where it's citizens can enjoy recreation our hunting and the Pacific Islander is forced by the powers of a nation to adhere as the experiment to military live fire excercise.	
K. Guerrero (Electronic)	Thank you for presenting at UOG, However, I'm concerned about the land on my island of Guam, why use more land there when you have Hawaii and other places to train.	Thank you for participating in the NEPA process. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
G. Guile (Electronic)	Stop thinking about destroying nature and driving people nuts on island by making this the biggest military exercising spot in the States.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
A. Hadley (University of Guam, Northern Guam Soil and Water Conservation District) (Written)	Thank you for being honest about effects on animals. But this is still not a military playground.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
M. Hardman (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of

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		its military training and testing activities.
L. Harris (Electronic)	We have no business bombing anything in the ocean or islands any more. Time to give up the concept of thinking we can save anything by destroying! These islands are part of the earth and should not be bombed!!!	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
K. Hartman (Electronic)	The history of American imperialism in the Northern Mariana Island is a shameful one. I find it unconscionable that our government is continuing with the exploitation, cultural destruction and environmental destruction that has long characterized our relationship with the people of the Marianas. I oppose the expansion of American military use of the Northern Marianas Islands, which has already made several islands uninhabitable.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
G. Herron-Coward (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands."	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
A. Iriarte (Electronic)	First of all, cannot even believe Guam isn't even an option in the state menu. AT LEAST put a divider separating the states and territories. I'm sure everyone here is tired of hearing us reiterate over again that "all lands are sacred". Does not seem to me that the American government understands this despite centuries of indigenous protests on federal government intrusion. If you take more land, then let's trade and give us Yellowstone, the Sierras, and all of Rhode Island while we're at it then we can be even. Probably never going to happen since everyone in the "mainland" would oppose it. If we are truly	Thank you for participating in the NEPA process. The MITT EIS/OEIS website was revised to include Guam as an option. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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	U.S citizens, what makes us different? Publicly, the feds would deny this, but truly, they know we are. What a sad reality and a sad state we have come to from the day this nation was founded by a truly amazing group of gentlemen.	
N. Jain (Electronic)	I am extremely concerned that Pagan may be destroyed as an effect of military exercises conducted there. Pagan is home to endangered species and remnants of indigenous Chamorro villages from as long as 3,000 years ago. Please do not destroy these living beings, and the artifacts of culture and human history.	Thank you for participating in the NEPA process. Training and testing activities on Pagan are not part of the Proposed Action for this EIS/OEIS. Military activities proposed on Pagan are addressed in the CJMT EIS/OEIS. Information regarding the CJMT EIS/OEIS can be found at: http://www.cnmijointmilitarytrainingeis.com.
H. Johnson (Electronic)	Department of Defense: I urge you to cease the military build-up in the Marianas Islands. This build-up threatens biodiversity in these areas and will likely extinct several rare species of birds in the area. These species cannot be recovered. This in turn threatens the livelihood of the people who call these islands home. As a US citizen, I am concerned by the precedent that this action sets for the rest of the world, and I demand that you cease immediately.	Thank you for participating in the NEPA process. This comment is outside the scope of this EIS/OEIS. Please see Chapter 1 (Purpose and Need) and Chapter 2 (Description of Proposed Action and Alternatives) of the EIS/OEIS for a clear definition of the scope of this project. The military buildup is addressed in the Guam and CNMI Military Relocation (2012) Roadman Adjustments SEIS. Information regarding the SEIS can be found at: http://www.guambuildupeis.us.
A. Kaipat (Electronic)	I live in the Marianas. My family live here. My friends live here. I want the Guam and CNMI government, and especially DOD and the US Military, to know that I do not want our air, garden and fishing grounds poisoned. I repeat, I DO NOT WANT SONAR & BOMBING EXERCISES in the Marianas. Our islands have been bombed and polluted enough so many times over. Our people are dying from your activities! The US Military plans need to STOP! Utilize our islands for R&R or leave them BE! www.chamorro.com	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
C. Kaipat (Electronic)	CNMI is my home. Its natural resources are so delicate to its people and neighboring islands. We must keep our islands safe and free from dangerous chemicals and activities.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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C. Kaipat (PaganWatch) (Written)	1) We would like to see a joint presentation of all the EIS (Divert, MITT, MIRC, JGPO, and CJMT) presentations so we all can see the "Big Picture." 2) We would like all an opportunity to have a Q&A session 3) We would like responses to our Questions published to educate others 4) How does this training in Pagan Waters relate to the Marine Monument covering the waters near Pagan?	Thank you for participating in the NEPA process. Because each of those projects have vastly different scopes, timetables, and action proponents, a joint presentation is not practicable. The meetings for this EIS/OEIS were conducted to allow all interested persons to speak, ask questions, or offer comments to this EIS/OEIS. The Navy cannot accept comments about those other projects for incorporation into this EIS/OEIS because they are not part of the MITT EIS/OEIS Proposed Action. Information on these other actions can be found on their websites: The CNMI Joint Military Training EIS at http://www.cnmijointmilitarytrainingeis.com; the EIS for Divert Activities and Exercises, Guam and CNMI at http://pacafdivertmarianaseis.com/; and the Guam and CNMI Military Relocation (2012 Roadmap Adjustments) SEIS at http://www.guambuildupeis.us/. The training and testing activities within the MITT are not expected to have any significant effects on those resources designated for special protection under the Mariana's Trench Marine National Monument designation. Furthermore, the Presidential Proclamation included that the prohibitions included in the Proclamation shall not apply to the activities and exercises of the Armed Forces. The mitigation measures followed during activities and exercises of the Armed Forces within the Monument ensure that the activities are consistent so far as is reasonable and practicable with the Proclamation.
A. Kerr (Electronic)	I do not support expansion of the MIRC complex. I am concerned about the use of the island of Farallon de Medinilla for bombing when it is nesting site for ocean birds. Specifically, the EIS reports that FDM is an "important" nesting site for two birds, but then also says that one of these birds, the great Frigate bird, "may occasionally" nest on FDM. So what does "may occasionally" mean? five or ten birds a mating season? Or one or two every 5 years? Also, if it is an "important" nesting site for the Frigate bird, how can the EIS then say that it only "may occasionally" nest on FDM? I find this wording ambiguous, vague and unsatisfactory for fully understanding possible effects on the great frigate bird. On a separate matter, I am concerned that there could be an	Thank you for participating in the NEPA process. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. The discussion of great frigatebird occurrence and use of FDM has been updated in the Final EIS/OEIS. In summary, there have been few observations of great frigatebirds on FDM. Lusk et al. (2000) confirmed breeding on FDM and estimated 25 adults and juveniles. Others have reported the great frigatebird as only roosting on FDM (Reichel 1991, Reichel 1988). The most recent report of a great frigatebird, however, was a single individual observed in December 2011. FDM does not

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	increase in flight activity to and from the Air Force base on Guam. Military planes regularly fly over residential civilian areas. The planes often fly at a height where the noise they generate is often disrupting to certain daily activities. It may seems like a small thing, but this noise level can temporarily disrupt the quality of conversations (in person or on the phone) as well as cause a little stress to inhabitants, from enduring the loud to deafening noise of the plane flying overhead. If military flights are to increase over civilian residential areas on any or all islands, by how much? Can you point to any studies about the well being of inhabitants subject to regular noise disruption from aircraft? Again, I oppose expansion of MIRC/MITT and remain critical of continued use of FDM for military training purposes.	appear to be a spatially or temporally stable breeding location for great frigatebirds. Although breeding on FDM is sporadic and rare, FDM is an important location for the great frigatebird because the only other breeding location in the Mariana Islands is on Maug." The impact of aviation activities occurring into and out of Andersen Air Force Base are analyzed as part of the Air Installation Compatible Use Zone (AICUZ) Program. Base and range complex aviation activities occur in FAA authorized airspace and in international airspace.
J. Kerr (Guam Community College ecoWARRIORS) (Electronic)	The Guam Community College ecoWARRIORs, a student organization that raises awareness of environmental issues, vehemently opposes and protests the proposed expansion of the military training area. This is not only a prime example of a colonial power attempting to exert its authority, but it is also a blatant disregard for the natural resources and people of the Mariana Islands. Doubling the size of the current MIRC will increase injuries to cetaceans that live in or frequent these waters. Bombing exercises will destroy the landscape of Farallon de Medenilla. Furthermore, residents of more populated islands will be subjected to increased levels of aerial noise. If the military insists on bombing our islands and destroying our resources, soon they won't have much real estate to protect. Doubling the size of the training area is yet another example of military overkill, and no sensible reasons exist to justify this proposal. We strongly support retraction of the plans for the MITT.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur.
S. Kessler (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the

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	mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to the islands, as well as the ocean and its animals, and it must stop.	"no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
S. Kim (Electronic)	"I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands."	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
A. Kozij (Asia Pacific Academy of Science, Education, and Environmental Management) (Written)	I WOULD LIKE TO ENQUIRE ABOUT THE POSSIBLE USE OF DEPLETED URANIUM MUNITIONS WITH RESPECT TO THE NAVAL RANGE AT FARALLON DE MEDINILLA EITHER NOW OR IN THE PAST	Thank you for participating in the NEPA process. There are no depleted uranium munitions used in the military training and testing activities that are conducted in the MITT Study Area including FDM.
K. Kuper (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose a severe threats to our islands.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is

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		practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
T. Lapitan (Academy of Our Lady of Guam) (Written)	I do not support the sonar b/c although it helps detect enemy ships, it affects the animals within the Marianas in a harmful way. I consider it unethical. The sound waves would cause the death of sea life such as whales.	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals. The Navy has applied for a letter of authorization from NMFS concerning potential impacts of the proposed training and testing activities on all marine mammals protected under the MMPA and known to occur in the MITT Study Area.
B. Laxon (Electronic)	The time and money being considered to be spent on actions that will partly or entirely destroy the ecosystem and local human environment, of these islands, would be much better spent on education, healthcare, infrastructure, etc. at home or abroad. We already have a greater military than the rest of the world combined. We do not need to test more weapons of war. Who do we need to protect ourselves against? If we can spent this money to turn our so called enemies into allies and friends no more people need to die or suffer needlessly.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
J. Lee (Electronic)	Comment to MITT As a person that has been living on Guam for the last 20 years, I have a lot of fond memories on this	Thank you for participating in the NEPA process. The Navy shares your concern for the terrestrial and marine environment. Potential effects

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	island and this island has become my home for many years. I am one of many inhabitants on this island. Although I may not be Chamorro, Guam is home. I love this island and the people of Guam. Therefore, I believe that this military project will impact me because I am now part of this community. The Solar activity will not only affect me but it will affect the many inhabitants on and around this island. MITT will destroy the sea life and there is a possibility of the community being diagnosis with cancer. Like the Marshall Islands, they have been greatly impacted by the radiation from nuclear testing in the past and many individuals have been diagnosis with cancer. According to Health and Human Consequences article, it states "Cancer rates and incidence of birth defects are greatly increased in areas exposed in the radiation fallout. According to the National Cancer Institute, exposure to radiation during the atmospheric testing era resulted in an estimated 120,000 extra cases of thyroid cancer and 6,000 deaths." Therefore, individuals will be impacted by the testing physically, psychologically, and their health will be impacted. Testing has been conducted in the past and individuals have been greatly impacted by the testing. Secondly, MITT will affect the sea life tremendously. The Earth Is being greatly impacted now compared to before, especially with Global Warming. There has been rising of sea levels, coral bleaching, and many other effects are occurring to the sea life. According to what's The Damage, it states "The production of nuclear weapons has polluted vast amounts of soil and water at hundreds of nuclear weapons facilities all over the world. Many of the substances released, including plutonium, uranium, strontium, caesium, benzene, polychlorinated biphenyls, mercury and cyanide, are carcinogenic and/or mutagenic and remain hazardous for thousands, some for hundreds of thousands, of years." Therefore, polluting the soil and water will greatly impact the sea life. There are more cons that can be listed but my two points are simply the major points that concern me as an individual that has made Guam her home. Reference Page "Green Peace International."	from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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	Green Peace. N.p., 26 Apr 2006. Web. 18 Nov 2013. <http://www.greenpeace.org/international/en/campaigns/peace/abolish-nuclear- weapons/the-damage/>. "Nevada Desert Experience." . N.p.. Web. 18 Nov 2013. <http://www.nevadadesertexperience.org/issues/consequences.htm>.	
V. Leeds (Electronic)	To whom it may concern, My understanding is that the Mariana Islands Training and Testing program (MITT) violates the National Environmental Policy Act and other environmental laws which have been passed by Congress. These laws are in place for a very good reason. This pristine area was once home to rare migratory birds and a plethora of sea life, now there is next to nothing able to survive there, nor will anything be able to for the foreseeable future. In addition, "Full-spectrum live-fire military exercises means year-round amphibious attacks, bombing, torpedoes, underwater mines and other detonations from the air, from the sea, and from the ground, as well as sonar training that will result in permanent hearing loss for up to 59 whales and dolphins per year, according to the Pentagon's own estimates." Please start taking better care of our planet and its inhabitants.	Thank you for participating in the NEPA process. This EIS/OEIS was developed to be in compliance with NEPA and other regulatory laws. Through the consultation and permitting process with NMFS and USFWS, the Navy refined the mitigation measures, which are presented in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, as directed by the environmental laws of the United States. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
V. Leon Guerrero (Guahan Coalition for Peace and Justice/Our Islands Are Sacred) (Written)	I do not support the proposed Mariana Islands Training and Testing Activities. I recommend the "No Action Alternative." however, my recommendation of this alternative does not mean I support the ongoing training activities already occuring in the Mariana Islands. The Navy's training and testing activties pose severe threats to our islands. I did not support the MIRC when you released that EIS, and I do not support the use of our islands for war games.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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R. Li (Academy of Our Lady of Guam) (Written)	Sonar: -Turned down when Marine creat was come close to the vessel - turned off when they are really close - for the safety of the citizens as being part of the navy. Mariana Islands on the playground for testing these military equipments.	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
S. Linford (Electronic)	Please cut back on Navy training and especially weapons testing!	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
L. Loe (Electronic)	HOW CAN THIS TRAINING AND TESTING BE PATRIOTIC? IT WILL INJURE/KILL OUR FELLOW CREATURES OF THE SEA, POLLUTE OUR AIR AND WATER, AND THE US IS NOT IN DANGER AT ALL FROM ANY OTHER ARMY OR NAVY. END THESE 'PRACTICE SESSIONS' NOW.	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
E. Lord (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the

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	testing activities pose severe threats to our islands.	Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
G. Lujan (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands and ocean; over time, threatening humanity as a whole.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
Malaya (Our Islands Are Sacred) (Written)	I do not support the proposed Mariana Islands Training & Testing activities. I recommend the 'No Action Alternative'. However, my recommendation of this alternative does not mean I support the ongoing training activities already occuring in the Mariana Islands. The Navy's training & testing activities pose severe threats to our islands.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
T. Maxedon (Electronic)	Sadly, DOD's proposed expansion of MIRC represents a harmful impact to the ecosystem of the Pacific Ocean, especially in the Marianas. It is just another proposal that has	Thank you for participating in the NEPA process. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in

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	fallen on deaf ears with respect to DOD's ongoing military build-up mentality in that region at all costs. Moreover, DOD's resources could be far better spent working to eliminate the various "garbage islands" floating in the Pacific and work to contain radioactive debris currently heading for US coastal regions that represents a far greater impact to the safety of US citizens. I am against any expansion of MIRC. Tom Maxedon Louisville, KY	previous NEPA documents) where training and testing activities historically occur. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
N. Mayers (Electronic)	i oppose the expansion at mariana island for the ecological and environmental harm it will cause, for the buildup of yet more military threat against China, for the waste of US resources devoted to waging war. I visited Jeju Island, So.Korea, where the village culture is being destroyed and the oceans are being polluted by the construction of a US/So.Korean navy base. The pink dolphins will never more return there.	Thank you for participating in the NEPA process. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. The Guam buildup is not part of this action. Information on the Guam buildup can be found at: http://www.guambuildupeis.us/ The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
R. Medina (Electronic)	Please learn the history about how the natives on Guam have been impacted; they had bombs, contaminated water, loss of land and many deaths and still births, please let them be and live their natural and cultural way	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
J. Mendiola (Electronic)	PLEASE LEAVE OUR ISLAND AND OCEANS ALONE!	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
L. Meo (Electronic)	"I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training

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	testing activities pose severe threats to our islands."	and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
Y. Mercado (Pearl 9 Productions) (Written)	I feel like the testing is necessary to keep us safe, but if there is an even safer way to do it without causing any harm to our land and water that would be much appreciated. Of course there will be casualties but if it could be in a more controlled, safe environment it would make Guam clean. & ultimately (mostly) everyone would be happy.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
R. Miller-1 (Electronic)	ES.5.2. In the EIS, it states that, "Alternative 1 reflects adjustments to the baseline activities which are necessary to support all current and proposed training and testing activities through 2020." This suggests that another EIS may have to be submitted at that time. Is there any possibility that as these EIS's continue to be submitted and the military continues to use land and sea areas that anything may be returned to the public or jurisdictions? Table ES.6-1. Section 3.1. Under the Metals section it states, "Sediments near military expended materials would contain some metals, but concentrations would be below applicable standards, regulations, and guidelines." It would be nice to know what the concentrations are, and what the standards are. Table ES.6-1. Section 3.1. Under Chemicals Other Than Explosives section it states, "Chemical, physical, or biological changes in sediment or water quality would not be detectable, and would be within existing conditions or designated uses." Again, it would be nice to see these numbers and know the levels which are not detectable. Just because something is not detectable does not mean it can't have a negative affect over a long period of time. Table ES.6-1. Section 3.3. Under the Acoustics section it states, "Most of the high-explosive military expended materials would detonate at or near the water surface. Only	Thank you for participating in the NEPA process. A previous EIS/OEIS for the training and testing in the MIRC was completed in 2010. The MITT EIS/OEIS is an update and an adjustment to the training and testing activities presented in the MIRC EIS/OEIS. It is very likely that there will be adjustments after 2020 and another EIS/OEIS will be required—which is also in keeping with CEQ guidelines to perform environmental reviews when there are changes to levels of activities. The information that you are requesting in your comments on the Executive Summary can be located in the main body of the Final EIS/OEIS, within the respective resource analysis sections. For instance, the details you are requesting what concentrations, standards, and detectability, are located within Section 3.1 (Sediments and Water Quality) of the Final EIS/OEIS. The Executive Summary was provided as a quick reference point to provide the reader with a brief synopsis of conclusions. The details on the analysis, criteria for the conclusions, and the analysis itself, are provided in much greater detail within the component sections. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible,

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	bottom-laid explosives could affect bottom substrate and, therefore, marine habitats." Marine habitats are not limited to bottom substrates. The open ocean is also considered a marine habitat and any explosives which are detonated at or near the water surface would affect the open ocean habitat. This needs to be addressed. It also states, "The surface area of bottom substrate affected would be a fraction of the total training and testing area available in the Study Area." While this may be true it would be important to delineate those bottom substrate areas that would be used and assess the effects on those specific bottom substrates as it may not be uniform over the entire Study Area. Soft bottom sediments were also discussed, but effects were not discussed. There are many animals and plants that inhabit soft bottoms sediments which may be affected by acoustics over soft-bottom sediments. This needs to be addressed. -Throughout the EIS there are many phrases which state that effects from certain activities are "not expected" on a certain group of animals (Example: Table ES.6-1 Section 3.4, under Acoustics). However, it does not clarify why this is stated. Is there data? If there is, it should be provided. If not, I'm not sure you can state this. Table ES.6-1 Section 3.4. Acoustics. What would be an affect that does not adversely affect marine mammals? Table ES.6-1 Section 3.4. Physical Disturbance and Strike. It is stated that "The use of seafloor devices would have no effect on any ESA-listed marine mammal." You seem very sure of this. Please supply your rationale. Table ES.6-1 Section 3.5. Acoustics. It is stated that the use of explosives will affect some species of sea turtles but not others, but provided no information as to why this is. Please expand on this and provide the rationale behind this statement. -Throughout the EIS the effects on ESA-listed species is discussed, however it is not discussed as to what affects any of this training or testing will have on other marine species. Why is this? Why were only ESA-listed, or those proposed to be listed, considered in this EIS? Table ES.6-1 Section 3.6. Secondary. It is stated that, "Pursuant to the MBTA and 50 C.F.R. Part 21.15, these	mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. The Navy's marine species monitoring program and associated reports can be found at http://www.navymarinespeciesmonitoring.us/

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	impacts will not cause significant adverse effects to populations of bird species not ESA listed and otherwise protected under the MBTA." How much of a population needs to be destroyed or affected before it has a significant adverse effect to the population? I think the goal should be not to reach that point, but to set the standards lower so that when we start to see a small affect, we can stop before it reaches a significant adverse effect to the population. Table ES.6-1 Section 3.10. Physical. Wildfires are mentioned for the first time here as affecting terrestrial species and habitats. Wildfires also have a secondary affect to coral reefs and should also be mentioned and analyzed in the marine invertebrates section. ES 7.4. How much monitoring will be done for the purposes of this project? In the past data that has been collected by the Navy seem to not be readily available to those who need it, and sometimes available only after an action has been carried out. It would be nice to see the protocols and know how the monitoring activities will be completed, and to get updates on progress as the monitoring goes along.	
R. Miller-2 (Electronic)	Section 2. Training and testing has historically occurred in the MITT Study Area, however there has never been any EIS before to determine the effects. Is there any way to know how the training and testing has affected habitats already? 3.0.4.1.6.1. "There are in-water active acoustic sources with narrow beam widths, downward directed transmissions, short pulse lengths, frequencies above known hearing ranges, low source levels, or some combination of these factors, that are not anticipated to result in takes of protected species and therefore are not required to be quantitatively analyzed." So, if a species is not protected, it does not require quantitative analysis? Is there any qualitative analysis that has been done? I think that those species which aren't listed should also be analyzed. Also, a behavioral risk function equation was given, but no source for this equation. Where did this come from and how is it applicable to this analysis? -Decibel levels are	The MIRC EIS/OEIS was previously prepared and a Record of Decision was issued in July 2010. The MITT EIS/OEIS is an update and an adjustment to the training and testing activities presented in that EIS. There is no way to know how the history of ongoing Navy training and testing may have affected habitats in the past. The Navy conducts surveys of the waters surrounding FDM on an annual basis. The purpose of the marine surveys is to monitor long-term effects to nearshore marine habitats, corals, fisheries resources and sea turtles from the continuing use of FDM as a live and inert firing range. An initial survey was completed in 1997. The annual surveys have been conducted since 1999. The 1997 to 2004 surveys were conducted by representative stakeholders from USFWS, NOAA, CNMI and a Navy contractor. Due to increased safety and liability concerns, the surveys from 2005 through 2013 were conducted by an all Navy team. During 14 years of marine surveys, no significant adverse long-term impacts on algae, corals, macroinvertebrates, fishes, or protected species have been detected

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	listed throughout the EIS. It would be nice if there was a list of dB levels, and what they are comparable to for reference. Also, it would be nice to get each species listed with dB levels next to them to see how it all compares. 3.0.4.1.6.2. "The source is expected to result in responses which are short term and inconsequential….." Even if a source is expected to result in responses which are short term, they should not be deemed inconsequential due to the fact that short term effects accumulated over the long term can become long term adverse effects. Table 3.0-5, Small Impulsive Sources. It states that there was quantitative modeling in multiple locations, however it does not list the locations. Do these locations correspond or have any resemblance with what it may be like in Guam, or the Marianas? Best to go from that data. -It would be nice to get the defined difference between training and testing. Are they essentially the same thing? Why are they separated. Table 3.0-8, Mid-Frequency, MF-1 & MF-4. Under Alternative 1, it seems that there are less sources than in the No Action Alternative. How/why is that? 3.0.5.2.1.1. Mine Warfare Sonar. "Mine detection sonar use would be concentrated in areas where practice mines are deployed, typically in water depths less than200 ft. (61 m)." Is this open ocean depth 200 ft., or is this bottom depth of 200 ft.? Some corals can still grow down to 200 ft., so it would be good to know how coral affects were accounted for at this depth with the use of Mine Warfare Sonar. 3.0.5.2.1.5. "In an attempt to determine traffic patterns for Navy and non-Navy vessels, the Center for Naval Analysis (Mintz and Parker 2006) conducted a review of historic data for commercial vessels, coastal shipping patterns, and Navy vessels along the east and west coasts." What would this be for Guam? Since this is proposed in Guam you should be using numbers for Guam and the CNMI. 3.0.5.2.3.3. "Certain devices do not have a realistic potential to strike living marine resources because they either move slowly through the water column (e.g., most unmanned undersurface vehicles) or are closely monitored by observers manning the towing platform (e.g., most towed devices)."	that could reasonably be attributed to training actions at FDM. The abundance, diversity, and health of the nearshore marine natural resources have remained steady and even improved for selected species over the last 14 years. Comparisons with data from NOAA's Coral Reef Ecosystem Division indicate that the marine natural resources assessed at FDM are comparable to, or superior to, those at other locations within the Marianas Archipelago. The benefits of restricted access to FDM have resulted in a de-facto preserve effect and outweigh the minor negative impacts of training. The greatest threat to FDM's marine resources is from increased fishing pressure by commercial and recreational spear, net, and hook and line fishermen. While these reports are not available to the public, the Navy plans to produce a publically available summary of the survey results. The statement quoted by the commenter on quantitative analyses is relevant to species that are known to be capable of detecting and are potentially impacted by active acoustic sources (e.g., sonar), which includes marine mammals and sea turtles. All marine mammals are protected by the MMPA and all sea turtles are listed under the ESA as either endangered or threatened. Quantitative analysis in the context of the statement refers to the analytical model used to estimate the number of exposures of marine mammals and sea turtles to acoustic stressors. The analysis as applied to marine mammals and sea turtles is described in detail in Section 3.4 (Marine Mammals) and 3.5 (Sea Turtles). Fish, birds, invertebrates (e.g., corals), and marine habitats are analyzed in separate sections in Chapter 3. Protected and "non-protected" species are included in the analysis, and both qualitative and quantitative methods are used in assessing impacts on those species groups.

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	How does moving slowly prevent you from having a realistic potential to strike a living marine resource? Are these vehicles controlled by someone that can see and avoid living marine resources? And how slow is "slowly moving"? 3.1.3.1.2. "When it functions properly (i.e., complete detonation), 99.997 percent of the explosive is converted to inorganic compounds." How often does it not function properly? 3.8.3.1. "Sonar is not used in areas where corals proposed for ESA listing are known to occur." Was it not stated that Sonar would be used port-side? There may be corals under the proposed listing which are present in Apra harbor and inner Apra harbor. Need to check on that, before you can make this statement. "Because research on the consequences of exposing marine invertebrates to anthropogenic sounds is limited, qualitative analyses described below were conducted to determine the effects of the following acoustic stressors on marine invertebrates within the Study Area:….." Quantitative analyses still need to be conducted before you can say for sure what the effects are. 3.8.3.1.1.1. "There is no evidence that corals or coral larvae are sensitive to distant non-impulse sounds." Is there evidence that they aren't sensitive to distant non-impulse sounds? Just because there is no evidence does not necessarily mean you can take that for fact.	
D. Mitchell (Electronic)	As a semi-retired, Pulitzer Prize-winning newspaper editor and publisher, I am fairly conversant with government policy and environmental issues, and I find the proposed Mariana Islands training-and-testing proposal to be an ethical and ecological disaster. If Pagan and other Mariana islands, as well as the open ocean, were subjected to heavy bombing and artillery fire, the marine ecosystem could not ever recover. The proposal would violate NEPA and a host of US environmental-protection laws. If it were carried out, the United States in future years would have to hang its head in shame for having been so shortsighted. The permanent damage will be remembered as equivalent to the mindless destruction of the ancient world's Great Library of Alexandria. The	Thank you for participating in the NEPA process. This EIS/OEIS does not propose any bombing on Pagan. Military activities proposed on Pagan are addressed in the CJMT EIS/OEIS. Information regarding the CJMT EIS/OEIS can be found at: http://www.cnmijointmilitarytrainingeis.com. While FDM is an authorized bombing range, FDM management measures are in place, which limit the amount of annual ordnance expenditure by explosive weight and location, and the Navy regularly monitors island resources in order to responsibly manage potential effects. The Navy's marine species monitoring reports can be found at http://www.navymarinespeciesmonitoring.us/. This EIS/OEIS was developed to be in compliance with NEPA and other regulatory laws. Through the consultation and permitting process with

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	environmental damage certainly will not make any of us proud to be Americans. Rather, it will reinforce the belief of domestic terrorists and our enemies that anti-US violence may on occasion be warranted. In short, the proposed training and testing site will make this country less safe.	NMFS and USFWS, the Navy refined the mitigation measures, which are presented in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, as directed by the environmental laws of the United States. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
M. Moniz (Electronic)	I do not support any military exercises in the CNMI. Unless the Feds are willing to pay for COFA migrants to get adequate health care and social services for the health problems and social disparity that were caused by them being displaced by the US, then no way. Enough already.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
S. Murphy (Electronic)	No action. I do not want to see military training continued in the Marianas. Please find a place in the US mainland to practice war.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
J. Nangauta (Electronic)	Håfa Adai ginen Guåhan, AHE! NO! I do not agree or accept training in the Mariåna Islands! Not the current training happening, nor the proposed action to use sonar, guns and munitions in the ocean, land, and air that surounds our islands. We must find ways to sustain our future generations of the WORLD without war games and violence that furthur degrade the earth and all living beings. We are the earth. The health of the land is the health of the people, ALL PEOPLE. Seek Peace, understanding & forgiveness with all mankind, we all bleed the same blood. We are ONE, With the earth, the sun, the moon, the skies, the animals, and the plants. It is	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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	obvious that the US Gov. intends to spread out across the globe, putfabot!(please) be a better stewart to the earth we live on. The US is the leading country of the world contributing to the nuclear contamination of the Environment along side Japan in recent times regarding Fukushima. No living being is spared from the ails of nuclear contamination. If we could possibly prevent such degradation to our homeland by standing up against this MITT proposal then we must do all we can to protect the Mariånas from furthur destruction. Its our duty to our sainas (ancestors) and the people who come before, tao tao mo'na. Allow indigenous people rights to live free on their homelands and decide their own fate. You want to be a good humanitarian and help the world as you like to portray then please! Clean the sites up from previous war activities on our islands and the islands that surround us! Guam - Cocos Lagoon, Anderson Airforce Base, Barrigada Storage Facility, Sumay, GabGab, Tinian, FDM, Bikini Atoll, Kwajalen Atoll, Enewetak, Belau. Our islands are also being protected by the Common Wealth Constitution in Article XIV NATURAL RESOURCES: "Section 1: Marine Resources. The marine resources in waters off the coast of the Commonwealth over which the Commonwealth now or hereafter may have any jurisdiction under United States law shall be managed, controlled, protected and preserved by the legislature for the benefit of the people. Source: Original provision, unaltered (ratified 1977, effective 1978). Section 2: Uninhabited Islands. The island of Managaha shall be maintained as an uninhabited place and used only for cultural and recreational purposes. The islands of Maug, Uracas, Asuncion, Guguan and other islands specified by law shall be maintained as uninhabited places and used only for the preservation and protection of natural resources, including but not limited to bird, wildlife and plant species. Source: Original provision (ratified 1977, effective 1978); amended by Second Const. Conv. Amend. 37 (1985). Section 3: Places and Things of Cultural and Historical Significance. Places of importance to the culture, traditions and history of the people	

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	of the Northern Mariana Islands shall be protected and preserved and public access to these places shall be maintained as provided by law. Artifacts and other things of cultural or historical significance shall be protected, preserved and maintained in the Commonwealth as provided by law. Source: Original provision, unaltered (ratified 1977, effective 1978)." ----------Our home is a sacred place to us where the plants and fish and birds have sustained our people for these THOUSANDS of years.DO NOT CONTINUE TO DESTROY THE SACREDNESS OF OUR ISLANDS. Do good and serve ALL equivalently.	
F. Naputi (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
J. Newland (Electronic)	To Whom It May Concern: I am writing this comment in order to put forth my recommendation that the United States Government, and the Department of the Navy, choose the "no action alternative" in regards to the EIS/OEIS generated for the Mariana Islands Training and Testing (MITT) Study Area. In my opinion the U.S. Navy should figure a way in which to work within the already existing MITT Site, the largest Department of Defense training site in the world. The Department of Defense manages approximately 29 million acres, it seems that there would be a considerable amount of land that could be used in lieu of the Mariana Islands, areas of considerable	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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	ecological and social value. As a combat veteran myself, I do understand the need for a force to maintain a readiness level that includes job proficiency through real-life training scenarios, as well as the necessity to test and develop new weaponry. As a university senior studying environmental science and biology, I feel there is considerable reason for the Navy to modify its stance in regards to the Migratory Bird Treaty Act and the Marine Mammal Protection Act. During my time in school I have taken many relevant courses in environmental science, ecology, biology, conservation and environmental impact statement evaluation, to name a few. I believe it is in the best interest of the United States military to pursue a more circumspect attitude towards the environment and especially towards delicate and complex ecosystems such as those found in the Mariana Island region.	The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. Please see Section 3.6.4.3 (Migratory Bird Treaty Act Determinations) for the Navy's overall impact assessment that proposed military training and testing activities would not adversely impact populations of birds. This includes all bird species protected under the MBTA, including migratory shorebirds. The Navy has applied for a letter of authorization from NMFS concerning potential impacts of the proposed training and testing activities on all marine mammals protected under the MMPA and known to occur in the MITT Study Area.
G. Nucum (Okkodo High School Fish Club [Marine Biology]) (Electronic)	Expanded MITT activities would critically disturb the already delicate balance between our environmental and military interests. The negative impact on marine life and habitats is too great a price to pay for what relatively less valuable benefit gained from needlessly expanding a military operation already present in the area.	Thank you for participating in the NEPA process. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
C. Onedera (Electronic)	I do not support the expansion of the MIRC beyond its current footprint nor do I support an increase in the military training in this region.	Thank you for participating in the NEPA process. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
S. Ooka-1 (Written)	"I do not support the proposed Mariana Islands Training and Testing activities. I recommend the No Action Alternative.	Thank you for participating in the NEPA process. As per CEQ interpretation on the “No Action Alternative,” the “no action” is “no

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	However, my recommendation of this alternative does not mean I support the ongoing training activities already occuring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our Islands.	change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
S. Ooka-2 (Written)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.	As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
J. Palma-Glennie (Electronic)	Aloha, It's brought me to tears to hear that the United States of America, in 2013, would even consider using a place as spectacular as the Mariana Islands for weapons training. As we say in Hawai`i, auwe (shame and sadness). Because the Mariana Islands, located in the western Pacific, are nowhere near as renowned as the Galapagos, the U.S. military has been conducting full-spectrum live-fire training on the island of Farallon de Medinilla, as well as over a half-million square miles of the open Pacific, wreaking death and suffering to all marine life. to rename this bioregion the "Mariana Islands Range Complex" (MIRC) is callous beyond belief. Since the imposition of the MIRC in 2010, Farallon de Medinilla, once	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. For information on the Navy's marine species monitoring reports, please visit http://www.navymarinespeciesmonitoring.us/.

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	teeming with amazing sea life and rare migratory birds, has been bombed and disfigured. thank you for consideration of my views on this most critical matter. please stop this travesty. please stop the militarization of the pacific and our world. what will be left for our children's children to sustain their lives environmentally, culturally, and spiritually.	
S. Palomo (Electronic)	I am opposed to any more military activities in the Mariana Islands. The Mariana Islands has a history and culture of over 4,000 years. The island chain is becoming a militarized zone with added restrictions to the waters surrounding the island chain. The United Nation's Declaration of Indigenous People's Rights must be adhered to, including the indigenous people of the Mariana Islands.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
J. Pangelinan (Electronic)	The footprint of the United States Military in our region is already substantial. There is no need for a testing zone this large in such a pristine environment. Undersea and on land live fire is unnecessary here in the Marianas when there are already existing facilities in the nation that are prepared to handle these activities. In other words, Keep the bombs out of our back yard.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur.
J. Patzek (Electronic)	This is insanity. Why would you risk the lives of all the plants and animals for unnecessary military training?! What does this teach our children? That lying absolute waste to Mother Nature is OK in any circumstance? Please adhere to the environmental laws that were put in place. Conserve the little amount of pristine habitat that we have left on Earth.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. The potential impacts of training and testing are adequately assessed and included in the USFWS Biological Opinion provided to the Navy. In addition, The Navy has applied for a letter of authorization from NMFS concerning potential impacts of the proposed training and testing activities on all marine mammals protected under the MMPA and known to occur in the MITT Study Area.
R. Pedano	“I do not support the proposed Mariana Islands Training and	Thank you for participating in the NEPA process. As per CEQ

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(Electronic)	Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands."	interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
P. Pelayo (Electronic)	From what I can understand, the test will affect animals such as the turtles. My question is there a back up plan to replenish the turtles that will potentially get killed from the testing?	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.5 (Sea Turtles) regarding an analysis of impacts on sea turtles. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
M. Pena (Electronic)	Would there be any protection for the marine birds and invertebrates that are not protected under the Endangered Species Act?	Thank you for participating in the NEPA process. The Navy has consulted with NMFS and USFWS on Federally protected species. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities; however, the Navy is not obligated to provide protection for marine birds and invertebrates not protected under ESA.
N. Pereda (Electronic)	Hafa adai, I am against the DoD's plans to expand the MIRC and MITT. Issues and facts: 1. The MIRC is the largest DOD	Thank you for participating in the NEPA process. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental

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	range in the world. It spans 501,873 nautical miles of ocean and is 3 times larger than California. 2. The MITT would nearly double the ocean covered under the MIRC, expanding the range of DOD training to 984,469 square nautical miles. The MITT would be larger than the states of Washington, Oregon, California, Idaho, Nevada, Arizona, Montana, and New Mexico combined. Comment: If MIRC is already the largest DOD range in the world there should be no reason to expand. Unless DoD presents legitimate reasons for what appears to be just want of excess or just plain greedy. Should DoD need more space for training it should consider a large portion of the US's mass continent waters first. 3. Under the MIRC/MITT, DOD will bomb Farallon de Medinilla, blow up mines under water and perform sonar training. 4.The use of sonar training will result in permanent hearing loss for up to 59 whales and dolphins per year. (MITT, Vol. 1, p. 3.4-114) Comment: These activities will destroy what is a pristine and unique ecosystem and an important part of the history of the Mariana Islands. The US government has been a forerunner for establishing wildlife and marine preserves as sanctuaries and for the protection of unique species, especially on Guam. It is contradictory for the US's DoD to continue with these plans or to have even suggested it. This may seem like a trivial matter to the DoD (who live far away in comfort) but if the northern islands ecosystem suffers it will affect the rest of us as well. So please do not expand the training grounds any further. Saina ma'ase, nathalie	impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals.
F. Perez (Electronic)	The military should really think about practicing in a different way. The live ammunition is really going to affect our sea life. Lots of dolphins and whales are going to be killed in the process and Guam doesn't always see a lot of them. Even if they only lose their hearing, they need their hearing to survive. This is going to affect their ability to live. I'm sure there's a safer way to approach this. It's imperative that our military is training, but it's also important that we protect our	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS and no mortalities are expected. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of

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	sea life.	its military training and testing activities. The Navy has been implementing a marine species monitoring program on all of its training ranges including MITT. Specific projects have focused on the effects of sonar on marine mammals. The Navy is committed to transparency of its data and as such, all annual reports and their appendices are posted at www.marinespeciesmonitoring.us.
J. Perez (Electronic)	I think readiness and training is essential to ensure military forces are ready for a host of low to high end contingencies that may arise in Northeast Asia and the East Asia regions. I do think that active sonar is also needed to search for diesel powered submarines owned by the Chinese military that can hide in the littorals. I am concerned about three things. First, small arms and other kinds of firing ranges are being proposed on Guam that will introduce spent rounds into the surround areas that may be deemed for live fire range use. Who is going to clean up and remediate the rounds that have been fired from land and introduced into the surrounding waters off of Andersen? I think the Navy E&I community and the Marine Corps presence to be placed on Guam must establish and execute on a remediation program that extracts these man made objects from the surrounding sea areas. I have not heard of another area in the U.S. that allows for this kind of training to take place. Also, I am concerned about sonar activities and the impacts that this will have towards marine life. I do not think sonar exercises should take place anywhere near the MIRC because it will result in whales and other marine creatures to beach on Guam's reefs. This has happened more than a couple of times over the years. I recommend that sonar activities take place hundreds of miles of the MIRC coastal areas and that they be strictly enforced in terms of impacts to the surrounding marine environment. My last comment is that military readiness training, research and testing of new vessels such as the LCS, VA class submarines, SEAL UDV's and other kinds of military assets should compete or impinge upon the activities that local	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals. Though the intensity of live training will increase, the events are of relatively short duration and therefore we do not anticipate that fish will be affected as a result of the training exercises and testing activities. Fish may respond behaviorally to sound sources in their hearing range (most Navy sound sources are not in the hearing range for most fish species), but this reaction is only expected to be brief and not biologically significant. With regards to deposition of metals from military training and testing activities, the Navy analyzed the potential for impacts from deposition of metals used in military training and testing in Section 3.1.3.2.3 (Impacts from Metals) of the EIS/OEIS. The analysis determined that metal components would come to rest on the sea floor and be exposed to seawater when resting on the bottom or, more likely, buried in sea floor sediments. These metals would slowly corrode over years or

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	fisherman must embark upon to go fishing throughout the area designated by the MIRC and the MITT area. The local fishing community should not be unduly restricted to their livelihoods because of an overwhelming military readiness requirement. There is plenty of room for everyone to use the surrounding waters that comprise the MIRC and the MITT. I understand the need for this training area but I do not want to see this pristine area become a military training area if it will compromise the marine environment and impinge on local needs to use the surrounding waters and to prevent the introduction of spent rounds into an otherwise clean area. Please take into consideration these comments for planning purposes.	decades and release small amounts of metals and metal compounds to adjacent sediments and waters. Metals tend to adsorb to sediments, particularly fine sediments and sediments with high organic content. Based on this assumption, concentrations of metals in the water column would be less than estimated concentrations of metals in marine sediments. Concentrations of metals would be greatest where military expended materials are in contact with seawater. Initial rates would decrease as corrosion and biological processes occur, and most leaching metals would bind with suspended sediments and particles and fall out of the water column. Within the immediate area where metals are deposited, metals from military expended materials would have short-term, localized impacts on sediments in the Study Area. Additionally, as indicated in Section 3.1 (Sediments and Water Quality) of the EIS/OEIS, a study by Pait et al. (2010) of previous Navy training areas at Vieques, Puerto Rico, found generally low concentrations of metals in marine sediments. The Navy compared sediment concentrations of metals and compared them to the National Oceanic and Atmospheric Administration's Sediment Guidelines and found average sediment concentrations of the metals evaluated, except for copper, were below both the threshold and probable effects levels. The average copper concentration was above the threshold effect level, but below the probable effect level. Given this information, the Navy concluded that chemical, physical, or biological changes to sediments or water quality would be measurable, but neither state nor federal standards or guidelines would be violated. Therefore, no specific mitigation measures were developed for removal of deposited metals from military training or testing activities. However, in accordance with DoD Directive 4715.11, "Environmental and Explosives Safety Management on Operational Ranges within the United States," the Navy has in place an Operational Range Clearance Plan for FDM. The operational range clearance plan on FDM includes range clearance, inspection, certification, demilitarization, and recycling or disposal procedures. The plan requires range surfaces at FDM to be cleared of all ordnance, inert ordnance debris, inert munitions, and other material that may potentially present an explosive hazard. Material greater than 2 ft. (0.6 m) in size are removed from impact areas on FDM. Range clearance on FDM occurs every 2–4 years, which reduces the potential for soil contamination and contamination of

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		nearshore habitats receiving surface runoff. Prior to training and testing activities, a Local Notice to Mariners is issued at least 72 hours in advance, and other public outreach, including notices in local news outlets, is provided, notifying the public of potentially hazardous training and training activities. Danger Zones and their rules are published in the Federal Register and are added to navigation charts for public warning and safety. Danger Zones may be closed to the public on a full-time or intermittent basis, as stated in the regulations; however, danger zone regulations provide for public access to the area to the maximum extent practicable. Many Navy at-sea training and testing ranges are accessible to the public for recreational and commercial purposes. The Navy acknowledges that during specific exercises, its training and testing could briefly limit public access (usually lasting hours) to a very limited portion of coastal and ocean areas to ensure public safety. Potential impacts on commercial and recreational fishing are addressed in Section 3.12 (Socioeconomic Resources) of the EIS/OEIS. The Navy acknowledges that during specific exercises, its training and testing could briefly limit public access (usually lasting hours) to a very limited portion of coastal and ocean areas to ensure public safety. The Navy has conducted training in these operating areas regularly for approximately 60 years. Though the intensity of training and testing will increase, the events are of relatively short duration. Fish may respond behaviorally to sound sources in their hearing range (most sound sources associated with training and testing activities are not in the hearing range for most fish species), but this reaction is only expected to be brief and not biologically significant.
S. Perez-1 (Written)	Dear Sir or Madam: I am writing in opposition to the proposed expansion of training activities outlined in the Mariana Islands Training and Testing (MITT) EIS. The Northern Mariana Islands host endangered birds, which are living in a pristine habitat. Many of these birds once existed on Guam, but they have become extinct since the 1980s. The cause of their extinction is the	Thank you for participating in the NEPA process. The Navy recognizes the importance of biosecurity, ecological integrity, and resiliency of island ecosystems to the potential introduction of invasive species to the Mariana Islands associated with military training and testing. The Navy has a number of policies in place to prevent, interdict, and control invasive species introductions in both terrestrial and marine environments. Specific policies for marine invasive species can be found

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	importation of the Brown tree snake through military planes. It is essential to point out that the military training proposed in the MITT activities will not only put our native wildlife in harm's way but it will accelerate the rate of harm of our land and marine species. Expansion of the Mariana Island Range Complex to 984,469 square nautical miles, use of sonar at levels that will cause permanent hearing loss to our whales and dolphins, bombing of Farallon de Medinilla and other unknown target sites within the proposed MITT areas are a huge assault on nature that calls this area home and the ecosystem that supports life. The proposed activities are in direct violation of the Endangered Species Act and Marine Mammal Protection Act.	in OPNAVINST 5090.1D Chapter 35-3.19. (Ship and Ballast Water), 5090.1D Chapter 35-3.1 (Environmentally Sound Ships), and 5090.1D Chapter 12-3.10 (Invasive Species). This information has been added to Section 3.10 (Terrestrial Species and Habitats) as part of an overall invasive species discussion that includes terrestrial, marine, and freshwater invasive species. The Navy is also requesting a Letter of Authorization from NMFS in order to comply with the MMPA. In conclusion, the Navy maintains that introduction of invasive species associated with military training and testing activities is low. It should be noted that the Navy or other military services do not have jurisdiction of other potential pathways for introduction (e.g., commercial activities, U.S. mail, non-DoD personnel). As part of the Section 7 ESA consultation between the Navy and the USFWS Pacific Islands Field Office, the Navy developed conservation measures specifically targeted at brown treesnake control and interdiction. The regional biosecurity plan is still in development, and the Navy is a contributing agency to the Brown Treesnake Technical Working Group. The brown treesnake control and interdiction efforts described in the conservation measures within this EIS/OEIS are concerned with avoiding, offsetting, or minimizing potential introductions of invasive species associated with increased training and testing. The Joint Region INRMP addresses other brown treesnake and invasive species control needs. Specific measures within the MIRC EIS/OEIS include: (1) The inclusion of a group of conservation measures under the heading, “Conservation Measures for Predators, Pests, and Plants: Invasive Species Management Associated with MIRC Training Activities.” (2) Inclusion of a measure entitled, “Brown Treesnake Interdiction and Control, and DoD Participation in the Brown Treesnake Control Plan.” (3) Self-Inspection Training for Personnel and Awareness: Avoidance Invasive Species Introductions. (4) DoD participation in the Regional Biosecurity Plan (5) Cooperative development of regional training SOPs and Exercise Planning For specific descriptions of these measures, please see Section 3.12 (Socioeconomic Resources) and Chapter 5 (Standard Operating

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		Procedures, Mitigation, and Monitoring).
S. Perez-2 (Written)	Secondly, the effects of technology on human life have not been adequately examined. The lack of transparency once put into effect will create the largest human experiment, in which the residents in the adjacent Pacific islands will be the unwitting and uninformed subjects. This is in direct violation of 50 USC SI 520a and other laws prohibiting human experimentation.	Based on the analysis in the EIS/OEIS, the proposed training and testing activities would not pose a risk to human life. DoD conducted public involvement to inform the public of the Proposed Action and to solicit their input on issues that should be considered in the EIS/OEIS during scoping meetings and the result of the EIS/OEIS analysis during EIS/OEIS public meetings. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
S. Perez-3 (Written)	Thirdly, the disproportionate burden placed on Pacific islanders for the protection of the United States proper is an environmental injustice. Moreover, this proposal is counter to the mission of the United States as a protectorate of Guam, as defined by the United Nations. The United Nations Charter states that the United States of America, as the administering power for Guam, is to protect "the interests of those inhabitants of the territories whose peoples have not yet attained a full measure of self-government as paramount." The UN Resolution 1514 further states "any attempt at partial or total disruption of the national unity and territorial integrity of a country is incompatible with the purposes and principles of the Charter of the United Nations." The proposed MITT activities are a disruption of our natural resources that we depend upon culturally, economically, and environmentally. I appreciate that you take these concerns under serious consideration. I intend to follow-up with any of my grave concerns regarding the proposals under the Mariana Islands Testing and Training and the Mariana Islands Range Complex.	The military is committed to protecting the environment during the conduct of its military training and testing activities, including FDM. Effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities.
Z. Perez (Electronic)	Though I fully understand the need for the MITT, as a Chamorro I must state my objection to the use of our most precious natural resource. More specific is the effect the MITT	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. The EIS/OEIS addresses every type of vegetation present in the Study Area, which are categorized into the six taxonomic

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	will have on our oceans marine vegetation (3.7). First is why were only six major taxonomic groups studied. There must surely be additional vegetation that will also be affected by this training area. Section 3.7.1 states that "Essential Fish Habitat (EFH) under the Magnuson-Stevens Fishery Conservation and Management Act are described in the Essential Fish Habitat Assessment (EFHA)". Why was a copy of this EFHA not provided with the EIS so we can further study the effects on all vegetation. Section 3.7.2 states that "Marine ecosystems depend almost entirely on the energy produced by marine vegetation through photosynthesis, which is the transformation of the sun's energy into chemical energy. In the lighted surface waters of the open ocean and coastal waters, marine algae and flowering plants provide oxygen, food, and habitat for many organisms in addition to forming the base of the marine food web". If this in fact true then how can I as a Chamorro allow the approval of this training area. 3.7.3.1.1.2 Alternative 1, Testing Activities, clearly states that "underwater explosions conducted for testing activities may injure or kill individual marine plants". It also speaks of the impacts of explosions that exceed natural disturbance intensities may uproot plants and damage substrates, which would delay recovery. As I continue to read through the section I notice the phrase "recovery is likely", will using areas already affected by the training techniques truly minimize the impact on Marine Vegetation or is this something we are hoping for?	groups, by phylum. Additionally, while impacts from training and testing activities may impact individual marine plants and vegetation, these impacts are not expected to cause population-level impacts (see Section 3.7.4, Summary of Potential Impacts [Combined Impacts of All Stressors] on Marine Vegetation), which would mean that the long-term survival, annual reproductive success, and the lifetime reproductive success of marine vegetation would not be impacted. For underwater explosions, the Navy conducts those activities in previously disturbed areas to further reduce impacts on marine vegetation communities. Summaries of the EFHA are provided in Section 3.7 (Marine Vegetation) of the EIS/OEIS. Marine vegetation is part of a habitat defined as EFH. The EFHA is a supporting document to the MITT EIS/OEIS and is available in the MITT website: www.MITT-EIS.com. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
K. Pinaula (University of Guam) (Written)	The presenters were able to provide very useful info on their cause, however, I still feel like the testing of new weapons, technologies, equipment could still very much harm our islands. I understand that in order for our islands to be protected, the US military should be able to utilize their equipment effectively. I just wish our islands didn't have to be exposed to anymore test like these. Our islands suffered so much over several decades and if in anyway the community agrees to the test, I just hope that the beauty of islands are	Thank you for participating in the NEPA process. The military is committed to protecting the marine environment during the conduct of its training and testing activities. As described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy has implemented extensive measures to protect the marine environment while training and testing. Research, development, and testing of weapons systems and new technologies is accomplished over a long process culminating in the

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	not affected.	military acquiring a system from the manufacturer and conducting testing activities to ensure the system is functioning as designed. Only this final phase of the process would be conducted in the Study Area. The development process for new technologies begins in controlled testing environments, such as test labs. After successful development, the new technology is integrated onto a platform (e.g., an aircraft) and evaluated on the ground or ashore. The new system is then tested for compatibility with the platform and other systems on the platform by the manufacturer, often at a private facility. After the military accepts the fully functioning new system, the military conducts independent tests to make sure the system meets the required specifications for use by operational personnel. Only these final tests of fully operational systems would be conducted in the Study Area. From the perspective of the environment, many testing activities are nearly identical to similar training activities.
J. Pineda (Electronic)	Within in the MITT Statement booklet that was passed out, I noticed the following, "Training and Testing of Explosives". Does that mean that Biochemical weapons will be used? If so, to what extent? With that, under the Environmental Resources section "...activities could result in local, short and long-term changes..." seem to be very prevalent in all the paragraphs. Considering that the marine life on Guam is very fragile, even if it was some how proven, "...chemical, physical or biological changes would not be detectable; would be below applicable standards..." what standards is being followed? Considering that history has proven that such things that were, "...not...detectable; would be below applicable" have proven in the future that it was the reason for such a breakdown (i.e. agent orange). Are alternatives set in place if it were to arise or will a mollified action be used?	Thank you for participating in the NEPA process. No “biochemical weapons” are proposed for use in the MITT EIS/OEIS. Please see Chapter 2 (Description of Proposed Action and Alternatives) of the MITT EIS/OEIS for descriptions of the type of activities, systems, sensors, and weapons used during military training and testing. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
L. Puyat (Electronic)	I oppose military plans to militarize our islands. We have lived on our islands for thousands of years and am against destruction and degradation of the environment of our islands. We want to preserve the land and sea for future	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. As per CEQ interpretation on the “No Action Alternative,” the “no action” is “no

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	generations. I advocate for the no action alternative and oppose the current testing and training in the Marianas. #OurIslandsAreSacred #SavePaganIsland	change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need.
A. Quichecho (Written)	How do you plan to recreate what you have destroyed on FSM? How are the native animals being saved? I disagree with expanding the military training area.	Thank you for participating in the NEPA process. The military is committed to protecting the environment during the conduct of its military training and testing activities, including FDM. Effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur.
N. Quinfanilla (Written)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the "No Action Alternative." However, my recommendation of the alternative does not mean I support the ongoing training activities already occuring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands." If we allow ANYBODY to use our homes As a site for their "war games, then we will be coming home to nothing but rubble, destruction, and radioactive silence.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
B. Ramos-1 (Micronesian	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.'	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no

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Islands Club) (Electronic)	However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.	change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
B. Ramos-2 (Micronesian Islands Club) (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.	As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
K. Reyes (Electronic)	I don't think that the Navy should employ the use of high frequency sonar testing or long-range sonar in the area which was recently designated as a national marine monument, nor in the waters around these islands unless they deem that there are no problematic effects of the sonar to the marine mammals, especially cetaceans, and no harmful effects to other organisms who may depend upon sonar for their livelihood. It is well-known that cetaceans and dolphins have been washing up on the shores of these islands recently much more than they did in the past, many are already dead when they do. Even recently, there have been dead false killer whales (an endangered species and protected by the federal government) washing up in Hawaii where there is also military sonar being used, and in California. I don't think this is a coincidence. These animals cannot be guinea pigs where we	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Additionally, the Navy has been implementing a marine species monitoring program on all of its training ranges including MITT. Specific projects have focused on the effects of sonar on marine mammals. The Navy is committed to transparency of its data and as such, all annual reports and their appendices are posted at www.marinespeciesmonitoring.us. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training

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	do the testing first and see later if they die. They must be protected, and I am sure our navy can use sonar in the parts of the world where there are no endangered cetaceans passing through or making their home. This is not a ridiculous request coming from a native to these islands who has an intense interest and passion in the marine life surrounding my islands. My future career depends on these animals being taken care of, and in studying these organisms and I don't want to not be able to because of a degradation of the food chain from it being disrupted by top predators being killed by sonar.	and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
M. Reyes (Written)	The Mariana Islands Training and Testing will not be supported by me. I acknowledge that my recommendation of "No Action Alternative does not exactly mean that I support the training activities already happening in the Marianas. Nevertheless, I believe that the possible training and testing of the Navy may pose severe threats to our islands.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
R. Ridge (Electronic)	As an ecologist, I would respectfully urge you not to devastate any of the Mariana Islands for training purposes. The diversity and richness of natural life there should not be subject to warlike activities. In the strongest terms, I urge you to protect and not destroy this environment.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
C. Roane (Electronic)	The expansion of the training in the Marianas is horrifying. Navy sonar disrupts marine animal foraging, causes hearing loss, and fatally injures whales. The Navy itself estimates that expanded training activities would cause 59 whales and	Thank you for participating in the NEPA process. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities

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	dolphins to suffer permanent hearing damage every year. Other impacts include those on sea turtles, fish, marine habitat, and the Mariana Trench Marine National Monument. Environmental activists say the exercises would violate the National Environmental Policy Act and other US environmental laws. In addition, Pagan is culturally important, anthropologically important, says Dr. Michael Hadfield, a zoology professor at the University of Hawaii. "[And] when the military takes an island for live-fire training, they destroy it." I'm with Dr. Hadfield and respectfully request that the US Navy stops this wrong-headed expansion before more life and cultural heritage is needlessly destroyed.	historically occur. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Additionally, the Navy has been implementing a marine species monitoring program on all of its training ranges including MITT. Specific projects have focused on the effects of sonar on marine mammals. The Navy is committed to transparency of its data and as such, all annual reports and their appendices are posted at www.marinespeciesmonitoring.us. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals. This EIS/OEIS was developed to be in compliance with NEPA and other regulatory laws. Through the consultation and permitting process with NMFS and USFWS, the Navy refined the mitigation measures, which are presented in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, as directed by the environmental laws of the United States. Lastly, training and testing activities on Pagan are not part of the MITT Proposed Action. Actions on Pagan are addressed in the CJMT EIS/OEIS. Information regarding the CJMT EIS/OEIS can be found at: http://www.cnmijointmilitarytrainingeis.com.

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N. Sanchez (Electronic)	As a native resident, I am deeply concerned about the terminal damage the build-up will have on my environment. As a tropical island, Guam is home to many different species of sea life. Tourism is one of Guam's most vital sources of income and many tourists come to Guam to experience our oceans. Section 3.5 states "the use of sonar and other active acoustic sources may affect and is likely to adversely affect ESA- listed green, hawksbill, loggerhead, and leatherback sea turtles." Also, section 3.93.1.1.1 states, " the shock wave from an underwater explosive is lethal to fish at close range, causing massive organ and tissue damage and internal bleeding." Then again in section 3.7, it states, "underwater explosives could affect marine vegetation by destroying individual plaints or damaging parts of plants." This will have a negative impact on our tourism industry thus a negative impact on our economy.	Thank you for participating in the NEPA process. The proposed build up is not analyzed as part of this Proposed Action; the build up on Guam was considered as part of the EIS/OEIS for the Guam and CNMI Military Relocation. Information on the Guam and CNMI Military Relocation (2012 Roadmap Adjustments) SEIS can be found at: http://www.guambuildupeis.us/. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Additionally, the Navy has been implementing a marine species monitoring program on all of its training ranges including MITT. Specific projects focus on the effects on the movements of sea turtles throughout the range to better inform our assessment of impacts. The Navy is committed to transparency of its data and as such, all annual reports and their appendices are posted at www.marinespeciesmonitoring.us. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS, including underwater explosives. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
F. Sanz (Written)	I am against the proposed Mariana Islands Training & Testing activities. I prefer the 'No Action Alternative.' However, my recommendation of this alternative doesn't mean I support	Thank you for participating in the NEPA process. As per CEQ interpretation on the “No Action Alternative,” the “no action” is “no change” from the current direction or level of intensity; therefore, the

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	the ongoing training activities already occuring in my home, the Mariana Islands. The Navy's training & testing activities endanger & threat our beautiful islands.	"no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities.
D. Searway (Electronic)	I am very sorry to hear all of this! It seems the story is always the same with a dis regard for the natural world,animals, other life forms and the original peoples.Our new base on an island off from south Korea is another tragic example.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
K. Seas (Electronic)	I oppose any additional military testing/bombing/etc. in the Mariana Islands vicinity. As someone who lived there for two years and have travelled the world extensively, I understand the unique beauty of the area, and its untouched nature. If the military needs more area for testing/bombing, I suggest they find someplace already damaged upon which to bomb/test, rather than destroy what little untouched beauty is left on the earth.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
F. lksfjflksjsfkjlsfjlksjf (Electronic)	I advocate for the no action alternative and oppose the current training and testing in the Marianas.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
K. Sinlao	The topic that interested me was how the sonar helps out the	Thank you for participating in the NEPA process. The Navy shares your

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(Academy of Our Lady of Guam) (Written)	U.S. with detecting enemy ships, however it affects the animals which harm them because of the sound waves. Which is considered one of the contributing factors as to why animals are harmed.	concern for marine life. Additionally, the Navy has been implementing a marine species monitoring program on all of its training ranges including MITT. Specific projects have focused on the effects of sonar on marine mammals. The Navy is committed to transparency of its data and as such, all annual reports and their appendices are posted at www.marinespeciesmonitoring.us. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
A. Sondheim- 1 (Written)	Against the use of large explosive device at Farallon de Medinilla Target Range {FDM) With imaging and surveillance technology available today, it should not be necessary to use heavy ordinance to assess the effectiveness of a pilot/bombardier or mariner's ability to place a bomb or missile on the target. It is not necessary to have a "Big Boom" to know whether ordinance has been skillfully placed on target or fallen widely from their intended target.	Thank you for participating in the NEPA process. Regarding the use of simulation, as described in Section 2.5.1.4.1 (Simulated Training) of the EIS/OEIS, today's simulation technology does not permit fully effective training and testing—though simulation training is used as much as possible, real-life training is still required. The Navy is constantly evaluating and funding research to assess improved technologies that will achieve Navy mission goals while protecting resources on land and at sea. Evaluation of these technologies continues to be a Navy focus as is research into all technologies that will protect and defend the United States. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
A. Sondheim-2	From speaking with Dept. of Fish and Wildlife personnel, I	The Navy recognizes that increased ordnance use on FDM would

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(Written)	understand FDM is home to as many as thirty-five endangered megapode birds, with large seabird colonies as well. The island is only 200 to 300 square acres. Detonating a single 900kg bomb, on this small island could destroy most of the terrestrial life on the island, assuming a 280M radius of lethality.	increase exposures of stressors discussed in the EIS/OEIS; however, no new impact areas are proposed. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. In addition, the Navy is consulting with the USFWS for potential impacts on ESA-listed species, including those on FDM. Lastly, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on terrestrial and marine species, to the maximum extent practicable, during its military training and testing activities.
A. Sondheim- 3 (Written)	As far as small arms fire, grenades, and small <1kg explosive devices, what care can be taken to minimize disruption to the terrestrial life there? Are the soldiers and air-assault teams informed of the endangered species on the island? Policy and procedures should include minimization of impacts outside of the immediate mission location on FDM.	The Navy recognizes that increased ordnance use on FDM would increase exposures of stressors discussed in the EIS/OEIS; however, no new impact areas are proposed. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. In addition, the Navy is consulting with the USFWS for potential impacts on ESA-listed species, including those on FDM. Lastly, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on terrestrial and marine species, to the maximum extent practicable, during its military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
A. Sondheim- 4 (Written)	Given that environmentalists and politicians have closed important training ranges at Kaho'olawe and Vieques Islands, doesn't it behoove the DOD policy makers not to draw the ire of these constituents to FDM?	The Navy recognizes that increased ordnance use on FDM would increase exposures of stressors discussed in the EIS/OEIS; however, no new impact areas are proposed. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. In addition, the Navy is consulting with the USFWS for potential impacts on ESA-listed species, including those on FDM. Lastly, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the

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		Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on terrestrial and marine species, to the maximum extent practicable, during its military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
A. Sondheim- 5 (Written)	Please explain to the public why large heavy ordinance must be used on FDM, instead of missiles or other bombs with inert or dummy warheads? If it is possible, to change the ordinance payloads, why not do it? At least give the public the reason why large explosive payloads must be used instead of inert warheads and bombs, with the generalized "military readiness" argument.	FDM management measures are in place that limit the amount of annual ordnance expenditure by explosive weight and location, and the Navy regularly monitors island resources in order to responsibly manage potential effects. The Navy is constantly evaluating and funding research to assess improved technologies that will achieve Navy mission goals while protecting resources on land and at sea. Evaluation of these technologies continues to be a Navy focus, as is research into all technologies that will protect and defend the United States. All the Services have a requirement by law (Title 10 of the U.S. Code) to meet strategic military and operational training requirements. The Services must train their personnel to use all of their weapon systems proficiently, efficiently, and safely. Activities conducted on FDM supports the Services requirement for training with weapons that include live and inert bombs up to 2,000 lbs. both guided and unguided, missiles and rockets, projectiles, and smart weapon systems. The military must train with all of their weapon systems in the most realistic scenarios possible, to include the use of explosive bombs, in order to replicate the stress to personnel and systems that they could encounter during combat. There is no substitute in the Mariana Islands Range Complex for the live training conducted at FDM. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
A. Sondheim- 6 (Written)	The DOD officials will encourage acts of political pressure, legal challenges, and civil disobedience, if they will not modify	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during

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	their practices. Think real hard and remember what happened with Kaho'olawe and Vieques ranges, and other mainland U.S. and off-shore training grounds--don't lose FDM due to recklessness. Do the right thing, and keep the explosive sizes to a minimum.	the conduct of its military training and testing activities. FDM management measures are in place that limit the amount of annual ordnance expenditure by explosive weight and location, and the Navy regularly monitors island resources in order to responsibly manage potential effects. The Navy is constantly evaluating and funding research to assess improved technologies that will achieve Navy mission goals while protecting resources on land and at sea. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
K. Suarez (Electronic)	I prefer the NO action alternative	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
L. Suidan (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

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A. Suni (Electronic)	Please stop this project! I have friends who live on the Island of Saipan who will be extremely negatively impacted by this project. Please take these tests and trainings elsewhere where they will not negatively impact the inhabitants of these Islands.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
S. Symes (Electronic)	I am totally AGAINST MITT especially as how the MITT would violate the National Environmental Policy Act and other environmental laws passed by Congress!!!! PLEASE do NOT continue with this, you are violating the very laws that were passed to SAVE the environment in this incredible, beautiful bio-diverse place!!!	Thank you for participating in the NEPA process. This EIS/OEIS was developed to be in compliance with NEPA and other regulatory laws. Through the consultation and permitting process with NMFS and USFWS, the Navy refined the mitigation measures, which are presented in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, as directed by the environmental laws of the United States. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
A. Taimanglo (Electronic)	Simply put, I do not support increased military testing, nor do I support the 'No Action' alternative. It is evident that there will be severe consequences that will negatively affect our environment, animals and our people. As the draft states, "The shock wave from an underwater explosion is lethal to fish at close range, causing massive organ and tissue damage and internal bleeding"(3.9.3.1.1.1) Another point outlined in the draft states "….the use of sonar and other active acoustic sources may affect and is likely to affect ESA- listed green, hawksbill, loggerhead, and leatherback sea turtles" (3.5) The list of potential threats goes on and the cons seem to outweigh the pros. The objective of the proposed action is to deter aggression and maintain freedom of the seas. The irony of this objective is that the agenda of the proposed action is grounded in aggression and increasing military testing in within our region would rob our environment, animals and people of this very freedom you seek to maintain. I would hate to see the depletion of our islands all because of a theoretical war that you must prepare for. Please consider the injustices that are outlined in the draft and how the people	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term

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	who call these islands home will be affected. With extreme sincerity, please do not sever our connection with the sea. I hope the sanctity of our islands will take precedence over the explosives, sonar and contaminants meant to sustain our freedom. Please do not destroy my home. Source: Navy Facilities Engineering Command, MITT EIS/OEIS Project Manager. (2013). Mariana islands training and testing activities draft environmental impact statement/overseas environmental impact st a tem e n t. Retrieved from website: http://mitt-eis.com/Portals/MITTEIS/files/draft_eis/MITT Draft EIS_v4_0.1a_Title_Page-Inside_Volume_I_4 September 2013.pdf	consequences to marine mammals. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
L. Taitano (Electronic)	Please leave our Islands and Ocean alone! We already have issues with our environment---why add to it by blowing up mines underwater and performing sonar training. We don't plan to go anywhere else---this is our island and we will find ways to protect it.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
S. Teulilo (Electronic)	Thank you for your time, I believe you all know what the right decision is.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
M. Teulilo (Electronic)	Our Islands are sacred and we do not need anymore military bases. Save Pagan!! GIVE US BACK OUR ISLANDS!!!	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. Pagan is not included in the MITT EIS/OEIS. Pagan actions are addressed in the CJMT EIS/OEIS. Information regarding the CJMT EIS/OEIS can be found at: http://www.cnmijointmilitarytrainingeis.com.
M. Thielk (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.'	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training

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		and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
A. Thorpe (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
E. Toves (Electronic)	I understand that testing new technology or giving proper training is appropriate in order for the military to be properly prepared for various types of situations. However, as shown by information displayed on the MITT website, "The Mariana Islands are an ideal setting for military training and testing activities because of their location in the Indo-Asia-Pacific region. The islands and the surrounding air and sea space have provided the United States (U.S.) military with a safe training and testing environment for decades." If the MIRC already provides "a safe training and testing environment," then there is no need to provide more space to increase safety. If expansion is to increase productivity of the MIRC, a description of the MIRC's attributes, shown by the website, "Expansive airspace, surface sea space, and underwater sea space," states that the space of the MIRC is "expansive". If the space is expansive, then why would it need to be increased? Clearly, the expansive space is not being used to optimal levels. Also, if losses can be estimated, as shown by this	Thank you for participating in the NEPA process. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Additionally, the Navy has been implementing a marine species monitoring program on all of its training ranges including MITT. Specific projects have focused on the effects of sonar on marine mammals. The Navy is committed to transparency of its data and as such, all annual reports and their appendices are posted at www.marinespeciesmonitoring.us. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on

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	statement, "The use of sonar training will result in permanent hearing loss for up to 59 whales and dolphins per year." (MITT, Vol. 1, p.3.4-144), then why can't it be prevented. New technology is supposed to be tested in the area, but if technology can't even prevent negative impacts, what good can the new technology even do?	marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
L. Toves (Electronic)	First of all, I am against the use of active sonar in our waters. According to the Scientific American, sound waves can travel for hundreds of miles under water, and can retain an intensity of 140 decibels as far as 300 miles from their source (John Slocum). If these sonar activities can kill our marine life, what more our divers? Divers exposed to high levels of underwater sound can suffer from dizziness, hearing damage or other injuries to other sensitive organs, depending on the frequency and intensity of the sound according, to The Diving Medical Advisory Committee. Second of all, I do not agree with the military taking away our land just so they can continue their training and testing. Our islands are sacred! They are slowly taking away what was once our identity. The military is supposed to do what's right not what's wrong! I feel as if they do not care about our island and our people and how this will affect the people of these islands.	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Additionally, the Navy has been implementing a marine species monitoring program on all of its training ranges including MITT. Specific projects have focused on the effects of sonar on marine mammals. The Navy is committed to transparency of its data and as such, all annual reports and their appendices are posted at www.marinespeciesmonitoring.us. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS, including underwater explosives. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. Section 3.13.2.2.4 (Sound Navigation and Sounding [Sonar] Safety) of

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		the EIS/OEIS, addresses studies regarding safe diving distances. Naval Sea Systems Command Instruction 3150.2, Appendix 1A, Safe Diving Distances from Transmitting Sonar, is the Navy's governing document for protecting divers during active sonar use (U.S. Department of the Navy 2011b). Based on the analysis presented in the EIS/OEIS, the public is unlikely to be exposed to underwater energy at Navy pierside locations, in training and testing areas, or in ports (please see Section 3.13.3.1, Underwater Energy).
D. Tugaga (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
D. Tugaga-2 (Electronic)	I do not support the militarization of the Mariana/Micronesian Islands! Our Islands are Sacred, and we are still living. Our islands are our homelands, where our stories are held, our ancestors are buried, our way of life is valued and practiced. Please help us take care of our homes, and not destroy it. We are still alive, and so will our future generations. Please help us help our people. Only in solidarity can we honor our communities and our cultures, not destruction.	The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
M. Tuncap (Electronic)	My name is Michael Tuncap and I was born in Tamuning in 1979. My father served in the US Air Force for 17 years and 19 years in the US Postal Service. My mother served as a para educator in public schools in Guam and Washington state for 36 years. I have served as a teacher and counselor for public colleges for 15 years. We are proud to be Chamorro from the	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training

Commenter	Comment	Navy Response
	island of Guam and we speak out against the proposal to take over Pagan. I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.	and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. Pagan is not included in the MITT EIS/OEIS. Pagan actions are addressed in the CJMT EIS/OEIS. Information regarding the CJMT EIS/OEIS can be found at: http://www.cnmijointmilitarytrainingeis.com.
P. Turner (Electronic)	I'm submitting this comment to ask that the Pentagon and specifically the Navy, not do live fire exercises in Marianas Islands. While I understand the military's needs to do live fire exercises, the types of exercises that you intend to conduct in the Marianas Islands can be done in less pristine areas. There are many places throughout the U.S. and its territories that are significantly less pristine than the Marianas Islands. Why not choose those places. Clearly we have Air Forces weapons ranges that are within reach of carrier launch aircraft. Why do you need an island? What potential foe for the foreseeable future is an island nation?	Thank you for participating in the NEPA process. Range complexes provide controlled and safe environments where military ship, submarine, and aircraft crews can train in realistic conditions. The combination of undersea ranges and operating areas with land training ranges, safety landing fields, and nearshore amphibious landing sites is critical to realistic training (including use of live ammunition), and allows electronics on the range to capture data on the effectiveness of tactics and equipment—data that provide a feedback mechanism for training evaluation. The Navy continues to research new ways to provide realistic training through simulation, but there are limits to the realism that technology can presently provide. Unlike live training, computer-based training does not provide the requisite level of realism necessary to attain combat readiness. Simulation cannot replicate the inherent high-stress environment and complexity of the coordination needed to combine multiple military assets and personnel into a single fighting unit. Most notably, simulation cannot mimic dynamic environments involving numerous forces or accurately model the behavior of sound in complex training media such as the marine environment. The Alternatives carried forward were developed to meet the Navy's purpose and need and to ensure that it can fulfill its obligation under Title 10 of the United States Code. See Section 2.5 (Alternatives Development) for more detailed information on the development of alternatives and rationale for the amount of training required.

Commenter	Comment	Navy Response
		The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
D. Vice (Electronic)	The continued growth of DoD activities in the mariana islands is placing considerable strain upon natural resources without adequate analysis of the cumulative effects of said growth. While each EIS developed is presented to the public as a stand alone project, the simple fact remains that it is virtually impossible for anyone to make any real analysis of the overall impacts to the region, as the documents generated are simply too cumbersome for anyone to fully understand, and they consistently fail to connect the pieces into a single bigger picture for DoD actions in the region - by failing to consolidate all reasonably foreseeable actions into single NEPA documents, DoD is failing in a fundamental principle of federal environmental law. This EIS fails (again) to provide any real analysis of the impacts DoD activities have upon sport fishing in the Marianas. Significant important chunks of sea mounts, banks and offshore ocean environments will be restricted under the preferred alternative, and coupled with the pending Guam Build-Up SEIS, where Ritidian Point will be considered the preferred firing range alternative, will even further erode the ability of fishermen in the region to pursue their legal activities in an ocean not owned by the DoD. This is simply unacceptable from the fishing community in Guam, and there must be greater consideration (and concessions) from DoD when analyzing the significant impacts that have so far been dismissed by those writing the EIS and those handling comments in public meetings.	Thank you for participating in the NEPA process. The scope of this EIS/OEIS is properly limited to those actions required to meet the purpose and need of the Proposed Action. Cumulative impacts are addressed in Chapter 4 (Cumulative Impacts) of the EIS/OEIS. The cumulative analysis follows the requirements of NEPA. Cumulative impacts were analyzed for each resource addressed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS for the No Action, Alternative 1, and Alternative 2 in combination with past, present, and reasonable foreseeable future actions. Prior to training and testing activities, a Local Notice to Mariners is issued at least 72 hours in advance, and other public outreach, including notices in local news outlets, is provided, notifying the public of potentially hazardous training and training activities. Danger Zones and their rules are published in the Federal Register and are added to navigation charts for public warning and safety. Danger Zones may be closed to the public on a full-time or intermittent basis, as stated in the regulations; however, danger zone regulations provide for public access to the area to the maximum extent practicable. Potential impacts on commercial and recreational fishing are addressed in Section 3.12 (Socioeconomic Resources) of the EIS/OEIS. The Navy acknowledges that during specific exercises, its training and testing could briefly limit public access (usually lasting hours) to a very limited portion of coastal and ocean areas to ensure public safety. The Navy has conducted training in these operating areas regularly for approximately 60 years. Though the intensity of training and testing would increase, the events are of relatively short duration. Fish may respond behaviorally to sound sources in their hearing range (most sound sources associated with training and testing activities are not in the hearing range for most fish species), but this reaction is only expected to

Commenter	Comment	Navy Response
		be brief and not biologically significant. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
D. Vice - 2 (Electronic)	The continued growth of DoD's footprint in the Marianas is being pushed without any real consideration of the cumulative effect on the region's natural resources. By generating volume after volume of essentially unreadable NEPA documents that are simply too overwhelming in verbage but lacking in analysis, DoD has failed to 1) Adequate assess the reasonably foreseeable actions that should be incorporated into every NEPA document, 2) link connected projects, which is contrary to NEPA (compartmentalizing), and 3) Put together any real analysis which could give the public an understanding of what the TOTAL impact of DoD will be on Guam and the Northern Marianas. In this document, DoD has not adequately assessed the real impacts to local fisherman, as large tracts of important fishing grounds will become restricted, which is unacceptable to local fisherman, especially given the immense amount of open ocean available to DoD in surrounding waters that could be used without significantly impacting fishermen. Public comments were delivered by multiple individuals in earlier scoping meetings, and they appear to have been completely ignored. The potential loss of important offshore fishing sites, coupled with the forthcoming SEIS for the Guam Build-Up, which will identify Ritidian Point as a SDZ for the firing range, will further erode the local fishing communities ability to engage in lawful activities in an ocean not owned by the DoD. This is simply not acceptable, and DoD must do a better job analyzing the impacts of their proposed actions, assess the TOTAL impacts under all proposed, past, and foreseeable projects, and make considerations (concessions) to the fishing public that will not restrict access to important fishing areas.	The Navy used the best available science and a comprehensive review of past, present, and reasonably foreseeable actions to develop a robust Cumulative Impacts analysis. See Chapter 4 (Cumulative Impacts) of the EIS/OEIS. In accordance with Council on Environmental Quality guidance, the cumulative impacts analysis focused on impacts that are “truly meaningful.” This was accomplished by reviewing the direct and indirect impacts that would occur on each resource under each of the alternatives. Key factors considered were the current status and sensitivity of the resource, and the intensity, duration, and spatial extent of the impacts of each potential stressor. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. Potential impacts on commercial and recreational fishing are addressed in Section 3.12 (Socioeconomic Resources) of the EIS/OEIS. The Navy acknowledges that during specific exercises, its training and testing could limit public access (usually for hours rather than days) to a very limited portion of coastal and ocean areas to ensure public safety. Prior to training and testing activities, a Local Notice to Mariners is issued at least 72 hours in advance, and other public outreach, including notices in local news outlets, is provided, notifying the public of potentially hazardous training and training activities. These notices are intended to keep local mariners informed of upcoming restrictions on areas used by the Navy, so that they may plan in advance and avoid or reduce the effects of limitation on access to certain marine areas. Danger Zones and their rules are published in the Federal Register and are added to navigation charts for public warning and safety. Danger Zones may be closed to the public on a full-time or intermittent basis, as stated in the

Commenter	Comment	Navy Response
		regulations; however, danger zone regulations provide for public access to the area to the maximum extent practicable. The military is committed to working with the local community on issues that potentially affect the public, including access to fishing sites. For example, the Navy now allows access to the northern portion of W-517 during activities that occur far from that area in the southern portion of W-517 so that fishers can transit to and fish on White Tuna Banks and other nearby popular fishing sites. Previously, any activities occurring in W-517 would have required closure of the entire warning area regardless of where the activity took place within W-517. The Navy also announces upcoming periods when FDM will not be used for several consecutive days to allow mariners to plan to fish or transit through the danger zone beyond 3 nm from FDM.
K. Wang (Electronic)	I do not support the proposed Mariana Islands training and testing activities. I recommend the "no action alternative." However my recommendation of this alternative does not mean I support the ongoing training activities already occuring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our Islands. Please note there are histories, cultures and people living on these islands and are their dear home and do not deserve to be constantly bombarded by these military pollution. Would you like it if another civilization were to do the same behind your backyard?	Thank you for participating in the NEPA process. As per CEQ interpretation on the “No Action Alternative,” the “no action” is “no change” from the current direction or level of intensity; therefore, the “no action” alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
L. Wang-1 (Electronic)	I am of the strong opinion that as a nation we cannot continue to undermine the ecologies of the world system even with items deemed to be in the strategic interest of this country. The things that we do in the name of strategic interests are proving to undermine our strategic interests.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
L. Wang-2 (Electronic)	I hold the strong belief that we as a nation cannot continue to undermine the ecologies of this planet, even if these actions are deemed to be in the strategic interest of our country. I	The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing

Commenter	Comment	Navy Response
	would go further to say that much of what we do in the belief that we are advancing our strategic interests actually are undermining those interests.	activities.
A. Whaley (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
T. Williams (NY4whales) (Electronic)	The Mariana Islands represent one of the most ecologically rich locations on earth. Pristine waters, unbelievable beauty in the middle of the Pacific Ocean - including the Marianas Trench Marine National Monument - an abundance of marine life, make this an unforgettable place. Yet, since the US assumed control of the Marianas during World War II, the Navy has been systematically destroying this enchanting place. If the military is permitted to maintain these activities, it will continue to be labeled as the "worst enemy of the environment on the planet". GONE FOREVER: most of one island, the Farallon de Medilla has already been destroyed after live-fire testing and military bombing exercises, while further naval war games have scarred and damaged large areas of open ocean. Shockingly, the Navy now wants to double its training range to nearly one million square nautical miles - an area larger than Washington, Oregon, California, Idaho, Nevada, Arizona, Montana and New Mexico combined - despite not even knowing what marine life will be lost! Scientists are continually finding new species of marine life, but in the Marianas Islands Training and Testing area, there	Thank you for participating in the NEPA process. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Additionally, the Navy has been implementing a marine species monitoring program on all of its training ranges including MITT. Specific projects have focused on the effects of sonar on marine mammals. The Navy is committed to transparency of its data and as such, all annual reports and their appendices are posted at www.marinespeciesmonitoring.us. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine

Commenter	Comment	Navy Response
	will be nothing for scientists to investigate, judging from the past record of military destruction of its training areas (just consider Vieques, Puerto Rico). How is it that the Navy can claim that its activities, such as active sonar, will do no harm to marine life? The Navy's own testing (Scientific Research Program) found that attenuation of low frequency active sonar falls only to 150 dB at 300 miles from the source (240 dB). The ridiculous assertion that personnel will be posted as whale-lookouts represents a facetious attempt to whitewash the destructive capacity of this sonar. Who can see beyond 1 km at night? Who can see beyond less than 1 km in bad weather in day or night? Who will see whales 300 miles away? Scientists and biologists know what the results are when whales and dolphins are hit with 150 dB of active LF Sonar, yet the navy refuses to acknowledge this harm. Sonar will be operating 24 hours a day; when will the Navy face itself, face the assault they are committing against marine organisms, fish, and WHALES - not enemies of the US! When has the Navy actually sent planes overhead to monitor for whales during sonar exercises? No one in their right minds thinks they ever did, although it is purported part of the "monitoring" plan. It is not easy to spot whales from a plane anyway when they can stay submerged for a half hour at a time! The continual bombing of beaches and coastal regions represents the ultimate destruction of these ecosystems, and all the life that depends on them, from corals to plankton to manatees and whales. It is absurd to think the Navy is acting in any manner except reckless, irresponsible and destructive. Pagan Island's inhabitants will likely be drive out, and its endangered species endemic only to this island will be predictably driven to extinction. There is no justification under God - or any other power - that gives the US military the right to do this. Military activities in this area are immoral, cruel, inhumane and unjustified. How many times has Mid or Low Frequency Active Sonars been used to intercept incoming threats to the US? The legacy of destruction is an assault on the people - indigenous and non-native - of this vast area, and indeed	Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

Commenter	Comment	Navy Response
	further incites a fierce and growing hatred toward the US for its irresponsibility toward those they consider “collateral damage” - the ecosystems, environment, economic resources and the PEOPLE of the military training ranges they are destroying. Let’s not further this horrible distinction; let’s not foster the anti-US sentiment abroad by this MITT destruction. Do not grant a Letter of Authorization or permit to "take" any marine life or act in violation of any of our current environmental laws: ESA, CZMA, MMPA, NEPA.	
W. Woodward (Electronic)	Leave the islands alone! You bomb and shoot up enough places already.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
S. Wu (Electronic)	I was informed that the DOD will bomb Farallon de Medinilla, blow up mines under water and perform sonar training. The use of sonar training will result in permanent hearing loss for up to 59 whales and dolphins per year. I want to add that, if they will perform sonar training and deafen a good sum of sea animals in the process. I am strongly against this sort of training. It is not moral in my opinion. There could even be endangered species that inhabit on these large ocean ranges. Inflicting hearing loss on sea animals will definitely lower their chance of survival.	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. The analysis and the science show that there are no significant impacts on marine species. Additionally, the Navy has been implementing a marine species monitoring program on all of its training ranges including MITT. Specific projects have focused on the effects of sonar on marine mammals. The Navy is committed to transparency of its data and as such, all annual reports and their appendices are posted at www.marinespeciesmonitoring.us. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements mitigation measures with the aim of achieving the least practicable adverse impacts on marine mammal species or stocks, to the maximum extent practicable, during its training and testing activities. Please see Section 3.4 (Marine Mammals) regarding an analysis of impacts on marine mammals. The U.S. Navy has conducted active sonar training and testing activities for decades in the sea space depicted in the Study Area with no indications of long-term consequences to marine mammals. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

E.3.4 ORIGINAL COMMENTS

All original comments follow, in the same order as Tables E.3-1 through E.3-3.

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Eddie Baza Calvo
Governor of Guam

Ray Tenorio
Lieutenant Governor

BUREAU OF
STATISTICS & PLANS
SAGAN PLANU SIHA YAN EMFOTMASION
Government of Guam
P.O. Box 2950 Hagåtña, Guam 96932
Tel: (671) 472-4201/3
Fax: (671) 477-1812

Lorilee T. Crisostomo
Director

DEC 12 2013

Naval Facilities Engineering Command, Pacific
Attention: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Hafa Adai:

The Bureau of Statistics and Plans is once again submitting the following comments in response to the request for comment regarding the Department of Defense (DOD) preparation of an Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS), for the proposed Mariana Islands Training and Testing (MITT) activities. It was indicated that the MITT EIS is the reevaluation and reauthorization of training and testing activities reviewed in the Mariana Islands Range Complex EIS/OEIS, which was completed by the Navy with input from the community in 2010.

Accordingly, the proposed Action is to continue to conduct training and testing activities, which may include the use of active sonar and explosives, primarily in established operating and military warning areas of the MITT Study Area. It may also include pierside sonar maintenance and testing alongside navy piers in Inner Apra Harbor, and land-based training activities at existing ranges and other training locations on Guam and the Commonwealth of the Northern Mariana Islands (CNMI). We understand that the "purpose of the Proposed Action is to ensure the Navy accomplishes its mission to maintain, train and equip combat-ready military forces capable of winning wars, deterring aggression and maintaining freedom of the seas."

Federal Consistency Requirements:

We want to reiterate the need for the Department of the Navy to follow the Federal Consistency requirements under the Coastal Zone Management Act (CZMA) of 1972, 16 USC § 1456©(1) and the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) Public Law 101-508, mandate that any action proposed by a Federal agency – regardless of the location of that activity –that will have a reasonably foreseeable effect on any land or water use or natural resource of a State's coastal zone must be consistent to the maximum extent practicable with the enforceable policies of State's federally-approved CZMA programs, Section 307©(1)(A), 15 CFR Part 930.37. ***Federal consistency obligations under the CZMA are independent of those required under the National Environmental Protection Act and are not necessarily fulfilled by the submission of a NEPA document, 15 CFR Part 930.37.*** As provided in the Federal consistency rules and regulations approved by NOAA/OCRM, all Federal and State agencies should mutually agree on how to best coordinate the requirements of NEPA and the CZM Act. Since the BSP has a Cooperative Agreement with NOAA to implement CZMA and CZARA, the BSP must either concur or object to the proposed activity; once a determination has been submitted as stated on our previous response for comment date, November 7, 2011.

Comments and/or Concerns:

Section 2. An overarching concern with the MITT DEIS is one we expressed in our comments for the Mariana Islands Range Complex DEIS and FEIS, primarily that this DEIS lacks a range of reasonable alternatives. The proposed action alternatives are nearly identical, with the main differences between Alternative 1 and Alternative 2 being primarily related to the level of activity rather than, for example, different site locations for individual activities. The Navy's Environmental and Natural Resources Program Manual provides examples of the types of alternatives that should be included in an EIS, including 1) taking no action, 2) postponing action, and 3) selecting actions of a significantly different nature that would meet mission and project objectives with different environmental impacts. We believe that Alternative 1 and Alternative 2 are not sufficiently different, leaving reviewers with essentially one action alternative (which, then, is not an "alternative" at all), and thus a range of reasonable alternatives is not offered for evaluation of environmental impacts. Alternatives should address alternate designs, site locations, etc. when establishing the selection criteria. In addition, the rationale behind the decision to evaluate the Alternative 2 as presented in this DEIS is not clear. The document states that "this alternative allows for potential budget increases, strategic necessity, and future training and testing requirements", but this vague statement, and the designation of Alternative 1 as the Preferred Alternative, suggests that the additional activities and increased level of Alternative 1 activities under Alternative 2 were not actually required to meet the stated Purpose and Need, or that they were unrealistic given current budget constraints. Thus, the inclusion of Alternative 2 has the appearance of being a highballing tactic, where the impacts of the Preferred Alternative (Alternative 1) are compared against the greater impacts of another alternative (Alternative 2) that the action proponent had no intention in pursuing.

3.1.3. The authors of the MITT DEIS indicate that an analysis of the potential water quality impacts of amphibious landings was not pursued in this document because a 1999 study of the impacts of this activity on corals at a site in Tinian concluded that observed sediment plumes were localized, dissipated within minutes, and "were not qualitatively different from episodes of sediment resuspension during periods of storm-driven waves that occur routinely on Tinian." While we are concerned with statements such as this, which ignore the potential impacts of increasing the frequency of disturbance events beyond a normal condition as a result of human activity, even if when an individual human-caused disturbance may be similar to an individual natural disturbance, we are primarily concerned with the reliance of a single study in Tinian to preclude further analysis of potential impacts to current or planned amphibious landing sites, such as Dry Dock Island and Dadi. The sediment characteristics are considerably different between the Tinian and Guam sites, with the Tinian site is dominated primarily by large-grained, bioclastic sediments, while the Guam sites would have a significantly greater proportion of fine-grained clays and other sediments of terrestrial origin. The larger-grained bioclastic sediments would be expected to settle relatively quickly after resuspension, but the fine-grained sediments would remain suspended for a longer period of time. The fine-grained sediments are also known to be more harmful to corals and other benthic organisms. Both Guam sites are also far less exposed to storm-driven waves than the Tinian site, which would lead us to conclude that the resuspension of sediments by amphibious landing activity would likely occur at levels that would not occur naturally. The concentration of suspended sediments may indeed increase at these sites after significant rain events, but it is not clear how Total Suspended Sediment loads resulting from amphibious landing activities would compare with major rainfall events – hence the need to evaluate the potential impacts further. We expressed concerns regarding the potential impacts of amphibious landing activities on water quality and nearby marine communities in our comments on the MIRC DEIS and FEIS. In our comments we noted that Government of Guam biologists have witnessed highly turbid water apparently related to nearby Landing Craft Air Cushion (LCAC) activity while snorkeling at Jade Shoals on February 2, 2009. A sediment plume was visible in the immediate vicinity of the craft near relatively shallow areas, and the water quality appeared to diminish as one approached the landing beach, indicating that the shallow water near the landing beach was the main

source of the suspended solids. While temporary, these impacts should not be considered insignificant, especially if the intensity of these activities were to increase. While the poor water quality observed at Jade Shoals may not directly cause the mortality of corals and other reef organisms directly, it does place upon the reef community a level of stress that would not otherwise occur but for the activity of the LCACs. Corals, for example, would have to expend additional energy removing sediment that would not otherwise occur, potentially resulting in reduced fecundity, reduced growth rates, and increased susceptibility to pathogens. Many of the reefs of Guam are subject to intense anthropogenic impacts, and as such many are in poor to fair condition. Additional impacts to corals and other reef organisms should be considered within this context, especially within the larger context of climate change and the expected impacts to reefs; the cumulative impacts of the myriad of impacts caused by human activity should be considered in this analysis. Our comments on the MIRC EIS documents regarding the consideration of climate change impacts are even more relevant now, as Guam's reefs have recently experience the most significant coral bleaching event on record. At the very least, the potential impact of amphibious landing activities on paled and bleached corals should be evaluated, and mitigation options should include potentially altering the location and timing of amphibious landing activities during coral bleaching events and mass coral spawning events.

3.3.3. We are concerned about the impact of landing craft exercises that would occur at Dadi Beach on the dolphins that reside in Agat Bay. LCAC's, for example, are very loud and have a high potential to disturb the natural behavior of the dolphin pod that resides in Agat Bay. There is also the chance of injury or death resulting from vessel strikes. Repeated temporary disturbances may result in long term impacts, such as abandonment of that area. The apparently high potential for disturbance/injury to cetaceans as a result of increased intensity of exercises involving amphibious vehicle suggests that there will be unavoidable impacts.

3.4.5. We are also concerned about the impacts of underwater mine detonation activities on dolphins and other cetaceans at the Agat and Outer Apra Harbor sites, especially considering the size of the explosives would double under the preferred action alternative. We would like to see specific mitigation measures for avoiding impacts to these populations as a result of this particular activity.

3.3.3.2. Related to our concerns regarding the impacts of amphibious landing activities on marine water quality and the potential for indirect impacts to benthic communities, we are also concerned about the potential for direct physical impacts of this activity on benthic habitat. Impacts that alter the structure of the reef, whether covered with living coral, crustose coralline algae, turf algae, macroalgae, etc. can be considered impacts to Essential Fish Habitat. For example, the repeated use of amphibious landing craft in the shallow waters at any of the current or proposed sites could alter the reef structure, possibly reducing rugosity and thus affecting its suitability to certain fish species. Even with amphibious landing craft such as the LCAC, which operate on a cushion of air, have the potential to directly impact benthic habitat through improper use (which might be expected during training exercises). For example, anecdotal reports from a past LCAC demonstration at Dadi Beach indicate that large coral colonies were disturbed (e.g., detached from substrate) when an LCAC was brought down in the shallow water just beyond the beach, and then raised again to bring the craft upon the beach. What measures will be implemented so that this type of impact does not occur? And what type of mitigation will occur if this impact does occur?

Table 3.0.5 lists Source classes excluded from further study
Marine species have "inconsequential responses" to the source classes
What do they mean by "inconsequential response"? Define that more specifically.

3.9.3.1.1 States - "Fish have been exposed to short-duration, high-intensity signals such as those that might be found near high-frequency sonar, pile driving, or a seismic airgun survey. Such studies

examined short-term effects that could result in death to the exposed fish, as well as hearing loss and long-term consequences. Recent experimental studies have provided additional insight into the issues (e.g., Govoni et al. 2003; McCauley et al. 2003; Popper et al. 2005; Popper et al. 2007; Doksaeter et al. 2009; Kane et al. 2010). "

The very next paragraph 3.9.3.1.2, states "direct injury is unlikely from non-impulse sound sources, such as sonar." Above states that fish may die, have hearing loss and long-term consequences – from sources with "high-frequency sonar." Further explanation is needed distinguishing "sonar" vs. "high-frequency sonar."

3. 3.9.3.1.2.1 Explosions and other Acoustic Sources (Fish)
States the shad species are the only species affected by high-frequency sonar, but "Behavioral reactions and auditory masking if they occurred for some shad species are expected to be transient. Long-term consequences for the population would not be expected." As stated above, some consequences to high-frequency sonar are more severe – death, hearing loss, etc. Further clarification is needed.

4.4.10 Fish (Cumulative Effects) – "Actions discussed in Section 4.3 (Other Actions Analyzed in the Cumulative Impacts Analysis) and Table 4.3-1 are expected to result in injury and mortality that could inhibit species recovery." But right after such statement, another contradicts it:

> "Most potential impacts would be short-term behavioral and physiological responses. Any impacts from the Proposed Action resulting injury or mortality would be to a relatively small number of individuals. No population-level impacts are anticipated."

Actions that could cause mortality and inhibit species recovery are not short term, nor affect small numbers nor affect population levels.

5.4 .1 Mitigation - Most mitigation protection efforts focused on marine mammals and sea turtles, with a few focused on shallow reef habitat. Based on the conclusions for the fishes – there is no need to mitigate for potential losses. The concerns raised about fishes being injured, killed, or behavior patterns disturbed are not specifically addressed. The EIS states that any damage to fish species would be negligible, short term or only to a few specimens – even though some of the supporting research seems to suggest otherwise. Also, when there is not a lot of available research, the conclusion is made that potential effects to the fish species would be negligible as well.

Additional Comments:

1) ES-8. Preferred Alternative. Since the "Transit Corridor" was not previously considered in the open ocean, what was the reason for including this activity now? Further explanation is needed.

2) ES-9. Net Explosive Weight Increase. We are concerned with the impact as it relates to the marine environment, specifically the "underwater explosives." Regardless of how the activity is to be performed in order to minimize the impacts to the marine environment, there will be "effects" as a result of noise and physical disturbance.

2) See ES-26. Mitigation Identification and Implementation. Does the officer who is conducting the training for those individuals that will be trained as "Standing Watch and Serving as Lookouts," have the expertise as to what to look for and how to address any impacts?

3) Greater need for coordination and consultation between the Government of Guam agencies, i.e. respective local and federal natural resource agencies, is highly recommended in order to address all impacts from this activity specifically if the mitigation measures to be used are acceptable.

4) Ensure that the Dept. of the Navy coordinated with the office of the Bureau of Statistics and Plans' Guam Coastal Management Program (GCMP) for a Federal Consistency review in order for GCMP thoroughly review all types of activities associated with the proposed development.

Cumulative and Secondary Impacts:

Resources Analyzed and Impact Summary states: (Page 11, John Van Name, COMPACFLT) presentation.

Section 3.2 Despite increases in criteria air pollutants, changes to air quality would be considered minor and localized; changes to air quality from hazardous air pollutants are not expected to be detectable. However, we are concerned that if hazardous air pollutants can't be detected, then the Navy should find ways to detect all levels of hazardous pollutants, no matter how minor and localized it is, and make everybody know about it.

Furthermore, the Mariana Island Range Complex activities are on-going, however, no feedbacks and or data are being shared with the Government of Guam agencies with regards to the impacts of the activities comparing the expected vs. the current, real and existing status of the environment and its resources.

We appreciate the opportunity to share our comments in response to the request for comment for the Mariana Islands Training and Testing (MITT) Draft EIS/OEIS. Please contact Ms. Amelia F. De Leon GCMP Planner at (671) 475-9669 or myself at Telephone No. (671) 472-4201, if you have any questions regarding our comments.

Sincerely,

LORILEE T. CRISOSTOMO
Director

cc: GEPA
DPR
DoAg
DLM
NOAA/A. Loerzel
Uog m.Lab/D. Burdick
ACOE/R/Winn
Mark Calvo/Office of the Governor

Commonwealth of the Northern Mariana Islands
Division of Historic Preservation
Department of Community & Cultural Affairs
Airport Road
P.O. Box 500090, C.K.
Saipan, MP 96950

TEL: 664-2120-25
FAX: 664-2139

December 12, 2013

Naval Facilities Engineering Command, Pacific
Attention: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, Hi 96860-3134

Subject: Comments on MITT EIS/OEIS

Dear Sir/Madam:

We have reviewed the Cultural Resources section of the MITT DEIS/OEIS and have the following comments.

Most generally, the CNMI's historic and cultural resources are inadequately considered and/or accounted for in the MITT DEIS/OEIS and additional historical and archaeological survey work should be undertaken to preserve and protect these resources.

In addition, the additional testing and training activities proposed under the MITT DEIS/OEIS are as acknowledged simply an extension of the military's activities (both on-going and planned) under the Guam-CNMI Relocation and the MIRC Projects and therefore the "accumulated effects" of the military's activities are inadequately considered and/or accounted for in the MITT DEIS/OEIS.

Moreover, the piecemeal and segmented approach to the military's proposed activities in and near locations registered as National Historical Landmarks as embodied in the DEIS/OEIS are inappropriate and must be properly addressed in the Final Environmental Impact Statement before any Record of Decision is made.

Specifically, on page 3.11-1 under Preferred Alternative (Alternative 1), third to the last paragraph, the DEIS/OEIS mentions conservation measures and procedures identified and described in 2009 Mariana Islands Range Complex Programmatic Agreement.

These conservation measures and procedures should be indicated in this paragraph since it is repeatedly mentioned in this document and is important for the readers to have them readily available.

Third line in the third paragraph under the introduction should read; archaeological resources also include human remains which are sacred and can be viewed as traditional cultural resources.

On page 3.11-2, under Identification, Evaluation, and Treatment of Cultural Resources, numerous laws, acts, and regulations are referenced which is good. However, what these laws, acts, and regulations require of the federal agencies for protection and preservation of cultural resources should be summarized in this section. The third paragraph that briefly states what Section 106 requires of the federal agencies is good.

Beginning in the last sentence of page 3.11-2 to 3.11-3 it talks about regulations and guidelines for submerged historic resources such as Sunken Military Craft Act and Archaeological Research Permit Application on Ships and Aircraft Wrecks, however, they do not indicate what they mean or require.

Some Conventions applicable to submerged cultural resources such as 1982 Convention of the Law of the Sea and 2001 Convention on the Protection of Underwater Cultural Heritage do not provide what they require or mandate. These should be at least briefly summarized like what is stated for NEPA and the National Historic Preservation Act on page 3.11-4 in which an EIS must consider the adverse and beneficial effects of a proposed federal action on historical and cultural resources and Section 106 which requires federal agencies to take into account the effects of an undertaking on historic properties listed or eligible for inclusion to the National Register of Historic Places.

On page 3.11-4 under Data Sources mentions information on cultural resources were derived from a variety of management plans, archaeological and architectural surveys, archaeological testing reports, etc. These documents need citations.

On page 3.11-17 under Saipan, states that the leased pier space consisting about 100 acres is highly developed and any previously existed cultural resources have been disturbed or destroyed and no cultural resources are likely to occur. This may be true to some extent however, there have been many instances in Guam and CNMI where certain places have been disturbed numerous times, but, each time a project takes place in those areas, portions of intact soil layers containing cultural properties are discovered. Therefore, this area should not be totally free of archaeological attention.

Under Known Wrecks, Obstructions, or occurrences (within United States Territorial Waters) on page 3.11-16 previous archival research and literature review indicate that at least 19 submerged historic resources exist within Tinian waters, however only locations of 9 are known leaving 10 locations yet to be determined. For Saipan, at least 51 submerged cultural resources exist around Saipan waters but only the locations of 36 have been determined. That leaves 15 submerged historic resources locations within Saipan waters undetermined. For Rota, at least 12 submerged

cultural resources exist within waters around Rota but only locations of 7 have been identified. That leaves 5 locations undetermined.

Throughout the document it is repeatedly stating that the Navy will routinely avoid locations of known obstructions which include submerged historic resources. The main concern is the locations of submerged cultural resources that have not been determined which trainings and testing may be conducted.

Therefore underwater archaeological survey must be implemented within the waters around Tinian, Saipan, and Rota in an effort to determine the locations of these submerged cultural resources. The results of this underwater survey along with the already known locations of submerged cultural resources will be very important tools for determining safe areas for training and testing programs.

If you have any questions, please call John Palacios at CNMI Historic Preservation Office at (670) 664-2121 or 2125

Sincerely,

LAURA T. OGUMURO
Acting CNMI State Historic Preservation Officer

Commonwealth of the Northern Mariana Islands
Coastal Resources Management
Caller Box 10007 CHRB
Susupe, Saipan, MP 96950
Website: www.crm.gov.mp
Tel (670)664-8300
Fax (670)664-8315

Eloy S. Inos, Governor Jude U. Hofschneider, Lieutenant Governor

December 10, 2013

Naval Facilities Engineering Command, Pacific
Att. MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Hafa Adai,

The Commonwealth of the Northern Mariana Island's (CNMI) Coastal Resources Management Office (CRM) has received and reviewed the Mariana Islands Training and Testing Draft Environmental Impact Statement/Overseas Environmental Impact Statement (DEIS/OEIS).

CNMI's Public Law 15-34 entitled the "Coastal Resources Management Act" grants CRM regulatory authority towards activities within its jurisdictional territory that can impact the coastal resources of the CNMI. It is the CRM Program's mission to maintain each resident's constitutional right to a clean and healthful environment by providing effective interagency collaboration, permitting and enforcement, monitoring, outreach and education, and restoration.

CRM is concerned with the environmental impacts of the proposed training and testing activities on coastal resources. These impacts include: mass wasting and sedimentation as a result of bombing activities on Farallon de Medinilla and the secondary impacts on endangered species, nesting seabirds and nearshore reefs; impacts from military expended materials on water quality, physical and chemical impacts on marine habitats; effects of sonar and torpedo testing on marine mammals; the effects of amphibious landing activities on sea turtle nesting on the beaches of Tinian; impacts of bombing activities on Farallon de Medinilla on seabird nesting colonies; effects of activities on marine vegetation including seagrasses; numerous impacts on coral reefs; impacts on fish populations; impacts on terrestrial species; effects on cultural resources on Farallon de Medinilla that have been ignored; the impacts of restricted

areas on recreational and commercial fishing, transport between islands, and tourism; and the lack of a true cumulative impacts analysis.

CRM has identified serious deficiencies in the DEIS/EIS that need to be addressed. First, there are numerous factual errors and contradictions in the document. Second, the document often fails to draw on the “best available data and information” to support its findings. Third, the military proposes to drastically increase the ordinance used on Farallon de Medinilla; however, the document does not address the near-certain environmental effects of the increase in bombing activities: mass wasting, erosion, sedimentation, and secondary impacts on marine birds and nearshore marine biota. Fourth, claims made about “no effects” in this document contradict claims about similar activities in previous military EIS documents. Finally, the DEIS/EIS repeatedly concludes that military activities in the study area will have "no effects" on the environment, but the DEIS/EIS often fails to support its conclusions with data. The CRM submits the attached general and specific comments in response to the request for review of the DEIS/OEIS.

The CRM has a Coastal Zone Management Act (CZMA) program approved by NOAA. A Federal Consistency Determination (FCD) with respect to the activities outlined in this DEIS/OEIS must be submitted to the CRM for review as mandated by the Coastal Zone Management Act, Section 307 of the CZMA (16 USC § 1456). Any activity by a federal agency that will have reasonably foreseeable coastal effects on any land or water use or natural resource of the coastal zone of the CNMI (the coastal zone meaning every island of the CNMI in their entirety) must be consistent to the maximum extent practicable with the enforceable policies of the CRM’s coastal management program, Section 307 (c) (1) (a), 15 CFR Part 930. CRM expects the DOD to submit a federal consistency determination for the proposed activities included in the DEIS/OEIS at least 90 days prior to the action.

Sincerely,

Ana C. Agulto
Acting Administrator
Coastal Resources Management Office

General comments:

The CNMI is now sovereign over all submerged lands three miles from the mean high tide mark of each of its islands. See Public Law 113–34 (113th Congress). Please analyze how the proposed activities will impact the submerged lands belonging to the CNMI.

With respect to the vessel transit corridor, in Section 2.1 of the DEIS/OEIS it is stated that "*The route depicted in Figure 2.1-1 is a direct route between the MIRC and the HRC, making it a quick and fuel-efficient transit. The depicted transit corridor is notional and may not represent actual routes used. Actual routes navigated are based on a number of factors including, but not limited to, weather, training, and operational requirements; however, the corridor represents the environment potentially impacted by the Proposed Action*". The DEIS/OEIS needs to include the entire area (not a notional line) that could potentially impacted by activities within this corridor which covers any potential route that ships may take. Section 2.1.2 states that the military may "*conduct basic and routine unit level training such as gunnery and sonar training as long as the training does not interfere with the primary objective of reaching their intended destination. Ships also conduct sonar maintenance, which includes active sonar transmissions*". In order to address potential environmental impacts within the transit corridor as a result of these activities, the DEIS/OEIS must include the actual area that could be impacted.

Table 2.8-1 of the DEIS/OEIS gives ordinance use on Farallon de Medinilla (FDM), summarized in Table 1 below.

Table1. Summary of proposed ordinance use on FDM per year (adapted from Table 2.8-1).

Range activity	No action	Alternative 1	Alternative 2
Grenade/mortar	100	600	600
Small caliber	2900	18000	18000
Naval surface fire – NEPM rounds	0	1800	1800
Naval surface fire – explosive rounds	800	1000	1000
Explosive missiles	60	85	85
Explosive rockets	0	2000	2000
Gunnery – small caliber	0	24000	24000
Gunnery – medium caliber	0	94150	94150
Gunnery – explosive medium caliber	21500	17350	17350
Gunnery – explosive large caliber	200	200	200
Bomb – NEPM	2800	2670	2922
Bomb - explosive	2150	6242	6821

Apart from relatively minor differences in numbers for NEPM and explosive bombs, the numbers given for alternative 1 and 2 are identical (Table 1). The DEIS/OEIS needs to provide and consider two true alternatives for activities on FDM.

There are numerous significant errors throughout the document. Some are noted here:

- Several NEPM (non-explosive practice munitions) are shaded in Table 2.8-1, which according to the note in the title indicates they are explosive. Please edit this table to make clear what is explosive and what is not.
- Table 2.8-1 makes it clear that numbers of ordinance given are per year. However elsewhere in the document (eg Table 3.0-22) it is not made clear that figures of ordinance use increases are per year. No mention of time periods is given elsewhere. Please edit the document so that these figures are not misleading by clearly indicating that these figures are per year, not total.
- In comparison to Table 2.8-1, Table 3.0-22 has different names for the different categories of ordinance, and groups some together, making it hard to compare. This deficiency occurs elsewhere throughout the document and needs to be corrected. It would make the DEIS/OEIS less confusing and much easier for review purposes to keep the names the same throughout the document. There is conflicting information between the two tables on what is classed as "explosive" and these mistakes must be corrected.
- The depth at which ship hulks are to be sunk varies from "greater than 6000 ft" (Section 3.3.3.2.2) to "greater than 9842.7 ft" (Section 3.7.3.2.2) to "approximately 10000 ft" (Section 3.8.3.3.2.2). These are greatly different numbers and CRM needs accurate and consistent data in order to comment on potential effects.
- Section 3.6.3.1.2.4 describing Alternative 1 states: "*At FDM, the use of explosive munitions in bombs would increase by a factor of three"* However, in Section 3.10.3.1.1.2, it is stated that for Alternative 1: "*At FDM, the use of explosive munitions in bombs would increase by 98 percent*". This claim of an increase in explosive munitions in bombs of 98% contradicts Table 2.8-1 and Table 3.0-22, which state that explosive bombs would increase from 2150 to 6242 in Alternative 1, as well as Section 3.6.3.1.2.4 which states they would increase by a "*factor of three*". Please correct this error and check the DEIS/OEIS for other misleading statements.

It is exceptionally alarming how many times throughout the DEIS/OEIS that identical effects statements for the no action, alternative 1 and alternative 2 impacts are presented, with little to no analysis or supporting data. It is simply unacceptable that the massive increases in proposed activities will have no additional environmental effects. The DEIS/OEIS does not

adequately assess the potentially significant environmental impacts of the proposal. Examples of these failures to recognize environmental effects are given in the "Specific Comments" section below.

Section 3.0-2 states that the DEIS/OEIS used the "*best available data and information in order to compile the environmental baseline and environmental consequences evaluated in Chapter 3*". This is repeatedly shown to be untrue:

- The DEIS/OEIS includes a map of FDM (Figure 3.6-6) that shows impact areas and seabird colonies, from Lusk et al. (2000). This paper was based on data collected during a 5.5 hour site visit completed in 1996. Seventeen years has since passed since this site visit was made, and the island has been under constant heavy bombardment, as well as other factors which may impact seabird colonies including tropical storms. More recent information is available (helicopter surveys of seabird colonies were completed monthly by the military until 2009, then quarterly since). Therefore the DEIS/OEIS is not based upon the "best information available" and does not adequately assess the potentially significant environmental impacts of the proposal.
- Table 3.0-1 states that Figure 3.10-2 shows "vegetation type" sourced from "Google Earth 5.1". However Figure 3.10-2 actually only shows a map of critical habitat for the Rota White-eye and Mariana Crow on Rota. It does not show vegetation types on Rota or anywhere else in the CNMI.
- Furthermore, Google Earth is not the "best available data" on vegetation, even if the satellite imagery had been included for islands of the CNMI. The US Forest Service has available recent vegetation maps of Saipan, Tinian and Rota. Figure 3.10-3 shows vegetation types and uses this information to assess effects in Guam. Thus the DEIS/OEIS is deficient and fails to adequately assess the potentially significant environmental impacts of the proposal.
- Figure 3.10-4 has a crude comparison of vegetation on FDM using a black and white aerial photograph taken in 1944 with a color satellite image taken more recently. The figure states the more recent image is from 2012. This does not appear to be true. The image is identical to the one that appears in Google Earth and that image dated is 10/10/2003, not 2012. This is 9 years earlier than what is claimed in the figure caption. The Department of Defence (DoD) have been using the island as a firing range for decades, and furthermore have been conducting surveys and monitoring at this location. In the 1999 Final EIS for the Military Training in the Marianas, it is stated in response to the Marianas Audubon Society's comments that "*Photo documentation during the* (seabird) *surveys will be used by comparison to detect significant changes that may occur in vegetation habitat*". However this analysis, to the best of our knowledge, has not been performed, nor has the "photo documentation" even been

presented here. CRM maintains that DoD has not used the "best available data and information" available to describe vegetation change over the years of bombing activities and that the DEIS/OEIS must analyze and present the data and information that it has available.

- There are no benthic habitat maps provided and analyzed for effects on FDM in the DEIS/OEIS, yet such maps are given in other DoD publications such as DoN (2005) (see Figure 3 in the "Marine invertebrates" section below)
- The document does not address impacts on migratory shorebirds. For example. Bristle-thighed Curlews have been observed on FDM (DoD 1999) but these are not mentioned in the current document.

The DEIS/OEIS does not provide any kind of indication on the scheduling of the proposed activities on Saipan, Rota, Tinian and FDM. Accurate information about how often the training exercised are planned for or envisioned, when will they occur, and over what period of time the activities will take place, are essential for properly gauging environmental impacts. It is impossible to evaluate the effects of the proposed activities without having these critical details. For example, Table 2.8-1 gives the number of activities per year of each range activity, but the CNMI Costal Resource Management Office needs to know if these are separate or simultaneous activities for each location (ie what is the total number of activities per location), and the length of time for each activity in each location in order to assess the effects.

Section 3.10.2.1.5 states that bombing on FDM has changed the vegetation from brush and tree canopy cover, especially in the areas where higher levels of bombing activities have occurred. CRM requests that surveys or the data that these conclusions are drawn from be identified and made available for review.

It was concluded in the Military Training in the Marianas FEIS (DoD 1999) that Unai Dankulo and Unai Chulu were not suitable for AAV landings, after evaluation of hydrographic and marine biological surveys conducted by the Navy in 1994 and 1996 determined "*potential impacts to nearshore and barrier reef coral and possible impact damage to the vehicle itself*" (Section 4.2.1.4). Only Unai Babui was deemed suitable for such activities due to environmental concerns. However both Unai Dankulo and Unai Chulu are included in this DEIS/OEIS for AAV landing exercises. CRM questions why these two beaches were ruled out in previous documents but are considered for the same activities here. CRM also questions why the DoD needs to use three different beaches for these landing activities – why they cannot just choose one single beach that would suffer the least amount of environmental impact.

CRM would like to know if all of the “conservation measures specific to Farallon de Medinilla” outlined in the DoD Record of Decision for the Mariana Islands Training Complex have been carried out. For example, has rat eradication taken place? Have Has the Navy conducted density and abundance surveys of the Micronesian Megapode every five years? Has the Navy undertaken any kind of range maintenance on FDM?

Specific comments

Effects of proposed bombing activities on FDM mass wasting, erosion, and sedimentation

FDM is divided into zones: the section to the north of the "no fire line" is designated the "no drop zone". The rest of the island south of the "no fire line" is divided into the "impact zone 1" (inert ordnance only), "impact zone 2" (live/inert ordnance) and "impact zone 3" (live/inert ordnance). The draft DEIS/OEIS states that the no-fire line, firing direction and live fire and inert range boundaries would remain the same as before. Both Alternative 1 and Alternative 2 (Table 2 of this document) include near-identical massive increases in explosive detonations on FDM over the current level of activities (the no action alternative).

CRM is especially concerned with the effects of proposed ordinance use on FDM on mass wasting, vegetation loss, erosion and sedimentation. The DEIS/OEIS describes pollution effects (chemical) but not the physical effects of sedimentation as a result of military activities in the study area. There is no mention of effects of sedimentation on near-shore coral reefs as a result of training activities on land. These effects were mentioned in the Mariana Islands Range Complex Final Environmental Impact Statement/Overseas Environmental Impact Statement (MIRC FEIS/OEIS). These coastal effects must be included in the MITT FEIS/OEIS.

Satellite imagery and oblique photographs show there have been significant changes to the morphology of FDM, apparently through mass wasting along the eastern cliff lines. The land bridge (Figure 1) shows significant signs of mass wasting on the eastern side. The southern end of FDM also shows a recent sea cave collapse (Figure 2). The total loss of land mass on FDM since bombing commenced must be presented.

Ordinance use can cause erosion both directly by creating large holes and indirectly through the destruction of vegetation. Erosion caused by diminished vegetation can potentially have long lasting effects. Once erosion starts occurring, it is very difficult for vegetation to re-establish and curb the effects.

Mass wasting and erosion together can introduce massive amounts of sediments into the surrounding waters. If pushed passed natural thresholds of stress, reef systems can be irreversibly altered by sedimentation. Mass wasting is causing irreversible changes to the size and shape of the island itself. It will have negative consequences for the seabird rookeries that are found on the cliff faces and cliff tops, forcing them further and further into the live fire ranges. There are no ongoing monitoring data to assess the effects of current and planned bombing activities on erosion, sedimentation and mass wasting on FDM mentioned in the DEIS/OEIS. This needs to be addressed in the Final EIS/OEIS.

Section 3.1.2.3 of the Mariana Islands Range Complex Final Environmental Impact Statement (2010) states that "*clear evidence of ordnance impacts exists on cliff tops and faces on certain sections of the island that may contribute to erosion, runoff, and sediment pluming (DoN 2008). Shore bombardment of barren cliffs on the west side of the island may have weakened the exposed limestone and contributed to erosion of the cliffside. The eastern cliffs near Zone 2 (land bridge) are avoided during shore bombardment activities (DoN 2008). Shore bombardment targets involving use of ordnance are located on the cliffs along the western side of the island. The use of explosive material on the surface of the cliffs is subject to control that avoids known seabird rookeries. Areas subject to ordnance use are restricted to prevent disturbance and impacts to new areas. Erosion on the western cliffside is controlled by conservation measures and targeting restrictions that are in effect for ongoing training activities.*

Typhoons are a natural threat to geologic formations on FDM, because they can produce extremely strong winds, torrential rain, high waves, and storm surges, which in turn can cause extensive flooding. Weathering of soils and coastal formations on FDM has resulted from typhoons. The northern two-thirds of the island are nearly separated from the southern third where the island narrows dramatically (Oceandots 2008)."

The DoN (2008) document is listed in the Reference section of the MIRC FEIS/OEIS as the following: "*Department of the Navy (DoN). 2009. 2006, 2007, and 2008 assessment of nearshore marine resources at Farallon de Medinilla, Commonwealth of the Northern Mariana Islands. Prepared by S.H. Smith and D.E. Marx, Naval Facilities Engineering Command, Pearl Harbor, Hawaii. February*." These reports and/or the data used to make these statements must be included in the Final EIS/OEIS. CRM does not have these reports and we request that these be made available to us to evaluate whether the claim that the mass wasting on FDM is actually a result of typhoon damage. Furthermore we request that a study on the effects of explosives munitions use on mass wasting, erosion and sedimentation on FDM be initiated, with CRM's involvement.

The comments by the Environmental Protection Agency (EPA) to the MIRC DEIS/OEIS also addressed the issue of mass wasting, erosion and sedimentation in comment Fed 6.4: *"The DEIS well documents the substantial erosion that is occurring on FDM and acknowledges that bombing is contributing to this impact. It states that most of the existing training location have soil conditions that are degraded from ongoing military use (p. 3.1-23), and that many years of live fire training at the Tarague Beach small arms range has resulted in "severely degraded" geological resources (p.3.1-22). The DEIS concludes that surface soil changes would be minimal (p. ES-16) and that impacts to geological resources would not be significant (p. e.1-23) despite*

the impact assessment criteria that impacts would be significant if the action had the potential to increase erosion by training activities (p. 3.1-1)."

The response to the EPA comment given by the DOD in the MIRC FEIS/OEIS is as follows *"Monthly surveys at FDM have shown that increased erosion is the result of natural causes; storm and wave erosion. Operational changes on FDM, as described in Chapter 2, including reduction of live fire targeting area has reduced the potential for any erosion caused by military activities. Live fire impact area has been reduced from over 100 acres to less than 35 acres, a reduction of approximately two thirds. The discussion in Subchapter 3.1.3.2 for Alternatives 1 and 2 have been revised."*

There are no studies mentioned in the DEIS/OEIS of the effects of bombing activities on erosion and sedimentation of surrounding waters. The "monthly surveys" of erosion on FDM mentioned in the military response to comment FED6-4 in the MIRC FEIS/OEIS are not mentioned anywhere in this current DEIS/OEIS. CRM requests that the "monthly survey" results mentioned in the response to comment FED6-4 (above) should be made available to CRM, to allow us to analyze whether the operational changes that were referred to in the comments response above are effective in minimizing the effects of mass wasting, erosion and sedimentation and bombing on FDM. The MITT FEIS/OEIS must include the results and conclusions of these monthly surveys. The DEIS/OEIS is deficient without this information included and must be revised.

Figure 1. Neck between northern and southern sections of FDM, showing severe cliffline damage. Photo by Shelly Kremer, 2004.

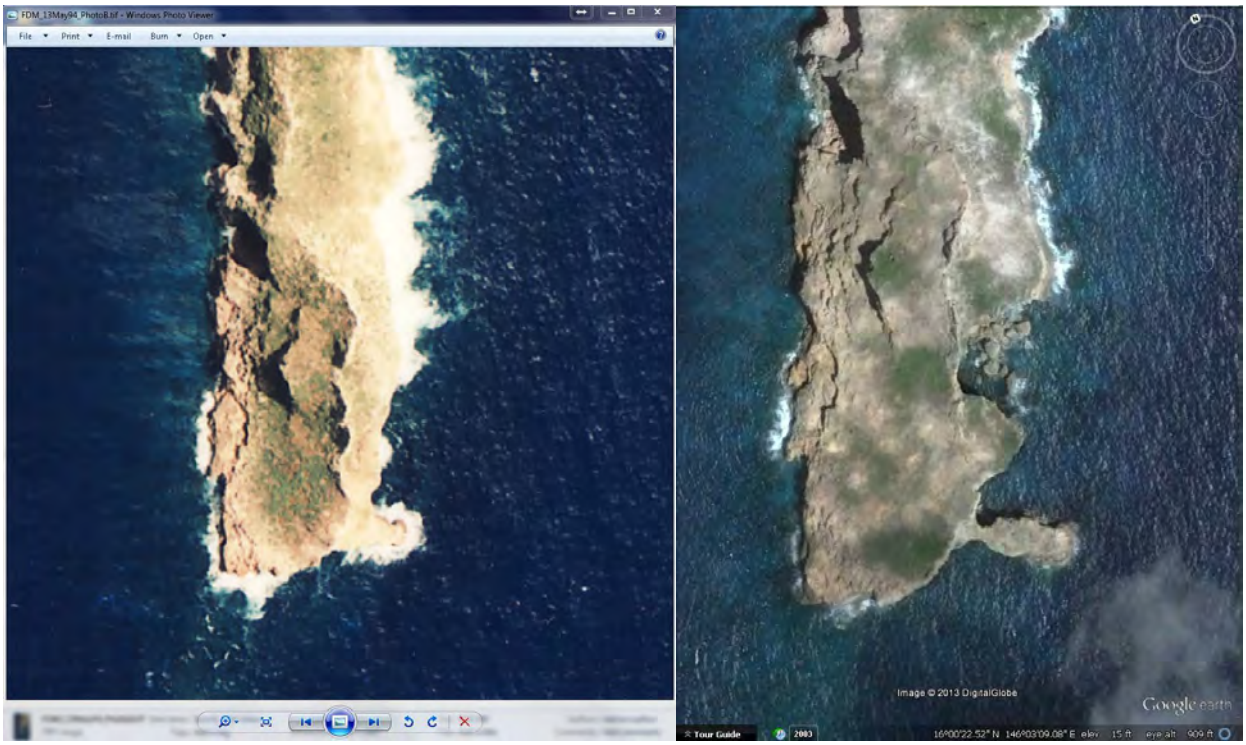

Figure 2. Left: Photo of southern end of FDM in May 1994 (from NOAA data) Right: Photo of southern end of FDM October 2003 (from Google Earth), showing massive changes in island morphology on east side of island.

Effects on water quality

The DEIS/OEIS appears to rely on dilution and settling of contaminants to keep water quality impacts within federal water quality standards. However, the localized effects of such contaminants could adversely affect many forms of marine biota, potentially harming resources utilized by local stakeholders.

Furthermore, the DEIS/OEIS continually mentions that effects to water quality would be short in duration, yet there is no in-depth discussion about possible long-term effects as a results of secondary impacts to the environment, such as sedimentation and bio-accumulation. CRM requests that baseline data and ongoing monitoring be provided in order to assess the localized and long-term effects of water quality contamination on marine biota.

For section 3.1.1.1.1.7 "*Other Contributions to Sediments*", please refer to studies by Denton et al (2010) that show bio-accumulation of toxins such as mercury, arsenic and PCBs in fish caught in the Saipan Lagoon.

In Section 3.1.3.1.5.2 "*Unexploded Ordnance*", it is expected that biological processes would degrade broken munitions. The DEIS/OEIS does not address the concern of accumulation of bio-toxins up the food chain and is therefore inadequately considers potential environmental impacts of the proposed activities. .

The DEIS/OEIS cites several studies of marine dump sites and the effects of unexploded ordinance on these environments, but none of the studies are located within the waters surrounding the CNMI. There are a number of marine dump sites within the CNMI. Denton et al. (2010) highlights the need for testing of possible contamination of nearshore fisheries from freshwater runoff originating from formerly-used defense sites. CRM requests that these studies be undertaken to assess the effects of past and proposed military activities on fish and other marine biota.

Throughout this section, emphasis is placed on how quickly chemicals will bind to sediments, removing them from the water column. Although removed from the water column, the presence of toxins in the sediments makes them readily available to primary consumers. Assuming ecological systems remain intact, these chemicals should proceed to increase in concentration throughout higher orders of the food chain.

Section 3.1.3.2.4 states in several places that toxic chemicals will disperse quickly due to the actions of currents and biological processes. Although this is partially true, it is also true that the aforementioned variables may act to retain these reactive chemicals within the water column.

In Section 3.1.3.3.7.1 "*Solid-Fuel Propellants*", Aluminum oxide has adverse effects on marine biota (Sadiq et al 2011). CRM requests that the EIS addresses what concentrations of this chemical will leach into the marine environment.

Section 3.3.3.2.2 describes military expended materials. Alternative 1 cites 261 482 military expended materials, including two ship hulks and 10 845 decelerators/parachutes. These materials can have impacts through direct damage, UXO threats, and leaching of chemicals, fuels and trace metals into the marine environment. Parachutes can cause physical damage. Expended materials become marine debris and can cause a great deal of damage to coral reefs and other bottom-dwelling organisms if they are left to move around on the ocean floor. There are several studies cited that discuss leaching from ordinance in marine waters but these are in temperate or cold climates. Only one study cited in marine environments (Hawaii Undersea Military Munitions Assessment 2010) but it was stated that the methodology used was inadequate. CRM requests that the EIS considers potential impacts direct damage, UXO threats, and leaching, and uses studies with adequate methodology conducted in CNMI waters, or at least tropical waters.

The DEIS/OEIS details increases in troop activities on Tinian. The DEIS/OEIS must explain how wastewater in the northern parts of Tinian will be addressed to ensure that the impacts on groundwater are minimized.

Effects on marine habitats

Section 3.3 repeatedly states that there will be little to no impact on marine habitats because military activities make up less than 1% of the study area. One percent of the study area equals 9846 square nautical miles (or 13 039 square miles, to use a more standard measurement), which is still a very large area. Furthermore, this is a misleading statistic, because marine habitats that provide valuable resources, such as coral reefs or seagrass beds, make up only a small percentage of the study area, whereas the majority of the study area is offshore. This is a poor argument to use as to why reefs or other marine habitats will not be heavily impacted. The DIES/OEIS must provide details on the impacts on the important marine habitats that are found within the study area are likely to be impacted, not just repeat that overall less than 1% of the study area will be impacted.

Section 3.3 states that large military expended materials can serve as artificial reefs. Although these can serve as an ecosystem resource for providing shelter to fish, these should not be considered equal value as natural marine habitats. These artificial structures would house less biodiversity than a natural reef, and do not conduct important biogeochemical processes.

Smaller military expended materials, such as parachutes, can cause damage to marine habitats. Section 3.3-26 assumes that materials will most likely be buried in sediment. However less dense objects may shift around with current and waves, and cause physical damage to marine habitats.

Section 3.3.3.1.1.1 states that detonations may occur in 6 to 100 ft of water. The DEIS/OEIS must explain where these detonations may occur and whether these areas overlap with any marine habitats.

Section 3.3.3.1.2 literally states near-bottom explosions in non-living essential fish habitat areas (EFHA) will be permanent but minimal. Permanent impacts should not be acceptable.

Sections 3.3.3.2.2.1, 3.3.3.2.2.2 and 3.3.3.2.2.3 state that monitoring of FDM has occurred since 1999, which determined insignificant impacts from military activities. The DEIS/OEIS must include the names of the reports for this monitoring and describe the methods and results that are included in these monitoring activities.

Section 3.3 refers to high-energy surf disturbance that supposedly takes place at the Tinian beaches. The west-facing beaches are considered to be relatively low-energy. The assertion that the activities mentioned in this section will have no greater impact than surf disturbance on these beaches is therefore questionable. CRM requests that the DoD undertake new or cite existing studies to determine the effects of surf disturbance on these beaches before claiming that these activities are relatively minor in effect.

Section 3.3 does not cover the impacts of increased levels of sedimentation from the proposed bombing activities on FDM. The DEIS/OEIS must therefore be revised to include an analysis of sedimentation from bombing activities at FDM on surrounding marine habitats.

More detailed information is required on where seafloor devices will be deployed and if this overlaps with any marine habitats.

Effects on marine mammals

Operating sonar throughout the training area will have negative impact on marine mammals that either migrate through or locally reside within the proposed training site (Parsons et al. 2000). Avoidance of such a wide area would likely drive such creatures further away from the area. Live fire sounds can harm marine mammals. Torpedoes can directly target marine mammals. CRM considers this to be a negative impact to its surrounding marine environments. CRM requests that monitoring be undertaken to determine the impacts of the various activities on marine mammals.

The DEIS/OEIS does not address potential impacts of proposed ship movements in the transit corridor and sonar testing on marine mammals.

Effects on sea turtles

Section 3.4 of the DEIS/OEIS does not discuss effects on nesting sea turtles on the beaches of Tinian as a result of amphibious landings. This is a serious omission, since such effects were discussed in detail in previous EIS documents that cover very similar activities, such as the Military Training in the Marianas Final EIS (DoD 1999), and the MIRC FEIS/OEIS (DoD 2010).

The Green Sea Turtle (*Chelonia mydas*) is listed as "threatened or endangered" under the CNMI DFW regulations. Green Sea turtles use the areas offshore Tinian for swimming, foraging in seagrass and algae areas (Kolinski et al. 2004) and nest on Tinian beaches including Unai Chulu, Unai Babui and Unai Dangkolo (Kultz et al. 1999). Nests are visible only for a very short time after initial egg laying. The incubation period for the green sea turtle is around 62 days. However the high tide and wind action on the beach will cover up any tracks very quickly, within a few days.

The DEIS/OEIS states that a search of the beach will take place immediately prior to (maximum of six hours) amphibious landings will be made to detect nests. This is not enough to ensure that there are no nests on the beach. Only very recently excavated nests will be visible. It will not be possible to detect nests older than a day or two just by searching the beach six hours prior to landing activities. Daily beach monitoring over at least 60 days prior to the beach landing activities would be required to ensure that all nests are detected.

Driving on the beach causes sand compaction and the creation of tire ruts (NMFS and USFWS 1998). Heavy vehicles driving over nests can crush eggs or hatchlings (NMFS and USFWS 1998). Mann (1977) showed that sand compaction from driving over a nest can decrease nesting success and kill hatchlings. Driven beaches have higher percentages of false crawls and lower incubation temperatures, possibly resulting in a lower percentage of female hatchlings (Nester 2006). Hosier (1981) and Lamont *et al*. (2002) found that tire ruts could significantly affect a turtle hatchling's ability to reach the ocean. Hatchlings trapped in tire ruts that are usually oriented parallel to the ocean become exhausted and are exposed to predators (NMFS and USFWS 1998).

Some of these negative effects have been acknowledged in previous military EIS documents for Tinian. The Final EIS for Military Training in the Marianas states that for LCACs parked on the beaches of Tinian "*compaction of the sand could make exit from the nests difficult for hatchlings. Offloaded vehicles driving across the beach may crush turtle's nests or leave deep tire track ruts that serve as physical barriers to hatchlings crossing the beach*". The DoD must explain why these activities that were acknowledged to have serious negative impacts on sea turtle nests on the beaches of Tinian in previous EIS documents are assumed to have no effects this time around, when the activities are the almost the same.

If the activities occur at night, female turtles that approach the beach to nest during the activity may be disoriented and head inland, dying during daylight from heat exhaustion (NMFS and USFWS 1998). Hatchlings can also be disoriented and misdirected by lights at night, and could fail to reach the ocean (NMFS and USFWS 1998). The DEIS/OEIS does not specify if the activities will occur during the day or at nighttime. The document must include whether activities will occur at night, and if they do, how they will avoid impacting females approaching the beach to lay eggs and hatchlings trying to reach the ocean.

Driving on Tinian beaches may have secondary effects on sea turtle nesting. It can cause erosion, damage beach vegetation, and affect the beach's future suitability for providing nesting habitat by compacting the sand. Driving on beaches is against the CRM's recent "Walk it, don't drive it" campaign to prevent vehicle access on beaches. The secondary effects of vehicle activity on beaches must be described and minimized.

The DEIS/OEIS does not explain how many boats will be involved per mission or how many times they will beach during each mission. This information must be included to understand the impacts of the proposed activities on sea turtle nests.

Effects on marine birds

The following species are listed in Section 3.6 as nesting on FDM: White Tern, Black Noddy, Brown Noddy, Masked Booby (the largest breeding colony in the Mariana Islands), Red-footed Booby, Brown Booby and Great Frigatebird. However, this is based on data collected 17 years ago (1996) and was collected over a very short period (5.5 hours) (Lusk et al. 2000). Likewise, the information on nesting areas in Figure 3.6.6 was also based on data collected 17 years ago over a 5.5 hour period (Lusk et al. 2000). New land-based seabird nesting colony surveys need to be conducted across the island to determine where the nesting colonies are now and how they have been affected by the bombing activities. If one has been completed recently by the DoD or contractors, they need to make this available for review by government agencies. This lack of up-to-date data needs to be addressed before impacts on marine birds on FDM can be addressed.

The DOD claims that the three ESA-listed species Newell's Shearwater, Hawaiian Petrel and Short-tailed Albatross do not occur in or around FDM, but do not state the last time a comprehensive seabird survey of FDM and its surrounding waters was performed. The military need to cite the source of their determination for the absence of this species, and if it has not been performed recently, perform a new comprehensive land-based and sea-based survey of FDM and surrounding waters to determine whether the three ESA-listed species use these areas

From 1995 to 2009, monthly surveys of three booby species and the Great Frigatebird took place from a helicopter. After 2009 surveys were made every three months. These surveys do not include the other nesting seabird species, which are presumably too small to be surveyed from helicopter. No monitoring of other seabird species on or around FDM has therefore occurred. The military need to perform ongoing monitoring of all marine bird species, not just the three booby species and the Great Frigatebird.

Figures 3.6-7, 3.6-8 and 3.6-9 show the number of masked boobies, red-footed boobies, and brown boobies, respectively, from helicopter-based surveys from October 1995 to April 2012. The DEIS/OEIS does not include any statistical analyses of these data, and yet the DOD has concluded, presumably just by glancing at these graphs, that there is no negative effect of bombing on booby numbers, and furthermore that increasing the amounts of bombing three-fold will not have any additional effects on booby numbers. The DOD has not compared these data with surveys on nearby seabird colonies to evaluate relative effects of bombings. An independent biostatistician needs to perform statistical analysis of the booby data to determine if there are any temporal trends or patterns related to bombing activities on FDM.

The document states that Great Frigatebirds were included in the monthly/quarterly surveys, but no data on this species is given. Please present and analyze the data collected on Great Frigatebirds.

The DEIS/OEIS claims that the increased bombings "*will not result in a significant adverse effect on populations of the great frigatebird, masked booby or other marine bird species*". This is unacceptable for the following reasons:

a) the DoD has not carried out any analysis of the 1995 to 2012 booby survey data
b) the DoD has not even presented any long-term monitoring data on other marine bird species other than for the three booby species
c) other than the three booby species and the Great Frigatebird, other marine bird species were not even monitored
d) the DoD is considering "population" as the global population, not the Mariana Islands populations. Wildlife and Fisheries, 50 CFR § 21.3 (2013) defines "population" "*as used in §21.15 means any group of distinct, coexisting, conspecific individuals, whose breeding site fidelity, migration routes, and wintering areas are temporally and spatially stable, sufficiently distinct geographically (at some time of the year) and adequately described so that the population can be effectively monitored to discern change in status*". Effects on species must consider the Mariana Islands populations, not global populations of these species. FDM is home to the most important Masked Booby nesting colony in the Mariana Islands, as well as one of only two breeding locations for the Great Frigatebird in the Mariana Islands (DoD 1999). The suggestion that the current and increased levels of bombing activities on FDM would have no significant adverse effect on this population is absurd.
e) the new activities will include up to 3 times as much explosive ordinance use per year than previous levels, therefore the impacts will be a minimum of 3 times greater. The effects of past levels of ordinance use cannot be extrapolated to infer effects of future levels of ordinance use
f) the DoD has not presented any current land-based survey data on the species nesting on FDM, nor the locations of their nesting colonies. A 17-year old 5.5-hour site visit (Lusk et al. 2000) is not sufficient and is not up to date.
g) the secondary impacts of bombing activities (changes to vegetation, erosion issues) have also not been addressed anywhere in the document.

Effects on marine vegetation

Section 3.7 repeatedly states impacts to marine vegetation (including seagrasses) from increased turbidity would be minor. However, there are also potential impacts from vessel, anchor, or propeller strikes to seagrass beds. These actions could cause more serious damage through the uprooting of seagrass, with a much longer recovery period. The section even cites a study by Dawes et al. (1997) which reported recovery times of up to 10 years. A plan must be put into place to identify and address any serious damage that may occur, survey the recovery of marine vegetation, and provide mitigation for damage to seagrass beds.

The DEIS/OEIS repeatedly states the military will ensure prevention of the introduction of invasive species, and will provide control measures if this does occur. Is there information or examples of the military enforcing this practice with current and past military activities to prevent establishment of marine invasive species? Is there a track record that shows none have been introduced so far?

Sections 3.7.3.2.2.2 and 3.7.3.2.2.3 state that small debris will be colonized by marine vegetation. However, small debris will mostly shift around from current and wave action, making it unsuitable for colonization. This will contribute to marine debris, pollution and physical damage of shallow water habitats.

A detailed map is needed to illustrate what military activities will overlap with marine vegetation areas to better understand potential impacts.

Section 3.7.3.2.2 states that increases in military expended materials for Alternatives 1 and 2 (Alternative 2 will have a 230% increase) will have no impact compared with the No Action alternative. How can such an increase not have a difference in impact?

Section 3.7.3.2.3 mentions conducting precision mapping exercises with a target radius of 100 yards. CRM requests that a description or map be included to illustrate where these exercises will take place, as well as an indication of whether they overlap with any marine vegetation or habitats.

Effects on marine invertebrates

In the Marine Invertebrates synopsis (Section 2.8) it is stated that invertebrate critical habitat does not overlap with the study area. However the National Marine Fisheries Service (NMFS) is still weighing the decisions for Endangered Species Act (ESA) listing of corals, which will not be released until mid-2014. If potential coral species are listed as ESA, NMFS will be required to assign critical habitats, which could potentially overlap with the study area.

A detailed habitat map, including the marine habitats around FDM, should be provided to illustrate overlap of military activities with areas inhabited by marine invertebrates to properly assess impacts. A map was included in the DoN 2005 report entitled "Marine Resources Assessment for the Marianas Operating Area" (Figure 3, below). This information is available to the military, as it was included in the DoN (2005) report, so it should be included here.

Sections 3.8.3.1.2.1-3 state that for the no action alternative, Alternative 1 and Alternative 2, surveys will be conducted for small vessels to plan entry routes for beach landings, but that this will not be required for small boats. Surveys need to be conducted for all amphibious landings and training activities to prevent damage to reefs, regardless of the size and type of boat.

A plan needs to be in place that will assess and monitor any physical damage incurred on coral reefs.

Regarding the descriptions of coral species listed or proposed to be listed as threatened or endangered under the ESA:

In sections 3.8.2.3.3 to 3.8.2.42.3 coral populations and abundances reported in the DEIS/OEIS come from Veron (2000), a coral identification guide in which coral abundances are not derived from systematic coral reef surveys but instead on the author's "*general impressions, impressions that may mislead the reader in any one particular place*" (Veron 2000). All reef habitats in the Study Area need to be surveyed to determine the presence, distribution, and abundance of all coral species listed or proposed to be listed as threatened or endangered under the ESA.

The DEIS/OEIS states that NMFS considers physical impact by humans as a low threat for corals. However, the activities proposed include heavy use that can cause heavy impacts to reefs or other marine habitats. This is a misleading statement to use as an argument for military activities having low impact.

Figure 2-12b. Nearshore benthic habitats of the Marianas MRA study area, Farallon de Medinilla: Structure. Coral cover ranges from 10 to 50%. Source data: NCCOS/NOAA (2005).

Figure 3. Nearshore benthic habitat map of FDM, taken from DoN (2005)

Sections 3.8.2.3.4 to 3.8.2.42.4: Predator-Prey Interactions

The descriptions of predator-prey interactions for the listed species are inconsistent and incomplete. For instance, although there are over fifty species of fish known to feed on scleractinian corals in the region (over a dozen of which are known to feed on *Acropora* spp. corals; reviewed in Rotjan and Lewis 2008), corallivorous fishes are scarcely mentioned in the descriptions of predator-prey interactions and not at all for the acroporid corals.

Section 3.8.3.1.1: Impacts from sonar and other active acoustic sources.

For all scenarios (No-action alternative, Alternative 1, and Alternative 2), the DEIS/OEIS states "*Non-impulse sounds may impact individual marine invertebrates and groups of marine invertebrates close to a sound source, but they are unlikely to impact populations or subpopulations*". Without knowledge of a species distribution, abundance, and patterns of connectivity, it is impossible to know if impacts on individuals and groups will adversely affect populations or subpopulations.

Under all scenarios, the DEIS/OEIS claims that sonar and other active acoustic sources associated with testing and training activities "*may affect, but are not likely to adversely affect, any of the coral species currently proposed for ESA listing*". Overall, there is not enough information provided on the exact locations of proposed training and testing activities, the distribution and dynamics of the individual coral species in the study area, or the effects of chronic and acute acoustic stressors on marine invertebrates in general, to support this conclusion.

Furthermore, under Alternative 1 and Alternative 2, the DEIS/OEIS correctly states that "*Non-intermittent noise from testing activities (e.g., vessel noise) could mask reef noise. If this noise source overlapped with the larval settlement period, recruitment of larvae onto a reef habitat may be altered*". Disruptions in coral recruitment processes could result in population declines and shifts in community composition (Hughes and Tanner 2000), which is clearly inconsistent with a conclusion of no adverse effects of active acoustic sources on the coral species proposed for ESA listing. Military testing and training activities that may mask reef noise or otherwise create noise pollution in the vicinity of coral reefs should be limited around annual coral mass spawning events.

The impacts of sonar and other active acoustic sources on non-coral benthic and pelagic marine invertebrates are not discussed at all.

Section 3.8.3.1.2 Impacts from explosives and other impulsive sources

Summary of activities:

- Under all scenarios, marine invertebrates would be exposed to "*explosions and underwater impulse sounds from weapons firing, launch, and non-explosive impacts during training activities*".
- The number of explosives used during training activities would be 1,594 under the No Action Alternative, 10,006 under Alternative 1, and 10,284 under Alternative 2. Up to 16% of these detonations could occur within 12nm of shore and under the No Action Alternative, 50 detonations a year could occur anywhere in the study area including Mariana littoral zones (nearshore shallow areas below high tide line). This number increases to 94 in Alternative 1 and "*would increase*" further under Alternative 2.
- Under Alternative 1, training activities would involve the use of 6,805 high-explosives >3nm from shore. Under Alternative 2 training activities would involve 8,335 high-explosives, "*all of which could occur throughout the study area*."

Throughout this section, the DEIS/OEIS states that the vast majority of explosions would occur >12nm from shore and the percentage of area affected would be small (< 1% of the total Study Area). These statements, designed to underplay the potential impact of explosive detonations on coral reefs and other benthic and pelagic marine invertebrate communities, are misleading and should be removed. Given the large number of total explosions (especially under Alternatives 1 and 2), even a relatively few detonations in the vicinity of sensitive areas such as coral reefs could have substantial and long lasting population and ecosystem level impacts (Precht et al. 2001; Fox and Caldwell 2006). A more useful statistic would be the proportion of coral reef habitat in the study area affected.

Thorough biological surveys need to be conducted in order to accurately assess the potential impact of explosive detonations on corals and other benthic and pelagic marine invertebrate communities. Detonations should not occur on or near shallow hard bottom or coral reef habitats due to potential negative impacts on coral species listed or proposed to be listed as threatened or endangered under the ESA and their likely critical habitat as well as the potential for extremely prolonged to absent recovery of these habitats and communities.

Under the No Action Alternative and Alternative 1, the DEIS/OEIS states that "*explosives and impulse sounds may impact individual marine invertebrates and groups of marine invertebrates, but they are unlikely to impact populations or subpopulation*." Without knowledge of a species distribution, abundance, and patterns of connectivity, it is impossible to know if impacts on individuals and groups will adversely affect populations or subpopulations.

Section 3.8.3.1.2.1 states that 84% of explosives will be detonated 12 nm offshore under the no action alternative, and Sections 3.8.3.1.2.2 and 3.8.3.1.2.3 states that 94% of explosives will be detonated 12 nm offshore under the Alternatives 1 and 2, respectively. The EIS/OEIS needs to indicate where the other 16% or 6% will be used. Also it is stated that detonations can occur

anywhere in the Mariana littoral zone, but then says will only occur in mine neutralization sites. These contradictions need to be addressed.

Population-level impacts on near-shore areas, which according to the DEIS/OEIS are possible under Alternative 2, should not be acceptable.

Under all scenarios, the DEIS/OEIS claims that explosions and underwater impulse sounds associated with testing and training activities "may affect, but are not likely to adversely affect, any of the coral species currently proposed for ESA listing." Overall, there is not enough information provided on the exact locations of proposed training and testing activities, the distribution and dynamics of the individual coral species in the study area, or on the effects of chronic and acute acoustic stressors on marine invertebrates in general, to support this conclusion.

In Section 3.8.3.3 "*Physical Disturbance and Strike Stressors*", direct impacts from explosives including bombs, missiles, and rockets should be included in this section, and not merely addressed in terms of acoustics stress expended materials.

For Sections 3.8.3.1.2.2 and 3.8.3.3.1.2, these activities should not take place during the spawning periods for corals or soft corals.

In Section 3.8.3.3.1 "Impacts from Vessels and In-Water Devices", on p. 3.8-62 the DEIS/OEIS states "*information on the frequency of vessel operations in shallow water is not adequate to support a specific risk assessment*." CRM does not find this acceptable. More information needs to be provided on the frequency and locations of shallow water training and testing operations.

Amphibious assaults and amphibious raids are proposed for Una Babui and Una Chulu, in the northwest of Tinian and Unai Dankulo in the northeast of Tinian. These activities would occur a total of six times annually under the No Action Alternative (4 assaults and 2 raids) and twelve times annually under Alternatives 1 and 2 (6 assaults and 6 raids). The near shore areas associated with these beaches are characterized by medium to medium-high habitat complexity and relatively high coral cover and diversity (Brainard et al. 2012). Baseline biological surveys need to be conducted in these areas to determine the presence an abundance of the coral species proposed for listing under the ESA. Amphibious assaults and raids should not occur in areas where these species are present or during annual coral spawning events. Amphibious landings on the three beaches would inevitably damage the fringing reefs, by physically making contact and breaking coral, and by wash from engine propellers, even if landings are made at high tide. Near shore areas used for amphibious assaults and raids need to be monitored for acute and long term effects of increased turbidity, propeller wash, incidental strikes and other physical damage caused by vessels, bottom-crawling unmanned underwater vehicles and towed devices.

Throughout this section, the DEIS states, "*The impact of vessels and in-water devices on marine invertebrates would be inconsequential because: (1) the area exposed to the stressor amounts to a small portion of each vessel's and in-water device's footprint, and is extremely small relative to most marine invertebrates' ranges; (2) the frequency of activities involving the stressor is low such that few individuals could be exposed to more than one event; and (3) exposures would be localized, temporary, and would cease with the conclusion of the activity*".

- In regards to point (1): Alone, the portion of each vessel's and in-water device's footprint that may cause damage is a meaningless metric when trying to assess the potential impact on coral reefs and other invertebrate communities. To determine the actual area that may be impacted by vessels and in-water devices, more information needs to be provided on the size of all vessels and in-water devices as well as the frequency and locations of operations.
- In regards to points (2) and (3): Amphibious raids and assaults may occur up to twelve times annually on three beaches/areas in Tinian known to have high coral cover and medium to medium-high habitat complexity (Brainard et al. 2012). Depending on the magnitude (number and size of vessels and in-water devices) and exact locations of these operations, substantial and long-lasting damage could occur to coral reef communities.

The "Military Training in the Marianas Final EIS" (DoD 1999) states that "*the marine survey conducted during LCAC operations at Unai Chulu in late March 1999 determined that the air-cushioned landing craft does not impact coral at this beach's shallow nearshore depths*". However this claim is contradicted by another DoD publication entitled " Marine Resources Assessment for the Marianas Training Area" (DoN 2005). On Page 2-36 of this document, it is stated that: "*The Landing Craft, Air Cushion (LCAC) TT99 training operations at Unai Chulu impacted reef organisms found within the reef flat (Marine Research Consultants 1999). Several sea cucumbers were displaced, algae thalli were broken, and head corals scraped and broken from the seafloor. Brief sedimentation occurred as a result of these LCAC operations (Marine Research Consultants 1999), and the use of Assault Amphibian Vehicles at Unai Babui may also have impacted corals on the reef flat (DoN 1998).*" Furthermore it states that some of these impacts were permanent. This is a serious contradiction and calls into question the DoD's repeated assertions in Section 3.8 that amphibious landings will not cause harm to marine invertebrates.

Under all scenarios, the DEIS claims that physical disturbances and strike stressors from vessels and in-water devices "*may affect, but are not likely to adversely affect, any of the coral species currently proposed for ESA listing*". Overall, there is not enough information provided on the exact locations and frequency of proposed shallow water activities, the area of reef habitat

potentially impacted, or on the distribution and dynamics of the individual coral species in the study area to support this conclusion.

Effects on fish populations

For Section 3.9.3.1.1.1 "*Direct Injury Explosives and Other Acoustic Sources*", **i**f the proposed plan is imposed, CRM requests that fish killed as a result of training activities are collected for sampling. This would provide local agencies with useful baseline data on species diversity and abundance within the affected areas.

The document also states that the number of fish killed is also dependent on fish density within the training area. To ensure the well-being of fish stocks of the CNMI, CRM requests that studies be undertaken to examine islands within the training area that naturally have low densities of fish. Alteration of training sites would provide the people of the CNMI with a sustainable fishery population, especially in terms of fish connectivity.

In Section 3.9.3.1 "Impacts from sonar and other active sources", the DEIS/OEIS states that "*Long-term consequences for fish populations due to exposure to mid-frequency sonar and other active acoustic sources are not expected*". These conclusions are relative to the scale and duration of training within the proposed area. An increase in training activities would result in an increase to exposure to sonar that could affect individual fish as well as fish populations.

In Section 3.9.1.2.7 states that "*Overall, long-term consequences for individual fish are unlikely in most cases because acoustic exposures are intermittent and unlikely to repeat over short periods*. The DEIS/OEIS states that exposure to vessel noises may cause fish heart rates and stress levels to increase. If training activities happen to coincide with fish spawning periods, larval stocks may be secondarily affected, creating longer-term effects.

In Section 3.9.3.1.3 "Impacts from Explosives and Other Impulsive Sound Sources; Explosives", the document states that sounds produced by explosions are intensified in areas of hard-substrate. Areas of proposed training are composed mostly of hard-bottom, thus the effects to fish populations would also be greater.

For Section 3.9.3.3.2 "*Impacts from Military Expended Materials; Bombs, Missiles, and Rockets*", CRM questions why statistical modelling wasn't conducted. In the lack of quantifiable data, statistical modelling is the next tool in generating estimates of mortality as a result of the proposed training exercises.

In Section 3.9.3.4.2 "*Impacts from decelerators/parachutes*" the number of parachutes released is a concern. The DEIS/OEIS states that decelerators/parachutes are rare. But the number of expended parachutes would amount to greater than 5,000, which could cause hazards to fish populations.

In Section 3.9.3.6.2 “Explosive Byproducts and Unexploded Ordnance”, shouldn’t current models be presented for proposed training areas to reduce the amount of potential entanglements as a result of equipment malfunction?

Finally, Section 3.9.4 “*Summary of Potential Impacts on Fish*” states that “*Navy research and monitoring efforts include data collection through conducting long-term studies in areas of Navy activity, occurrence surveys over large geographic areas, biopsy of animals occurring in areas of Navy activity, and tagging studies where animals are exposed to Navy stressors. These efforts are intended to contribute to the overall understanding of what impacts may be occurring overall to animals in these areas*”. The DEIS/OEIS does not state where these studies occurred, and whether they were in the study area. CRM requests that these studies be cited and made available for review.

Effects on terrestrial species and their habitats

Section 3 does not clearly state which federally and locally listed endangered or threatened species occur within the study area or existing or proposed military lease areas within the study area. Section 3 also does not contain a current list of Migratory Bird Treaty Act (MBTA)-listed terrestrial birds within the study area or military lease areas. CRM requests a table be included for reference so that effects can adequately be evaluated. CRM also requests the local CNMI threatened or endangered species status be included.

Table 3.10-5 doesn't list the non-ESA listed bird species that are known to occur on FDM (Micronesian Starling, White-throated Ground Dove) and Rota (numerous).

Section 3.10.2.3.9.8 states that Nightingale reed warblers were detected in the Saipan Marpi Manover area (Craig 1992). This publication is 21 years old, and the survey itself was completed during 1988-1991, between 22 and 25 years ago. The DoD needs to use more recent data. If no data are available, the DoD needs to complete a new survey.

In Section 3.10.2.2.1.3 and 3.10.2.2.1.4, 3.10.2.4.1, 3.10.2.4.2, and 3.10.2.2.4.4, there are no survey results for terrestrial partulid snails, lizards, butterflies or their host plants, or other invertebrates on FDM. Two skinks were reported (2.10.2.2.4.3) however this appears to be incidental sightings not comprehensive surveys. Table 3.10-3 lists the White-throated Ground Dove and Micronesian Starling as the only native terrestrial bird species on FDM. However this was based on a 5.5 hour 1996 visit (Lusk et al. 2000). There are no more recent land-based bird surveys cited. A thorough terrestrial wildlife survey needs to be completed before effects on terrestrial species can be assessed. FDM has not been recently surveyed for terrestrial species. The island of FDM has caves but there is no information to show whether or not the Mariana Swiftlet or Pacific Sheath-tailed Bat are found in these caves. CRM requests that a thorough terrestrial species survey be carried out in order to determine which federally and locally listed endangered or threatened species, MBTA-listed species, and USFWS-listed birds of conservation concern are present on the island. This should include a survey of caves for the endangered Mariana Swiftlet and Pacific Sheath-tailed Bat, as well as surveys on terrestrial lizards, snails and insects.

Section 3.10.3.1.1.1 and 3.10.2.1.1.2 claims that "*terrestrial bird species do not likely breed on FDM*" but offers no evidence to support this claim, nor why this apparently contradicts previous surveys that found both the White-throated Ground Dove and Micronesian Starling on FDM in 1996 (Lusk et al 2000). Furthermore, there are no more recent terrestrial bird surveys available to support or refute this claim. The DoD needs to complete and make available terrestrial bird surveys on FDM in order to determine whether or not terrestrial bird species breed on FDM. They cannot possibly conclude effects on these birds without doing so.

The Micronesian Megapode (*Megapodius laperouse laperouse*) and Mariana Fruit Bat (*Pteropus mariannus mariannus)* is listed as "threatened or endangered" under the CNMI DFW regulations. Alternative 1 states that explosives may produce noise and weapons firing may affect and are likely to adversely affect the Micronesian Megapode and Mariana Fruit Bat on FDM. Section 3.10.3.1.1.2 claims that exposure to Micronesian Megapodes and Mariana Fruit Bats are expected to increase under Alternative 1, but that "the expected impacts on any individual bird would remain the same for all three alternatives". This is illogical. Increased explosives to the levels proposed in the DEIS/OEIS would both increase the number of individuals exposed AND increase the level of exposure to each individual.

The DEIS/OEIS does not contain an up-to-date map of Micronesian Megapode sightings. This information is available as it was included in the Joint Region Marianas (2012) INRMP (Figure 4), the data themselves were sourced from NAVFACPAC.

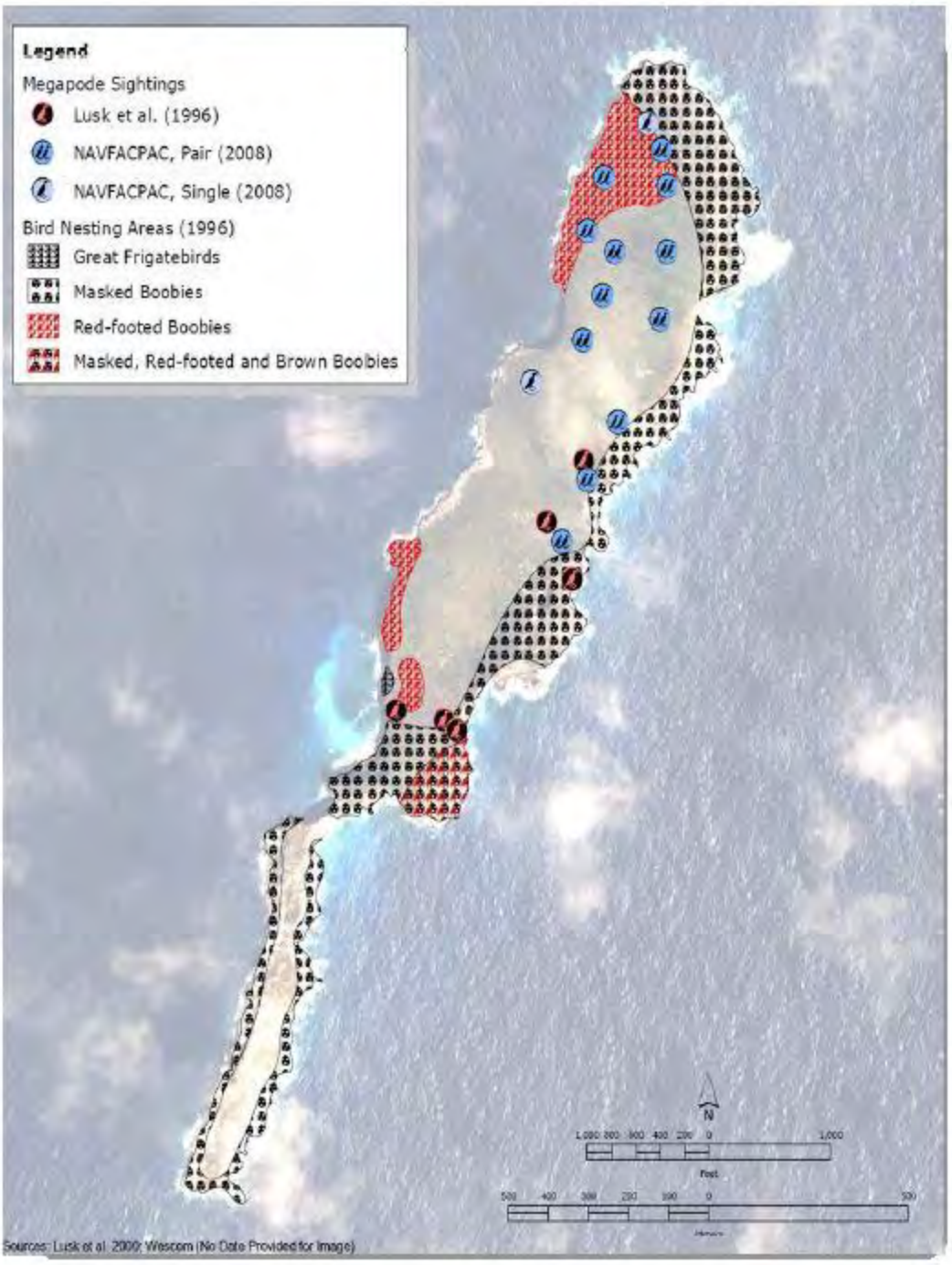

Figure 52. FDM biotic environment. Map includes sea bird breeding colonies and locations of sightings for the Micronesian megapode

Figure 4. Map of marine bird nesting colonies and Micronesian Megapode sightings, taken from Joint Region Marianas (2012).

Section 3.10.3.1.1.1 claims that the No Action alternative "explosions on FDM may affect, but not adversely affect, the Marianas Fruit Bat". However in the next sentence it claims that "Explosions on FDM may affect and are likely to adversely affect the Micronesian Megapode and Mariana Fruit Bat" – this is contradictory. Please correct this to indicate which it is.

Section 3.10.2.3.11.3 states that FDM is thought to be a stopover for Mariana Fruit Bats moving through the islands. The state of the vegetation is an important factor in how well FDM serves as a stopover. There needs to be a thorough survey of the current state of the vegetation on FDM, compare it with past surveys (if any) or photographs, compare the impact area with the "no drop zone", and implement ongoing monitoring of vegetation on the island. The ability of the island to act as a stopover could impact the ability of the species to move among islands in response to volcanic activity, typhoon damage and other natural disasters.

The section on birds of conservation concern (BCC) is contradictory and poorly written. Table 3.10-3 and Part 3.10.1.2.1 should be amended to reflect that fact that 7, not 5 or 4 or 3, USFWS-listed birds of conservation concern occur on islands within the study area, and should give the correct list of species found within each military lease area. The correct list of BCC found within the islands of the study area is as follows: Micronesian Myzomela (*Myzomela rubrata*), Rufous Fantail, Aguiguan and Rota subspecies (*Rhipidura rufifrons mariae),* Rufous Fantail, Saipan and Tinian subspecies (*Rhipidura rufifrons saipanensis*),Tinian Monarch (*Monarcha takatsukasae*), Bridled White-eye, Saipan subspecies (*Zosterops conspicillatus saypani*), Golden White-eye (*Cleptornis* marchei), and Micronesian Starling (*Aplonis opaca*). Within the military lease areas, FDM has the Micronesian Starling (and possibly others, since the only available survey was the Lusk et al. (2000) 5.5 hour visit in 1996); Tinian MLA has the Micronesian Myzomela, Rufous Fantail Saipan and Tinian subspecies, Bridled White-eye Saipan subspecies, and Micronesian Starling; and the Saipan Marpi Manoever Area has the Micronesian Myzomela, Rufous Fantail Saipan and Tinian subspecies, Bridled White-eye Saipan subspecies, Micronesian Starling and Golden White-eye.

Section 3.10.2.1.5 states that bombing has altered the vegetation of FDM from tree canopy cover to lower vegetation, especially in areas of higher bombing levels. A brief vegetation survey was completed in 1996 which listed 32 native species and 11 introduced species. No ongoing monitoring has taken place to discern the effects of bombing on vegetation communities. Vegetation provides habitat (food and nesting areas) for terrestrial species, as well as the prevention of soil erosion. It is acknowledged in section 3.10.3.2.2 that the vegetation to the north of the "no fire" line is in much better condition than that within the firing ranges. A land-based survey of the current vegetation condition on FDM to assess the effects of bombing activities needs to occur. There also needs to be ongoing monitoring of

vegetation on FDM in areas of high and low explosives activity, in order to determine the effects of bombing activities on the vegetation communities of FDM.

Section 3.10.3.2.3.4 discusses wildfire on FDM as a potential issue, but does not state how this will be addressed. Wildfire can be started by exploding ordinance (of which there are thousands proposed for FDM). It can cause extensive damage to wildlife habitat, including endangered species habitat, as well as secondary effects such as increased levels of erosion and sedimentation. How will the military prevent wildfires spreading from the impact zones into the no drop zones? What kind of range maintenance will take place to prevent wildfires from spreading?

Finally, there needs to be an assessment of the effectiveness of the “no fire line”, including how much stray ammunition ends up in the “no drop zone”.

Effects on cultural resources

Concerning archaeological resources on FDM, Section 3.11.2.2.1 states that a preliminary archaeological field survey of FDM was conducted in 1996 by Dr. Welch of IARII and that no archaeological sites or isolated non-modern artifacts were observed. In the 1999 Final Environmental Impact Statement for the Military Training in the Marianas it is stated in appendix D1 page 14 that Dr. Welch's 1996 trip to FDM was a preliminary archaeological reconnaissance and that all historic remains noted can be attributed to the use of the island as a bombing target by the U.S. Military. However the Joint Intelligence Center, Pacific Ocean Areas NOS 42-44, April 1 1944 notes the presence of possible a Japanese Lookout Tower on FDM, indicating that at least something was built on FDM during the historic period prior to the end of World War II, even if FDM was not occupied on a full-time basis.

Limestone islands such as FDM often contain vast cave and cavern systems. Historically and prehistorically, sea caves, cliff shelters, and beach landing areas could have provided valuable shelter to fisherman, agriculturalists, and even foreign military members who utilized FDM prior to or during World War II. It is in those shelter and camping or living areas that remnants of past cultural activity, including burial or ritual sites is often found. Was a thorough inventory of caves undertaken as part of a cultural survey or is a thorough cultural survey of FDM scheduled for the future?

Further, reconnaissance surveys for archaeological purposes are often completed without undertaking thorough on-ground investigations because they are designed as a preliminary investigation for planning purposes and not intended to be a final investigation. If Dr. Welch's reconnaissance survey was undertaken from the air or without the benefit of systematic methods, much of the remnants of past cultural activity such as pottery shards and food remains from early voyagers, stone tools from agriculturalists, even the remains of German and Japanese occupation could easily have been completely missed by the investigator.

In the absence of the actual final report authored by Dr. Welch about his 1996 visit to FDM there are many questions that should be answered pertaining to the methods employed by Dr. Welch that form the basis for the finding of no significant impact to cultural resources. Was the Welch investigation a systematic investigation on the ground? Was it a visual inspection from helicopter, transects over the island, shovel-test transect, or other format? Did it include testing the soil and examining the geology, subsurface probes, or examination of caves as would be required to make an informed determination that there were no historic or prehistoric archaeological remains present on FDM? Will the report and other reports about cultural resources in the Marianas commissioned during the course of the DEIS/OEIS preparation be made available to the Historic Preservation Office and the CNMI Government?

Has the issue of FDM as an important Traditional Cultural Property to the Chamorro people been addressed? If not, it needs to be. FDM was clearly an important island to local peoples in the past as is noted by George Fritz, first German Administrator to the Marianas in his 1904 manuscript *The Chamorro: A History and Ethnography of the Mariana Islands.* On page 11 of the 1986 Elfriede Craddock translation of Fritz's book it is noted that while FDM was not known to the missionaries of his time it had evidence of either current or earlier occupation. Likely FDM was an important stopping point on Chamorro voyages up and down the island chain, especially with its flocks of migratory birds, which were traditionally hunted and salted, and for its abundant fishing along the coastline.

It is slightly disconcerting that the first German Administrator to the Marianas undertook a more thorough and careful examination of FDM's cultural resources in the early 20th century than that which was undertaken by the authors of the DEIS/OEIS in the 21st century. Furthermore, while this DEIS/OEIS document continually stresses that FDM has been bombed for decades, past use should never dictate future actions. More importantly, past use is no excuse for not taking proper action and not undertaking proper study during this DEIS/OEIS and Section 106 review process.

Effects on recreational and commercial fishing activities

Restricting fishing areas may impede the ability of fishermen to fish in these areas and increase the pressure on other fishing areas. There is no indication of the timing and duration of fishing restrictions as a result of the proposed military activities on Tinian and FDM. It is impossible to determine the effects of restrictions on fishing activities within the restricted areas, as well as increased pressures on other areas. Table 3.13-4 shows the numbers of past closures and the durations of each, but the DEIS/OEIS does not indicate the number and durations of closures that the vastly increased proposed activities on FDM would necessitate.

Section Figure 3.12-4 shows the FDM restricted area and danger zone, but it would be useful to show this map in relation to other islands, particularly Saipan, to help put into perspective the potential impacts on fishing activities between the islands.

Section 3.12.3.1.1.2 states that "*The military has been conducting training and testing activities within the MITT Study Area for decades*". Such statements should be removed. This DEIS/OEIS is meant to address the impacts of proposed activities. Past activities should not act as a green light for future activities, especially when the proposed activities are significantly different to what has happened in the past.

There will be substantial cumulative impacts on recreational and commercial fishing from a combination of activities proposed in this DEIS/OEIS with other military activities in the region. Section 4 needs to address this deficiency.

Effects on transportation between islands

Figure 3.12-4 shows the FDM restricted area and danger zone, but it would be useful to show this map in relation to other islands, particularly Saipan, to help put into perspective the potential impacts on transportation between the islands.

Section 3.12.3.1.1.1 gives no indication of the location, number and duration of military activities and associated airspace and shipping routes. This is needed in order to properly assess the effects of the proposed activities on commercial transportation and shipping. How many times per year in total would transportation be impacted, and what is the duration of each restriction?

There will be substantial cumulative impacts on transportation from a combination of activities proposed in this DEIS/OEIS with other military activities in the region. Section 4 needs to address this deficiency.

Effects on Tourism

The proposed activities will create restricted access to beaches and dive sites used by tourists on Tinian. What is the schedule? How many times will these beaches be off-limits?

There will be substantial cumulative impacts on tourism from a combination of activities proposed in this DEIS/OEIS with other military activities in the region. Section 4 needs to address this deficiency.

Cumulative impacts

In general, Section 4 "Cumulative Impacts" does not address the cumulative impacts of the activities described in the DEIS/OEIS on any of the potential impacts given in Sections 3.1 through 3.13 with other current military activities that are occurring in the study area. These activities include, but are not limited to, activities described in the Guam/CNMI relocation, divert airfield and the CJMT. Instead this chapter largely relies on comparing the impacts of these proposed activities to other activities such as worldwide turtle deaths from fishing, and arguing that the impacts outlined in the DEIS/OEIS are comparatively insignificant.

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Commonwealth of the Northern Mariana Islands
Department of Lands and Natural Resources
Lower Base, P.O. Box 10007
Saipan, MP 96950
Tel: 670-322-9830/34 Fax: 670-322-2633

December 11, 2013

MITT EIS/OEIS Project Manager
Naval Facilities Engineering Command, Pacific
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Subject: Environmental Impact Assessment Comment on the Marianas Islands Training and Testing Activities, United States Department of the Navy

Dear Sir/Madam,

The Commonwealth of the Northern Mariana Islands (CNMI) Department of Land & Natural Resources Division of Fish & Wildlife (DFW) appreciates having the opportunity to share its concerns on the Draft Environmental Impact Assessment (EIS) on the Marianas Islands Training Testing (MITT) Activities, United States Department of the Navy. This review contains comments on the overall validity of the EIS, the credibility of risk to marine and terrestrial environments and cultural and socioeconomic conditions, and the requirements by the EIS and U.S. Department of the Navy to assure adequate protections.

General concerns. Proposed activities will have significant impacts on the ecological, cultural, and socioeconomic resources of the CNMI and its surrounding waters. Some impacts, such as the degradation of landscapes, restriction of access to resource users, and the diminishment of cultural value are impossible to monitor, measure, mitigate, and recover. DFW is particularly concerned about the cumulative impact of military buildup and training activities (including the MITT, MIRC, CJMT, Divert, etc.) will have in its jurisdiction.

- The EIS lacks basic information required to assess ecological, socioeconomic and cultural risk.
- DLNR and DFW are rarely afforded the opportunity to conduct independent, third-party monitoring of the impact of ongoing military training activities, particularly those at sea and on remote northern islands in the archipelago.
- Few data collected by Department of Defense (DOD) and its contractors in monitoring and mitigation activities associated with prior and ongoing training activities in the region are shared with DFW. DFW is thus prevented from monitoring or knowing the real impact of military activities in its territorial waters and terrestrial habitats. DLNR and DFW are also prevented from being able to model or predict the likely impact of DOD training activities in its jurisdiction.

- DLNR and DFW are rarely invited to collaborate with DOD on the design, execution, and scientific review of monitoring activities.
- Military activities are presented in "number of activities per year", not specific durations or seasonality of the activities (e.g. Table 2.8-1, Baseline and Proposed Training Activities).
- Dates and locations of activities are not provided, so added cumulative impact of training activities (ecological, cultural and/or socioeconomic) cannot be predicted or monitored. Activities occurring consecutively versus concurrently would cause significant hardship in exclusion zones within the Restricted Area (Farallon de Medinilla, R-7201 and R-7201A) and Danger Zones near Tinian and Farallon de Medinilla, especially if they are spatially or temporally overlapped with commercial and sport fishing activity. Additive/consecutive activities would instill a level of chronic environmental risk.
- Tinian's map (3.6-18) shows no Danger Zone for surrounding waters. It is not clear if shoreline excursions will prevent access to surrounding waters during the time of these exercises.
- The EIS ignores the environmental impacts of increased bombing activities in waters surrounding Farallon de Medinilla, specifically within the 3 nm permanent Restricted Area (R-7201). There is a strong likelihood that aberrant ordnance will adversely affect the surrounding coral reef and associated fauna (fish, sea turtles, and marine mammals). The EIS should provide an ordnance-specific probability estimation of land versus sea detonation based on known target success of the specific weapons applied.
- There are few detailed maps showing coral habitat for Farallon de Medinilla (contrast Section 3.3-11 to the maps provided for Tinian in Section 3.3-12). Military-funded surveys have been performed on Farallon de Medinilla in the past, and data from these surveys should be incorporated on the standard series of maps.
- Section 3.3 – Marine Habitats contains all other affected islands except Farallon de Medinilla. This should be addressed in the context of increased ordnance on Farallon de Medinilla with all alternatives presented.
- The EIS ignores some of the most apparent activities that impose risk to surrounding fauna. Some examples include the impact of amphibious landings on turtles and corals, and the increasing bombing activity of Farallon de Medinilla.
- The real ecological impact of proposed activities will be observed and described by DOD-affiliated observers. Such observers have the potential to underreport or report with bias the impact of activities. The proposal does not provide for independent assessment of the impact of proposed military activities.
- The level of access that non-military personnel will have to Farallon de Medinilla in the three-mile exclusionary zone is not well-described.
- Subsurface activities, including anti-submarine warfare, electronic warfare, sonar use, and ordnance detonation on or near seamounts will have significant impacts on populations of marine habitats and animals, including cetaceans, fish, and marine invertebrates.

Sediments and water quality. Sedimentation in proximity to land-based activities on Farallon de Medinilla and Tinian will adversely affect nearshore habitats. The EIS's claims of localized long and short term impact are valid. However, the EIS ignores sedimentation as a significant concern.

- The increased level of bombing and disturbance of soil on Farallon de Medinilla imposes a significant risk to surrounding corals and other sessile invertebrates. The EIS focuses on

the in-water impacts of explosives and potential contamination from ordnance, which will have local and short-term negative impacts. Bombs up to 2000 lbs. will significantly disrupt soil and increase sedimentary load on surrounding reefs.

- Aberrant ordnance around Farallon de Medinilla will decimate surrounding corals and cause mortality of sea turtles, marine mammals, and fish, and it will damage critical fish habitat.
- Amphibious assault with heavy equipment along the shores of Unai Babui, Unai Chulu and Unai Dankulo will increase sediment loads to the nearshore reefs, impacting corals and decreasing quality of fish habitat. The EIS speculates that impacts would only be temporary. However its assessment is only based on short-term observation, and it ignores the impact from latent effects.
- With increased sediment loading into near-shore waters, water and substrate quality will decrease. Without proper flushing, sediments will accumulate and be re-suspended with every storm or increased wave and wind activity. Suspended sediments affect light attenuation, effectively decreasing the amount of sunlight needed by photosynthesizing organisms such as corals and algae.

Sea turtles. There is significant risk in military activities having an adverse impact on local sea turtle populations. The draft EIS states a limited impact. However, it largely ignores the increased level of ordnance use on Farallon de Medinilla and impact of amphibious assault on Tinian's beaches.

- Amphibious assault on Tinian's beaches of Unai Babui, Unai Chulu and Unai Dankulo will impact fragile nesting habitat for green sea turtles. Heavy equipment will crush buried nests and compact the surrounding substrate, reducing suitability as a continued nesting site.
- The EIS, assuming only land strikes of ordnance, ignores the potential impact of abberant ordnance on pelagic sea turtles around Farallon de Medinilla. Green (threatened), hawksbill (endangered), loggerhead (endangered), olive ridley (threatened), and leatherback sea turtles (endangered) utilize nearshore habitats and reef sites as a refuge from predators and for grazing and reproduction. The sparse available habitat for such activities across the CNMI underscores the ecological significance of each island unit. Although the EIS indicates a lower abundance of sea turtles around Farallon de Medinilla relative to other islands, this does not preclude Farallon de Medinilla's importance as critical habitat.
- The EIS states a low risk of entanglement based on the relatively small size of the parachutes (45 cm diameter) with "short lines" (page 3.4-177), however it is not indicated if all are negatively buoyant (only stating that most have weights). A drifting parachute would pose a significant risk to sea turtles, which may ingest or feed in proximity to the object and become entangled. The estimation of 8,000 parachutes/decelerators per year is large, and indicates a potential risk for entanglement.
- Amphibious assault and amphibious raids at Unai Babui, Unai Chulu, and Unai Dankulo on Tinian during turtle nesting seasons will disrupt the breeding success of green and hawksbill sea turtles.
- Active low frequency acoustic sources such as the active sonar used by anti-submarine warfare sonars associated with the Littoral Combat Ship, the impact of non-explosive munitions, large vessel ship-radiated noise, and explosive devices emanating frequencies in the range of 300-400 Hz would impact the hearing of sea turtles. If their hearing is

compromised, then their ability to navigate and detect predators (the latter is probably the more salient function of hearing in sea turtles) would be negatively affected.

- Activities such as ship movement, munitions use, and the use of active low frequency acoustical devices in areas where marine downwelling gathers and aligns buoyant material (including dispersed food resources in surface waters) would affect sea turtles that congregate at these convergences in their pelagic stage.
- Proposed monitoring and surveillance of sea turtle nesting activity (including nest locations) is insufficient to identify fresh nests and body pits. Daily monitoring before and constant monitoring during military exercises and beach use is required to adequately reduce impact of amphibious training activities. Monitoring by an independent (i.e. not employed or contracted by the Department of Defense) party specially trained in sea turtle nest location is required to provide objective and non-biased assessments of the effect of military activities on sea turtle nesting success and behavior.

Marine mammals. Numerous species of marine mammals (26+ spp., 5 Endangered) utilize the nearshore and offshore waters of the CNMI. Although most activities will be performed in excess of 12 nm off shore, there are some concerns about the impact of acoustic activities and submarine explosives on local populations. These include:

- Use of sonar, underwater explosives, and other acoustic devices will have an adverse impact on whales and dolphins, especially residential Culver's beaked whales which have shown mortality, injury and evasion in response to Navy acoustic activities.
- Unprecedented acoustic activity, including aberrant bombing on Farallon de Medinilla, would likely increase mortality of species that are closely related to nearshore habitats, including sperm whales (resident), humpback whales, false killer whales, and spinner dolphins.
- The use of tethered parachutes (total 8,000/year) risks entangling marine mammals. The EIS states the parachutes are mostly weighed; however, they do not provide specific information on the actual weight and known sinking rate of the device.
- Disruption of marine mammals and their subsequent evasion of military activities may impose a significant energetic cost to species that must dive to great depths to obtain food.
- The use of global-scale population estimates instead of local stocks is insubstantial.

Corals. The CNMI has a high-diversity of corals, a number of which are being considered for listing as threatened (38 spp.) or endangered (2 spp.). Corals provide critical fish habitat for reef and bottom fish species, and therefore are integral in the health and sustainability of the CNMI's fisheries and tourism industry. Corals are also important because they prevent shoreline erosion by buffering ocean waves. Activities offshore will impact corals. The greatest effects will be on Farallon de Medinilla and Tinian.

- Farallon de Medinilla will have greater bombing activity on the land causing increased sediment loads.
- Aberrant ordnance directly impacting reef sites will diminish species abundance and diversity, and the overall health of corals. It will reduce structural integrity of the reef and increase the susceptibility of Farallon de Medinilla to coastal erosion.
- Increased bombing activities of Impact Areas 3 and 2 (live/inert ordnance) on Farallon de Medinilla will compromise the "land bridge" between the two target areas. The destruction of this geological formation will accelerate the mid-island breach, which

would reduce protection of the leeward side of the island where much of the coral growth and habitat complexity resides. The windward side is conversely highly-impacted by wave and storm activity and this will be extended to the leeward side by breach of the land bridge.

- Increased terrestrial bombings, clearings, land modifications will cause increased terrestrial runoff. Runoff usually contains dissolved inorganic nutrients, particulate organic matter and sediments which can affect light attenuation, water quality and substrate quality. This runoff will have negative effects on adult and juvenile corals.
- Sedimentation will decrease coral calcification, fecundity, tissue thickness, zooxanthellae density, photosynthesis, and overall coral survival. Sedimentation will decrease coral settlement and metamorphosis, recruitment and juvenile growth and survival.
- Amphibious assault of Tinian's beaches (Unai Babui, Unai Chulu and Unai Dankulo) will cause landing craft to come in direct contact with sensitive corals (EIS Figure 3.3-3).
- The impact of proposed activities and their effects and by-products, including spent ordnance, refuse, and used sonobouys, on deep corals has not been evaluated.

Fish. The EIS states that most activities will be in deeper waters and therefore will have a low risk to fish. This is likely accurate in deeper, offshore waters (>25 nm). The EIS is speculative regarding impacts to fish <25 nm from Farallon de Medinilla and Tinian.

- Increased bombing of Farallon de Medinilla will impact local reef and bottom fish species that inhabit the surrounding shallow and deep water reefs. Direct impact of reef sites by aberrant ordnance will mortally wound fish in proximity to detonation and be a significant stressor outward for hundreds of meters.
- Increased bombing on Farallon de Medinilla will impact five pomacentrid species of fish, and the Napoleon wrasse (*Cheilinus undulatus*), that have been proposed for listing under the Endangered Species Act. Increased use of 2000 pound bombs on Farallon de Medinilla increases the potential for impact on surrounding reef fish.
- Increased bombing activity will impact the genetic continuity of reef fish populations in the Mariana Archipelago. Bombs reaching the nearshore will kill reef fish, remove multiple year classes, and homogenize coral reef structure.
- A decrease in the functional diversity of the reef surrounding Farallon de Medinilla will decrease grazing by herbivorous fish would likely increase algal production and out-competing of corals.
- No information (past or current) on reef fish populations or densities from Farallon de Medinilla, including reef fish habitat, are available to allow for an assessment of probable impacts from aberrant ordnance within the nearshore (<3 nm) waters of Farallon de Medinilla.
- The use of tracked landing craft on Tinian will crush delicate corals and decrease critical fish habitat. Nearshore waters and their complex habitats are used by nearly all reef fish as nurseries and more pelagic species of jacks. The EIS ignores the impact of these habitats on local fish recruitment and also utilization of adult fish.

Marine invasive species. Increased shipping activity and associated fouling and ballast-water organisms will introduce marine organisms to nearshore habitats, especially on Tinian. The EIS claims the likelihood of introducing invasive species is negligible-low, however the occurrence of invasive ship-related organisms in Hawai'i and Guam (Eldridge & Smith 2001, *A Guidebook of Introduced Marine Species in Hawai'i*) suggests there is minimally a

moderate chance for introduction of marine invertebrates to the CNMI. Once introduced, marine species are nearly impossible to eradicate, and the consequences of introductions are impossible to predict. The EIS's findings appear more based on speculation and ignoring of the known threats that befouling and ballast water as vectors of marine invasive species.

Forest birds. Proposed activities in the Marpi Maneuver Area (Saipan), Military Lease Area containing North Field (Tinian), in and around the Rota International Airport, and in forested and well-vegetated areas on Rota have the potential to negatively affect the population integrity and breeding biology of numerous forest bird species though habitat modification and human disturbance. Noise, movement, and the physical disruption of nests and roost sites would result in "take" of federally and locally protected species, or contribute to the decline of species of conservation concern.

- Land navigation training, airfield seizure activities, airfield expeditionary training, and ground disturbance (pedestrian and vehicular traffic) in forested and other densely-vegetated areas of the Marpi Maneuver Area will affect breeding and territory use of the federally and locally endangered Micronesian megapode and nightingale reed-warbler; the locally protected Mariana fruit dove, white-throated ground dove, collared kingfisher, Micronesian starling, rufous fantail, and golden white-eye. The golden white eye currently appears to be in decline in this area.
- Field training exercises in the Marpi Maneuver Area, particularly in or near cave entrances and in open grasslands where insects are abundant, would affect foraging, roosting, and breeding behavior of federally and locally protected Mariana swiftlets.
- Ground disturbance and aircraft and aerial target strikes in the Tinian Military Lease Area would negatively affect the breeding biology of Tinian monarchs. Monarchs nest between 1 to 4 meters off the ground in tangan tangan thickets. Disturbance occurring during the breeding season would result in nest abandonment and adult/chick mortality. If reproductive success is significantly affected, the Tinian monarch would be re-evaluated for federal protection under the Endangered Species Act. Collisions between aircraft and Tinian monarchs are also possible.
- Special warfare training, parachute insertion, reconnaissance, field training exercises, aircraft overflight noise and prop wash from both fixed and rotary wing aircraft, exhaust from diesel-fueled vehicles, and combat search and rescue training in or near essential habitat for Mariana crows and Rota bridled-white eyes on Rota would result in the disruption of breeding activities for either or both species. Collisions between aircraft both Mariana crows and Rota bridled white-eyes are also possible.
- Ground based activities including pedestrian and vehicular traffic in and around the Dugi area of Rota would negatively affect the behavior and habitat use of the critically endangered Guam rail, an endemic groundbird species that was extirpated from the CNMI but recently reintroduced as an experimental population. Evidence of this population breeding in the wild was first collected in 2013.
- Ordnance use, extreme noise by fast and low passing jets, and aircraft and aerial target strikes on Farallon de Medinilla will kill and negatively affect the breeding biology of Micronesian megapodes, and it will negatively affect the behavior and reproduction of white-throated ground doves.

Water birds. Special operations and land navigation training activities in or near permanent or ephemeral freshwater impoundments on Saipan, Tinian (mostly), and Rota (nominally) would affect the use of these impoundments by birds that rely on them for foraging, breeding,

and refuge. The species of greatest concern is the federally endangered Mariana common moorhen. Other species of concern include the yellow bittern and various migratory ducks that transit the CNMI seasonally. These birds are protected by the migratory Bird Treaty Act. Reed beds surrounding freshwater impoundments have potential to host federally endangered nightingale reed-warblers.

- Special purpose Marine air ground task force; intelligence, surveillance, and reconnaissance, and field training exercises in or near terrestrial freshwater impoundments in the Marpi Maneuver Area (in ephemeral and constructed sources) and Lake Hagoi on Tinian would disrupt the foraging and breeding activities of federally and locally protected Mariana common moorhens and federally protected migratory waterfowl such as pintail ducks.
- Human activity including pedestrian and vehicular traffic and special operations in reed beds, swampy areas, or water impoundments would interfere with territory use and the reproductive success of nightingale reed-warblers. However, this concern is nominal because the most likely location where such activities would occur around Lake Hagoi, and in borrow pits and bomb craters that fill with water during the rainy season, on Tinian – and nightingale reed warblers do not occur on Tinian.

Migratory sea birds. Amphibious landings, ordnance use, and human activity in and around the coast and littoral zones on Saipan, Tinian, and Farallon de Medinilla will impact individuals and groups of migratory wading birds and water birds that are either year-round residents or (more commonly) use the CNMI as a stopover point on their biannual migration pathways. These birds are locally valuable because, in many cases, they represent the only populations that occur in the CNMI, and they would be important demes or components of larger regional groups. In most cases, species of concern are protected by the Migratory Bird Treaty Act. In some cases (i.e. short-tailed albatross, Hawai'ian petrel, and Newell's shearwater), species are protected by the Endangered Species Act.

- Increased traffic, bilge water release, and oil leakage in the Port of Saipan, Rota Harbor, and Tinian Harbor will affect foraging habits of a wide variety of shorebirds and wading birds such as Pacific golden plover, gray-tailed tattler, whimbrel, ruddy turnstone, lesser sand plover, black-winged stilt, common sandpiper, intermediate egret, little egret, and red-necked stint.
- Special warfare training on or near cliffs or forested roost sites in the Marpi Maneuver Area will affect the breeding of red-tailed tropicbirds, brown noddies, black noddies, and brown boobies.
- Special warfare, amphibious training activities, humanitarian assistance/disaster relief operations, special purpose Marine air ground task force exercises, and noise and prop wash from rotary-winged aircraft at Puntan Masalok, Puntan Lamanibot, and Unai Dankulo will affect the roosting and breeding activity of black noddies, brown noddies, brown boobies, and Pacific reef herons.
- Amphibious landings on Tinian landing beaches will affect foraging migratory shorebirds, including Pacific golden plovers, whimbrels, and gray-tailed tattlers.
- The use of large-sized or a large volume of Mark 77 (incendiary) and Mark 80 series (high explosive) series bombs on Farallon de Medinilla will increase risk of wildfire on the island, which would kill or destroy vital habitat for tree- and forest-nesting birds such as the Micronesian megapode and red-footed booby.

- The excessive overpressure, shock waves and noise (>100 dBA) from the detonations will be sufficient to frighten birds away from the area. This departure will be especially detrimental during mating and nesting periods.
- Byproducts of detonation, including flame, heat, light, and hot gasses from Mark 82 (500 pound), Mark 83 (1000 pound), and Mark 84 (2000 pound) bombs on Farallon de Medinilla risk eliminating or negatively affecting whole colonies of breeding birds from explosive or percussive force and shrapnel.
- Excessive radiant heat from trimethylaluminum and triethylaluminum combustion in Mark 80 series (high explosive) ordnance in or near rookeries in the northern and southern forested areas and the eastern sea caves of Farallon de Medinilla will kill and affect the breeding biology of white-tailed tropicbirds, red-tailed tropicbirds, brown noddies, black noddies, red-footed boobies, brown boobies, masked boobies, sooty terns, and great frigate birds.
- The use of high explosives in smoke, tracer, illumination, and incendiary munitions containing white phosphorous will encourage smoke inhalation by birds and will acidify soil and plant tissue. The acid, until it is degraded by sunlight and microorganisms, will be adsorbed onto food items and come into contact with the tissues of ground-dwelling birds such as the Micronesian megapode and white-throated ground dove, damaging these tissues.
- White phosphorus will cause injuries and death in organisms by burning deep into tissue, by being inhaled as a smoke, and by being ingested. White phosphorous sticks to the skin of organisms. Phosphorus burns carry a greater risk of mortality than other types of burns due to the absorption of phosphorus into the body through the burned location, resulting in significant organ, notably liver, damage.
- Burning white phosphorus produces a hot, dense, white smoke consisting mostly of phosphorus pentoxide which, in even moderate concentration, will irritate the eyes, mucous membranes, and respiratory tracts of wild animals.
- White phosphorus particles in the air may acquire a protective coating that makes them unreactive for several days. In water, white phosphorous slowly reacts with dissolved oxygen and may persist for hours to days. Chunks of white phosphorus coated with protective layers may persist in water and soil for years if oxygen levels in water and soil are low. White phosphorus will bioaccumulate in fish in contaminated water and in birds in contaminated areas.
- The use of high explosives containing thermites will result in the deposition of heavy metal residues that contain chromium, manganese, iron, barium, and lead (depending on the composition of the thermites that are used) on the surface of Farallon de Medinilla. Heavy metal residues will be adsorbed onto soil, bioaccumulated in low trophic-level organisms (including microorganisms, plants, and soil-dwelling animals), and ingested by ground-feeding birds such as the Micronesian megapode and white-throated ground dove.
- Heavy metals will also be washed into the ocean in precipitation and erosion events and bioaccumulated in fish that are ingested by white-tailed tropicbirds, red-tailed tropicbirds, brown noddies, black noddies, red-footed boobies, brown boobies, masked boobies, sooty terns, and great frigate birds. These heavy metals are toxic in relatively small concentrations.
- It is reasonable to expect that a proportion of the detonations in the proposed bombing and shelling locations will be low-order. Low-order detonations will result in the deposition of large quantities of toxic high explosives in soil and water. There is, furthermore, potential for delayed detonations as a result of impacts by organisms. The deposition of unexploded

ordnance on and around Farallon de Medinilla will create a persistent physical hazard for wildlife and human users of the island and its coastal waters.

- The use of chemically-propelled munitions and high explosives, particularly when low-order detonations occur, will result in the deposition of propellant constituents such as nitroglycerin, perchlorate, and unbound propellant fibers – and explosive constituents such as 2,4,6-trinitrotoluene (TNT), hexa-hydro-1,3,5-trinitro-1,3,5-triazine (RDX), octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX), and trimethylaluminum and triethylaluminum powder – in the soil on Farallon de Medinilla. Accumulation of these substances on and in the soil (TNT and perchlorate adsorb to soil, and they can be transported during soil erosion) and the biological transformation of TNT into highly toxic metabolites such as 2,6-DNT and 2,4-DNT will result in the poisoning of ground-feeding birds such as the white-throated ground dove and the Micronesian megapode. Migration of these chemicals through the soil to the coastal and pelagic zones surrounding the island (RDX and HMX are known to migrate through soils) will result in the poisoning of corals, fish, and piscivorous birds such as white-tailed tropicbirds, red-tailed tropicbirds, brown noddies, black noddies, red-footed boobies, brown boobies, masked boobies, sooty terns, and great frigate birds. Accumulation of these substances would also result in the risk of an explosive hazard.
- Decelerators and parachutes used on ordnance that are not destroyed in the blast risk entangling land birds and choking seabirds that ingest them (if they are washed into the ocean they risk being mistaken for prey items such as squid).
- Ordnance use on Farallon de Medinilla or small rock islets or atolls in the MITT area will displace or kill the federally endangered short-tailed albatross, Hawai'ian petrel, and Newell's shearwater.
- Disruption of brown, red-footed, and masked booby nests will have particularly devastating effects for the reproductive success these species, since brown and masked boobies are socially monogamous, and all boobies exhibit bi-parental care.
- Ordnance use and associated erosion on the island will likely negatively impact seabirds that forage on the bottom- and reef-breeding fishes of Farallon de Medinilla's productive fishery.

Terrestrial mammals. Two terrestrial mammals, the Mariana fruit bat and Pacific sheath-tailed bat, are endemic to the CNMI, but proposed activities are only likely to directly impact the fruit bat. Fruit bats are extremely sensitive to human presence and activity, including sight, low amplitude (40-60 dB, although only anecdotal data exist) noise, and scent. Pacific sheath-tailed bats only occur in the CNMI on Aguiguan, but their historic range includes Saipan, Tinian, and Rota. Some interisland dispersal would still occur, and reintroduction of this species to Rota is presently being considered. No proposed activities in the MITT EIS are likely to affect this species, but low-ceiling flights and use of cave entrances would affect this species' likelihood to colonize unused habitat and range. Mariana fruit bats are listed as threatened under the Endangered Species Act, and Pacific sheath-tailed bats are candidate species for listing.

- Aircraft noise, land navigation training, special warfare training, and ground disturbance (pedestrian and vehicular traffic) in limestone and ravine forest on Rota and the Marpi Maneuver Area would negatively affect roosting and breeding colonies and foraging habits of Mariana fruit bats. Low flying aircraft and ground based maneuvers would potentially result in adult flushing and pup abandonment.

- Close air support for urban warfare training in "mock urban environments" on Rota would disrupt colonies of Mariana fruit bats.
- Ordnance use on Farallon de Medinilla will destroy Mariana fruit bat habitat and likely kill individuals of this species. Killing breeding adults would have particularly significant effects, since long-term maternal care is required for the successful rearing of young.

Terrestrial reptiles. CNMI hosts two species of endemic geckos (the Micronesian gecko and the slender-toed gecko) and two species of skinks (the tide-pool skink and the Slevin's skink). All are believed to be in decline (some significantly) and are of particular conservation concern. Habitat disturbance and modification and the promotion of reptilian competitors such as the common house gecko are the biggest threats to CNMI's endemic terrestrial reptiles.

- Amphibious assault and amphibious raids at Unai Chulu would negatively impact suspected tide-pool skink and snake-eyed skink populations adjacent to the beach.
- Land navigation training, airfield seizure activities, airfield expeditionary training, and ground disturbance (pedestrian and vehicular traffic) in the native forests of the Mangpang, Lasu, and Basea areas on the Military Lease Area on Tinian will disturb important habitat for the Micronesian gecko. This is a particular concern, since this area has provided the most recent (1995) evidence of the last intact population of Micronesian geckos in the archipelago.
- Refuse heaps associated with training, encampments, and development sites would provide additional foraging habitat for (and encourage the population growth of) mangrove monitor lizards, which are terrestrial predators of endemic birds and reptiles.

Terrestrial invertebrates. The native invertebrate fauna of the CNMI is poorly studied but diverse. While the conservation status of most invertebrate species (particularly insects) is unknown, several charismatic species (mostly Lepidopterans) have been described. Two, the Marianas eight-spot butterfly and the Marianas wandering butterfly, are of particular interest because of their declining and fragmented populations. Proposed military activities have a low likelihood of affecting these populations, but activities that alter habitat would affect crucial breeding resources.

- Close-quarter combat, land demolitions, airfield seizure, convoy, and land navigation training is conducted on non-DOD lands in karst limestone forest within the Marpi Maneuver Area an within the Military Lease Area on Tinian have potential to directly affect the Mariana eight-spot butterfly, and to indirectly affect its habitat and host plants.
- Land navigation training in sub-canopy vegetation in lower strata of intact limestone forest in the Marpi Maneuver Area would destroy habitat or individuals of the humped tree snail, which is a candidate species for federal listing.
- Land navigation training in sub-canopy vegetation in lower strata of intact limestone forest in the Military Lease Area on Tinian would destroy habitat or individuals of the Langford's tree snail, which is a candidate species for federal listing.
- Land navigation training in sub-canopy vegetation in lower strata of intact limestone forest in native forests of Rota would result destruction of individuals or habitat of the fragile tree snail, which is a candidate species for listing.
- Land navigation training, survival training, airfield seizure activities, airfield expeditionary training, and ground disturbance (pedestrian and vehicular traffic) in

forested and other densely-vegetated areas of the Marpi Maneuver Area would negatively affect locally protected coconut crabs.

Terrestrial invasive species. Movement of vessels and cargo from Hawai'i and Guam increases the risk of introducing invasive species that are present on both islands. Of particular concern are invasive insects (mostly hymenopterans, hemipterans, coleopterans, and dipterans) and pathogens that have not been detected in the CNMI, but that are easily transported and overlooked in superficial inspections that would presumably be performed at ports of entry and by line personnel during maneuvers. Invasive terrestrial insects, once established, are nearly impossible to eradicate, and they can cause significant damage to crops and wildlife habitats, and they can prey directly on species of conservation concern. They can also contribute to pestilence and be vectors for human, animal, and zoonotic disease.

Of additional concern is the introduction of the brown tree snake and other invasive reptiles and amphibians such as the greenhouse, eastern dwarf tree, Indian rice, Hong Kong whipping, coqui, and Gunther's amoy frogs from Hawai'i or Guam. Similarly, the facilitation of terrestrial vertebrate species that are invasive but already established in the CNMI. Such species include rats (particularly the Malaysian black rat on Tinian), mice, and shrews. These species are all significant threats to ground- and tree-nesting birds, and to endemic snails and skinks.

- Movement of vessels and cargo greatly increases the risk of the introduction of predatory ants such as the little fire ant, which has invaded Guam in the last decade and is causing significant agricultural damage. Other ants of concern include the Argentine ant and red imported fire ant.
- Movement of vessels and cargo would also facilitate the establishment of yellow crazy ants, which are already present in the CNMI (on Saipan and Tinian) but at low densities. Importing yellow crazy ants from other regions would encourage aggressive interactions and the establishment of supercolonies. High densities of yellow crazy ants pose significant threats to land crabs; snails; and ground-, cup-, and cavity-nesting birds.
- Similarly, traffic from Hawai'i and Guam would facilitate the establishment of the bigheaded ant, which was first detected in the Marianas in 1990 and is present at low densities. While the bigheaded ant does not attack humans, it is a well-known household and agricultural pest. When established, it can decimate populations of native invertebrates.
- Increased traffic and shipment of cargo, building materials (notably wood and wood products), vehicles, and personnel from Guam would facilitate the importation of cycad *Aulacaspis* scale crawlers, which would infect the last intact colony of CNMI's native cycad species, *Cycas micronesica.*
- Traffic from Hawai'i and Guam would facilitate the importation of *Culex* spp. mosquitoes from Hawai'i that are carriers of West Nile virus, filariasis, Japanese encephalitis, Saint Louis encephalitis, and avian malaria. Endemic birds have low resistance to introduced pathogens such as avian malaria. This disease has decimated the lowland avifauna of Hawai'i.
- Traffic from Hawai'i and Guam would facilitate the importation of *Anopheles lesteri* from Guam, which readily attacks humans and is a primary vector of human malaria.
- Traffic from Hawai'i and Guam would facilitate the importation of *Aedes* spp. mosquitoes from Guam, which are vectors for Yellow fever, dengue fever, and filariasis.

- Land navigation training in sub-canopy vegetation in limestone forest and tangan tangan forest in the Marpi Maneuver Area and Military Lease Area will exacerbate the spread of introduced red-brown paper wasps (*Polistes olivaceus*) and Indonesian paper wasps (*Ropalidia marginata sundaica*). Structure building (including temporary structures) would facilitate wasp reproduction.
- Movement of personnel and cargo from Guam and Hawai'i will increase the likelihood of introduction of the brown tree snake, noxious weeds, and invertebrates to Tinian via if transport vessels, cargo, and personnel are not fully inspected prior to departure by trained staff.
- Parachute drops and personnel insertion at the airports on Tinian and Rota will increase the likelihood of introduction of noxious weeds and invertebrates.
- Increased traffic at ports of entry and among islands within the archipelago will strain already limited quarantine, inspection, and response resources in place to monitor for invasive species such as the brown tree snake. The existing infrastructure is already insufficient for the volume of traffic and degree of risk. Increased traffic will exacerbate the problem and increase the likelihood of the introduction of invasive species. We recommend that DOD provide funding to augment existing CNMI Brown Treesnake Interdiction Program.

Plants. Proposed ground maneuver activities that involve vegetation clearing present the risk of affecting plants that are protected by the Endangered Species Act, or that are under consideration for protection.

- Amphibious activities at Unai Masalok would disrupt a rare population of endemic *Euphorbia sparrmannii* var. *tinianensis.*
- Amphibious activities at Unai Chiget would disrupt a unique stand of forest of lantern trees (*Hernandia labyrinthica* var. *ovigera).*
- Land navigation training, airfield seizure activities, airfield expeditionary training, and ground disturbance (including pedestrian and vehicular traffic) in vegetated areas of the Marpi Maneuver Area and Military Lease Area would kill or otherwise damage important host plants for the Marianas eight-spotted butterfly *Procris pedunculata* or *Elatostema calcareum*.
- Land navigation training, ground disturbance (including pedestrian and vehicular traffic), and even nominal vegetation clearing in forested areas of Rota would negatively affect or kill rare individuals of federally endangered *Serianthes nelsonii*, *Osmoxylon mariannensis*, and *Nesogenes rotensis* plants on Rota.
- Such activities would also negatively affect candidate species on Saipan, Tinian, and Rota, including *Bulbophyllum guamense* (Rota), *Coelogyne guamensis* (Saipan, Rota), *Cycas micronesica* (Saipan, Tinian, Rota), *Dendrobium guamense* (Tinian, Rota), *Eugenia byranii* (Saipan, Tinian, Rota), *Heritiera longipetiolata* (Tinian, Rota), *Nervilia jacksoniae* (Rota), *Solanum guamense* (Saipan, Tinian, Rota), *Tabernaemontana rotensis* (Rota), and *Tuberolabium guamense* (Tinian, Rota).

Socioeconomic. The impact to socioeconomic resources by the MITT is not expected to occur based on the EIS's determination that co-use would be temporary and short duration (hours). Increased military activities in the archipelago will significantly alter lifestyles and attitudes of and perceptions toward people in the archipelago.

- Inadequate information provided in the MITT EIS on the duration of activities precludes any meaningful assessment on socioeconomic impact. The fact that the number of naval activities involving ordnance, particularly on Farallon de Medinilla, is noted in activities per year has no bearing on how long these activities will limit accessibility. Their duration of 'several hours' is too vague and open to interpretation that would close Farallon de Medinilla's waters (outside the 3 nm Danger Zone, R-7201) for extended periods.
- The sheer quantity of military activities in the vicinity of Farallon de Medinilla (within R-7291A) suggests a more protracted closure of the surrounding productive reef area to commercial and sport fishing. An analysis of the total area of reef taken by the 3nm Restricted Zone, and the 10 and 12 nm Danger Zones also shows the areal extent and impact of this closure would have on fishing. A total of the reef area exclusion would constitute 29, 93 and 98% of Farallon de Medinilla's fishable reef area. Thus, it seems more likely the activities on Farallon de Medinilla will impose a significant take of the CNMI's most productive fishing grounds.
- Tinian's beaches – impacts to tourism. Areas are secluded beaches that are an attraction for tourism.
- There is concern for activities on Tinian which may impose a littoral Danger Zone that would exclude boats from coming close to shore along the northern half of the island. The western side of the island is both a productive fishing ground and tourist destination for SCUBA diving. The shipping lane from Saipan to Tinian would also be included in this Danger Zone. This would increase shipping time and cost to avoid the area. The extended closure of this area during naval activities would therefore impose a significant economic and cultural take of the CNMI's resources.
- The EIS does not provide information including dates and location of activities, which would be critical for coordinating commercial, recreational, and subsistence fishing activities.
- Economic impact to the marine recreation industry would be evident once closures are established within the Tinian Safety Designation Zone. Dive sites such as the Tinian Grotto, Fleming Wall and Dump Cove are regularly used by dive operators in Tinian and Saipan.
- The overall impact is that the military's increased activities will have the potential to impact recovery efforts for those corals proposed for Endangered Species Act listing. Ultimately the decrease in locally-protected corals may severely handicap the CNMI when local projects (e.g. harbor improvement or dredging) require assessment of local populations and mitigation.
- Amphibious landings on Tinian Island will significantly degrade areas that have low relief and sandy beach areas (e.g. Unai Babui, Unai Chulu and Unai Dankulo), where there are low-energy leeward reefs and high coral development. Tracked vehicles and other landing craft will undoubtedly crush delicate corals and reef structure that is critical fish habitat. The decimation of reefs constitutes a long-term taking of resources that are critical for fisheries recruitment and sustainability. The destruction of corals also destroys quality SCUBA and snorkel sites in these areas used by locals and tourists.

Avoidance, Monitoring, and Mitigation of Effects. We recommend that the following items be provided by DOD to enable the Commonwealth to independently and objectively predict, monitor, and evaluate the impact of military activities proposed in this EIS.

- Provide regional (i.e. within the CNMI's territorial lands and waters) population estimates of all terrestrial and aquatic species likely to be impacted by activities in this proposal, and

that are listed in this response (these species are condensed into a list in Appendices A and B of this correspondence).

- Provide funds for an archipelagic-wide molecular analyses (nuclear and mtDNA) of selected marine and terrestrial species of concern, as designated by DLNR or DFW, to assess island-specific effective population size and genetic connectivity.
- Provide a summary of the number of species on this list that have been impacted (both Type A and type B "take") by DOD training activities in the region in the last 20 years.
- Provide funds for CNMI or an independent third-party contractor to perform pre/post inventories of ecosystems most likely to be significantly impacted by proposed activities, such as North Field Naval Air Station (including native limestone and tangan tangan forests adjacent to runways and proposed construction sites, the cycad plantation, wetlands such as Lake Hagoi and adjacent ephemeral water freshwater impoundments where Mariana moorhens have been detected, beaches where sea turtles have been observed nesting and surrounding waters, corals, and the littoral zone adjacent to amphibious landing beaches) and Farallon de Medinilla (including surrounding waters and the coral reef west of the island).
- Allow a full review of environmental surveys by the military (or contractor) *a priori* by DFW staff. Involve DFW staff in the planning of surveys and pre- and post-survey scientific review.
- Allow DFW staff members to inspect areas likely to be impacted by training activities before, and accompany military observers during, said activities to ensure that "take" is minimized and documented.
- Provide funds for CNMI to employ a Conservation Officer for Tinian, so that sea turtle nesting activity can be more adequately monitored before and during amphibious exercises. The regular presence of this monitor will also deter poaching of sea turtles and nests on Tinian, thus helping DOD achieve its environmental stewardship goals.
- Provide funds for CNMI to employ a Habitat Conservation Biologist, who is dedicated to reviewing DOD documents such as subsequent EIS's, monitoring impact of military activities, and liaising with DOD, CNMI political officials, and third parties about conservation issues of mutual interest.
- Provide funds to DFW/DLNR to hire additional staff for ongoing marine surveys of fish and invertebrates on Rota, Tinian, Saipan, and Pagan to monitor potential shifts in communities and biodiversity
- To monitor introduced species, provide funds for intensive surveys of marine waters include invertebrate specialists, application of molecular methods. Marine surveys of main ports for assessment of non-indigenous species would include rapid survey assessments of all access islands by professional staff; including the establishment of settling plates in harbors and landing sites for taxonomic and genetic analyses.
- Provide data on all surveys performed around FARALLON DE MEDINILLA for marine invertebrates, reef fishes, marine mammals and sea turtles. Provide access to FARALLON DE MEDINILLA's waters for DFW to perform independent surveys of fish, invertebrates and wildlife.
- Fund a study that would satellite tag species of marine mammals (especially Culver's beaked whale) and sea turtles to measure movement and behavioral response of animals to military activities.
- Fund a tag and recapture and acoustic tagging study on Tinian that would measure fish movement across exclusion zones, as well as active movement relative to military activities.

- Provide funds for DFW to establish a benthic monitoring team to monitor and compare impacted to control sites. This would involve hiring two staff, providing training, and providing equipment and funds for fuel to perform the work.
- Ensure that current and future Commonwealth laws and regulations governing the use of designated CNMI Conservation Areas be respected. Ensure that training plans are revised if boundaries of legally designated Conservation Areas change, or if new Conservation Areas are established.
- Improve communication and collaboration with CNMI-DFW on research and monitoring activities related to DOD training described in the MITT. Improvements should include collaborative projects, funding for independent research and monitoring from CNMI-DFW, regular data and information sharing, and consultation prior to training activities that are likely to impact CNMI's natural resources.
- Provide funds for CNMI to sample, monitor, and research the effects of the release, environmental persistence, and bioaccumulation of explosive and toxic residues left by propellant and ordnance use on and in the waters surrounding Saipan, Tinian, and Farallon de Medinilla.

The CNMI Department of Land & Natural Resources Division of Fish & Wildlife appreciates the opportunity to review and to provide comment on the EIS on the Marianas Islands Training Testing Activities, United States Department of the Navy. We hope that you will give considerable and favorable attention to our comments, and we ask for an open and ongoing exchange of information and a vigorous discussion of your future plans and their implications for our Commonwealth.

Respectfully yours,

Arnold I. Palacios
Secretary, DLNR

Manuel M. Pangelinan
Acting Director, DFW

cc: Governor Eloy S. Inos
Lt. Governor Jude U. Hofschneider
House Speaker Joseph Deleon Guerrero
Senate President Ralph Torres
Rota Mayor Melchor A. Mendiola
Tinian Mayor Ramon M. Dela Cruz
Saipan Mayor Donald G. Flores
Northern Islands Mayor Tobias Aldan
Loyal Mehrhoff, US Fish & Wildlife Ecological Services
Carl L. Goldstein, US Environmental Protection Agency
Michael Tosato, US National Oceanic and Atmospheric Administration
Ryan Winn, US Army Corps of Engineers

Appendix A

Animal Species in the CNMI Likely to be Negatively Impacted by MITT Activities

Marianas eight-spotted butterfly (*Hypolimnas octocula marianensis*)
Napoleon wrasse (*Cheilinus undulatus*)
Green sea turtle (*Chelonia mydas*)
Hawksbill sea turtle (*Eretmochelys imbric*ate)
Loggerhead sea turtle (*Caretta caretta*)
Olive ridley sea turtle (*Lepidochelys olivacea*)
Leatherback sea turtle (*Dermochelys coriacea*)
Micronesian gecko (*Perochirus scutellatus*)
Pacific slender-toed gecko (*Nactus pelagicus*)
Tide-pool skink (*Emoia atrocostata*)
Slevin's skink (*Emoia slevini*)
Pintail duck (*Anas acuta*)
Guam rail (*Gallirallus owstoni*)
Mariana common moorhen (*Gallinula chloropus*)
Micronesian megapode (*Megapodius laperouse*)
Mariana fruit dove (*Ptilinopus roseicapilla*)
White-throated ground dove (*Gallicolumba xanthonura*)
Hawai'ian petrel (*Pterodroma sandwichensis*)
Newell's shearwater (*Puffinus newelli*)
Wedge-tailed shearwater (*Puffinus puffinus*)
White-tailed tropicbird (*Phaethon lepturus*)
Red-tailed tropicbird (*Phaethon rubricauda*)
Brown booby (*Sula leuc*ogaster)
Red-footed booby (*Sula sula*)
Masked booby (*Sula dactylatra*)
Brown noddy (*Anous stolidus*)
Black noddy (*Anous minutus*)
HGreat frigatebird (*Fregata minor*)
Pacific golden plover (*Pluvialis fulva*)
Lesser sand plover (*Charadrius mongolus*)
Red-necked stint (*Calidris ruficollis*)
Gray-tailed tattler (*Tringa brevipes*)
Whimbrel (*Numenius phaeopus*)
Ruddy turnstone (*Arenaria interpres*)
Common sandpiper (*Actitis hypoleucos*)
Black-winged stilt (*Himantopus himantopus*)
Pacific reef heron (*Egretta sacra*)
Intermediate egret (*Mesophoyx intermedia*)
Little egret (*Egretta garzetta*)
Yellow bittern (*Ixobrychus sinensis*)
Mariana swiftlet (*Aerodramus bartschi*)
Collared kingfisher (*Todiramphus chloris*)
Micronesian starling (*Aplonis opaca*)
Rufous fantail (*Rhipidura rufifrons*)
Golden white-eye (*Cleptornis marchei*)
Rota bridled-white eye (*Zosterops rotensis*)

Tinian monarch (*Monarcha takatsukasae*)
Mariana crow (*Corvus kubaryi*)
Nightingale reed-warbler (*Acrocephalus luscinius*)
Pacific sheath-tailed bat (*Emballonura semicaudata*)
Mariana fruit bat (*Pteropus mariannus*)
Culver's beaked whale (*Ziphius cavirostris*)

Appendix B

Plant Species in the CNMI Likely to be Negatively Impacted by MITT Activities

Euphorbia sparrmannii var. *tinianensis*
Hernandia labyrinthica var. *ovigera*
Procris pedunculata
Elatostema calcareum
Serianthes nelsonii
Osmoxylon mariannensis
Nesogenes rotensis
Bulbophyllum guamense
Coelogyne guamensis
Cycas micronesica
Dendrobium guamense
Eugenia byranii
Heritiera longipetiolata
Nervilia jacksoniae
Solanum guamense
Tabernaemontana rotensis
Tuberolabium guamense

Commonwealth of the Northern Mariana Islands
OFFICE OF THE GOVERNOR
Division of Environmental Quality
P.O. Box 501304, Saipan, MP 96950-1304
Tel.: (670) 664-8500/01 Fax: (670) 664-8540
www.deq.gov.mp

From: Frank Rabauliman
Director
Division of Environmental Quality
Office of the Governor
Commonwealth of the Northern Mariana Islands
P.O. Box 501304
Saipan, MP 96950

Date: December 11, 2013

To: Naval Facilities Engineering Command, Pacific
Attention: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Subject: The Division of Environmental Quality's Review and Comments of the Mariana Islands Training & Testing Environmental Impact Statement/Overseas Environmental Impact Statement.

Dear MITT EIS/OEIS Project Manager:

The Division of Environmental Quality is vigilant against the degradation of CNMI's natural environment by military activities. Critical effort has been spent reviewing The Mariana Islands Training and Testing (MITT) EIS. DEQ has produced several sections of comments addressing aspects of our diverse islands. Within this document you will find five sections:

Section I. MITT-EIS General Comments for DEQ
This section comments on environmental issues of up most concern for DEQ, in particular sedimentation, marine debris, non-point source pollution, and toxins.

Section II. MITT-EIS General Comments for CNMI
This section attempts to capture the general concerns of CNMI, as it pertains to the economy, culture, and history of the Marianas.

Section III. MITT-EIS Environmental Comments
This section comments on over arching issues found within the EIS. It also contains environmental concerns that are not directly under the jurisdiction of DEQ.

Section IV. MITT-EIS Specific Comments for DEQ
This section is an attempt to dissect the EIS within the realm of DEQ's technical expertise. Numbered headings within this document directly reference the MITT EIS.

Section V. Comments for the Eliminated Marine Mammals Mitigation Measures
This section comments to the alternative mitigation measures for Marine Mammals that was considered but eliminated. Numbered headings within this document reference mitigation measures. Only the mitigation measures where a strong case for reconsideration was perceived is commented on.

Regards,

Frank Rabauliman, Director of the Division of Environmental Quality

Section I

Comment Number – I.a.
DEQ has been tasked by EPA to assure water quality throughout the CNMI. In recent years focused efforts to control erosion on land and reduce sedimentation on reefs has been and continues to be a priority of DEQ. Military activity in particular strike warfare is likely to increase sedimentation via land clearing and inadvertent fires from bombs. Sedimentation is quantified by measures of turbidity and TSS, both of which have water quality standards. Who will be monitoring the waters down land of strike warfare activities? If violations of water quality standards do occur how will they be addressed?

Comment Number – I.b.
The EIS affirms that the effects of sedimentation caused by underwater explosions will be temporary. There is truth in this, high sedimentation levels in the water column after underwater explosions is likely to be short lived. However, its effects on marine vegetation and even corals can be lethal especially if sediments settle on and smother these benthic organisms, which is likely to occur in calmer waters. Therefore the effect of sedimentation is dependent on the environment and should not be dismissed as simply temporary. Can the military reconsider their stance on the effects of sedimentation caused by underwater explosions?

Comment Number – I.c.
CNMI's natural resource agencies and non-governmental agencies have identified marine debris as a threat to the environment and economy of the Marianas. Some agencies have received federal funding to address this issue and are vigilant when keeping our shorelines clean. The EIS acknowledges that proposed activities which involve decelerators, parachutes, and the blowing up of targets will increase marine debris in our water. The EIS states that some of their trash is designed to sink. However, it is doubtful that all of the material they generate will sink, therefore an influx of debris is likely to occur on our shores. How will the military contribute to clean up activates to mitigate their contribution to marine debris?

Comment Number – I.d.
The EIS does not address non-point source pollution from land based sources such as sedimentation, fuel, oil, herbicide, and others that will be generated by military activities. If organisms such as trees, birds, marine mammals, sea turtles, corals, fish, seagrass, algae, invertebrates, and others are exposed to such pollutants the result can be lethal. What is the military doing to reduce such adverse effects?

Comment Number – I.e.
Due to previous military activity on Saipan toxic levels mercury, cadmium, and lead are being found in at the dump sites of Agingan and Banzai. Future studies will also consider fish, which are suspected to have toxic levels of these pollutants. How can the military assure the CNMI that their activities will not continue to pollute our environment?

Comment Number – I.f.
The EIS mentions that unexploded ordnance will be collected after training is complete, but how much effort will be devoted to this task? Saipan is still littered with UXO. This trash is a

constant threat to the people and environment of CNMI. UXO explosions during fire events has occurred, luckily no fatalities have been documented. Similar scenarios have been played out wherever the military has left their foot print. Why should the military be allowed to continue the degradation of our lands when they haven't cleaned up their mess from previous events?

Section II

Comment Number – II.a.
The basis of CNMI's economy is tourism which is largely reliant on the health of the environment. The proposed military activities will demise the health of our environment and thus the revitalization of CNMI's economy. How will the US compensate for undermining an economy that was just beginning to show signs of recovery?

Comment Number – II.b.
There are only a few beaches on Tinian making them a finite resource for tourist. The reef crest fronting these beaches is shallow and susceptible to amphibious landing. It is likely that these landings will degrade the aesthetic value of these beaches making them less appealing for tourist. Such actions can have adverse impacts on this island's economy, where tourist attractions and tourist themselves are limited. What activities does the military have planned to mitigate for these effects from amphibious landings?

Comment Number – II.c.
This document fails to assess the synergistic effect of disturbances and stressors on the environment, economy, and culture of the CNMI. For example how will the combined outcome of environmental degradation, noise pollution, and restricted access effect the quality of visit tourist receive? The combined consequence of all the mentioned factors is likely to be greater than a single one. Some may be able to tolerate one of these factors, but the synergistic effect of all can result in a less than desirable visit and poor reviews that will cause potential visitors to select alternative destinations. What activities does the military have planned to mitigate for these effects?

Comment Number – II.d.
Historically foreign interest in particular their military activities has repressed the people and culture of the CNMI. The proposed military activities will further exacerbate this through the destruction of historical sites and artifacts, restriction of access to land and sea; and the squandering of natural resources. A culture cannot persist without its history, land, and natural resources. How can the military say that they are defending the rights of people? When they continue to repress indigenous cultures and their rights.

Comment Number – II.e.
The green sea turtle is a cultural icon and revered by the indigenous presence in these islands. The take and disturbance of this species caused by military activities will have adverse affects on the already decimated turtle population. This take will only perpetuate the lost of cultural practices and beliefs in a community that has been historically repressed by foreign presence. A culture cannot persist without its natural resources. How can the military say that they are defending the rights of people? When they continue to repress indigenous cultures and their rights.

Comment Number – II.f.
The CNMI government has made rules and regulations to preserve their natural resources as a means to perpetuate their culture and boost their economy. In defiance, the military continues to resist these rules and regulations. Will the military be held responsible for these violations, by compensating the people of the CNMI for the take of their resources?

Comment Number – II.g.
Through time the military has taken, abused, and then returned lands in a decimated state. The military should be held accountable for their actions. Either they should clean up the mess they made at past sites prior to moving to a new site or they should go back to bombing those lands that are uninhabitable from past military activities.

Comment Number – II.h.
The Marianas Islands are unique and precious to the people of the CNMI, such a resource should not be compromised. Nevertheless, if the powers that be take our islands, will the people of the CNMI be compensated accordingly?

Section III

Comment Number – III.a.
This EIS is redundant, perplexing, and lengthy in ways that doesn't provide the reader information to properly understand the proposed activities and potential threats. Yet, it is vague and incomplete, leaving out critical information to properly review. How will future authors of the military's EISs remedy this problem?

Comment Number – III.b.
This EIS tries to promote a fallacy that the military has studied and is very knowledgeable of the natural resources and ecology of the Marianas. However, just the opposite is exposed when the document is reviewed. Inaccuracies pertaining to the presence and distribution of species abound, along with contradictive statements. Will these errors be corrected?

Comment Number – III.c.
Throughout this document the navy acknowledges the fatal effects that the proposed naval activities will have on plants, corals, fish, birds, marine mammals, and invertebrates; but it also concludes that the naval activities will have no impact on these populations. In essences this stance is a contradiction. Populations are made of individuals. A lost of an individual will have an effect on the population, albeit this lost may have limited effects on large populations. However, numerous indigenous and endemic organisms of the Marianas have small populations making the fecundity of every individual critical to local population dynamics, as such that a lost of a small number of individuals can have a transcending impact on the overall population. What actions will the military take to mitigate for these effects?

Comment Number – III.d.
This document states that habitat value does not depend on shape of the structure. I disagree with this. Substrate that is highly rugose (three dimensionally complex) often possess greater biodiversity and greater biomass than something that is less rugose, such as a rubble field. Greater rugosity often provides more holes and cracks which are preferred by most organisms relative to a rubble field. I use a rubble field for comparison because that may be the faith of CNMI's reefs after continued damage from military expended material and explosions. Why doesn't the military change its perception of habitat value based on shape of the structure?

Comment Number – III.e.
The federal government continues to restrict the indigenous presence from the taking endangered and threatened species. Yet, it is acceptable for the military to take these species. The federal government should be more consistent in regulating these takes if they want people to respect and abide to these regulations. What actions will the military take to mitigate for these effects?

Comment Number – III.f.
There are only a few beaches on Tinian making them a finite resource for this island. These beaches are known to serve as nesting habitat for the Green Sea Turtle. Due to the limited human population and isolation of these beaches these nest are often undetected by poachers and hatch successfully, serving as significant habitat to local turtle populations. The proposed amphibious landings at these beaches are likely to disrupt turtle nesting activities and destroy

turtle nest. Although mitigation efforts involving beach observation are considered they are unlike to capture turtle nesting activity that occur at night and the presence of eggs that can take up to 55 days to hatch. Why doesn't the military have better mitigation practices to preserve this threatened species?

Comment Number – III.g.
The proposed military activities violate numerous locally established rules and regulations:
-) The use of explosives in the taking of fish
-) The take of wildlife from a motorized vehicle
-) The killing of any threatened, endangered, or protected species
-) The take of land of indigenous organisms such as sea birds, forest birds, reptiles, and plants
-) The take of forest and sea bird eggs
-) Unpermitted land clearing and earth moving
Just to mention a few. How will the disregard of these rules and regulations be addressed?

Comment Number – III.h.
The EIS infers that underwater explosions will have minimal impact on coral reef organisms. One needs to go just a few decades back in time, when dynamite fishing was practiced on Saipan. The adverse impacts of this method were quickly realized and the government placed a ban on dynamite fishing. Why does the military continue to disregard such local regulations without compensation?

Comment Number – III.i.
The EIS acknowledges the enhanced threat of invasive species that comes with the increase of military activity and even discusses procedures that they follow to reduce the threat of these species. Unfortunately the document fails to present a response or mitigation plan and a corresponding budget if an invasive species introduction occurs because of military activities. This leads one to question the commitment of the military to mitigate the introduction of invasive species. Will the military provide the public with a response or mitigation plan and a corresponding budget for invasive species introduction due to military activities?

Comment Number – III.j.
Mitigation activities are insufficient and demonstrate the lack of reverence that the military has for the natural resources of the Marianas. Often mitigation is considered when no additional time or resources are required. Lookouts primary job is to watch for dangers and threats to the Navy's operations and property, marine mammals and sea turtles are secondary. The effectiveness of lookouts to detect these animals quickly diminishes at night or when visibility is bad such as during storms. In turn this also reduces the benefits of the Mitigation Zone Procedural Measures which is only enacted if marine mammals or sea turtles are detected by lookouts. The Mitigation Areas seem like a good idea, but the EIS fails to provide a map, which raises some suspicion as to the commitment of the Navy for this activity. In addition this mitigation activity contradicts the Navy's position on Avoiding Marine Species Habitats which was considered but eliminated. Can the military provide a better explanation for these mitigation activities?

Section IV

Comment Number – IV.a.
Pertaining to MITT EIS section: 2.2.2 Amphibious Warfare
Amphibious landings can potentially be harmful to the coral reef ecosystem and nesting sea turtles. How will the military assure the CNMI that coral reef organism or sea turtle and their eggs will not be harmed during amphibious landings? Will the reefs be monitored pre and post amphibious landings to assess the damage to the reef? Will the military immediately re-vegetate the area disturbed to prevent further erosions after the training exercise?

Comment Number – IV.b.
Pertaining to MITT EIS section: 2.2.3 Strike Warfare
Strike warfare will result in land clearing and potential inadvertent fires, both of which can result in sedimentation events. How will the military assure the CNMI that water quality will be sustained? Will water quality be monitoring to assess the effects of strike warfare? Will the military immediately re-vegetate the area disturbed to prevent further erosions after the training exercise?

Comment Number – IV.c.
Pertaining to MITT EIS section: 3.0.5.2.3.6 Ground Disturbance and Wildfires
This section summarizes an increase in explosives that will be used on FDM and mentions the likelihood of wildfires. This section focuses on the impacts of wildfires on species and habitats, but mentions nothing about erosion and successive water quality degradation that may result from the wildfires.

Comment Number – IV.d.
Pertaining to MITT EIS section: 3.1 Sediments and Water Quality
The EIS analyzes four "stressors," namely: explosives and explosive by-products, metals, chemicals other than explosives, and other materials. There is NO mention of erosion (as a stressor that affects sediments and water quality). Erosion can/will be caused by explosive use and/or missile impacts on land, and amphibious landings. The EIS analyses the quality of sediments, but not the generation of additional sediments and other suspended particles.

Comment Number – IV.e.
Pertaining to MITT EIS section: 3.1 Sediments and Water Quality
In the general descriptions of how the stressors affect the environment, the impact of large rivers on sediments and water quality is mentioned several times (pg 3.1-2 1st paragraph, pg3.1-3 2nd paragraph, pg3.1-3 4th paragraph; pg3.1-4 4th paragraph, pg3.1-5 last paragraph, 3.1-7 4th paragraph, and 3.1-42 3rd paragraph) implying that large rivers have a much greater impact on the environment than the training and testing activities, however, there are no large rivers in the study area - so mention of how large rivers affect sediments and water quality is irrelevant to this EIS. Especially section 3.1.3.3.8 Evaluation of Alternatives which states *"Potential impacts on sediments and water quality from chemicals other than explosives should be viewed in the following context: (1) nearshore sediments and water quality in many areas have been negatively impacted; in particular, a wide variety of chemicals are delivered to the ocean by major river systems; and (2) the vast majority of those impacts are from human-generated and*

land-based activities. The numbers of military expended materials discussed below reflect amounts expended annually for each type of material under each alternative."

Comment Number – IV.f.
Pertaining to MITT EIS section: 3.1.1.1.2.7 Influences of Marine Properties and Processes on Seawater Characteristics
"Runoff from coastal watersheds influences local and regional coastal water conditions, especially near large rivers." As stated above, there is no mention in this EIS of how the proposed activities will impact the quality of water runoff (added sediments?) from coastal watersheds - even though the EIS states here that runoff from coastal watersheds affect coastal water quality.

Comment Number – IV.g.
Pertaining to MITT EIS section: 3.1.3.1.1 Introduction (to Environmental Consequences)
"*...Detonating explosives may also disturb sediments and increase turbidity. Underwater explosions resuspend sediments in the water column. However, these impacts are minimal because, depending on site-specific conditions of wind and tidal currents, the sediment plume eventually dissipates as particles settle to the bottom or disperse. Therefore, this issue is not considered further."* We believe this issue should be considered further. The re-suspension and distribution of sediments in the water column has effects on marine life - especially corals. The re-suspension of sediments will also (temporarily) violate CNMI water quality standards.

Comment Number – IV.h.
Pertaining to MITT EIS section: 3.1.3.1.4.1 State Standards and Guidelines
"There are no existing Guam and CNMI standards and guidelines for sediments and water quality related to explosives and explosive by products." There may be no CNMI standard or guidelines for water quality related to explosives in particular - the CNMI does have Water Quality Standards that cover among other contaminants: suspended solids, turbidity, oil and petroleum products, and toxic pollutants.

Comment Number – IV.i.
Pertaining to MITT EIS section: 3.1.3.1.6.4 Summary and Conclusions for Explosives and Explosive Byproducts
"Chemical, physical, or biological changes in sediment or water quality would not be detectable." What about quantity or volume of sediment? As the amount of explosives used between the no-action Alternative, Alternative 1 and Alternative 2 increases - the amount of sediment generated would likely increase - and may even result in a violation of CNMI Water Quality Standards.

Comment Number – IV.j.
Pertaining to MITT EIS section: 3.1.4 Summary of Potential Impacts
Again, no mention of erosion as a potential stressor for sediment. Beach landings and other land based activities were not considered in the analysis. Why is Best Management Practices (BMP), which can help ease erosion, not mentioned?

Comment Number – IV.k.
Pertaining to MITT EIS section: 3.3 Marine Habitats
The EIS states that most bombs will explode at the surface, so that means some may explode on the bottom. Underwater explosives will have similar effects as dynamite fishing. How does the military plan on compensating the CNMI for the lost of reef and reef organisms from underwater explosions?

Comment Number – IV.l.
Pertaining to MITT EIS section: 3.3.3.1.1.1 No Action Alternative
Underwater explosions will have an effect on marine habitats. How will the organisms that utilize these habitats respond to these alterations?

Comment Number – IV.m.
Pertaining to MITT EIS section: 3.3.3.1.2 Substressor Impact on Marine Vegetation as Essential Fish Habitat from Explosives (Preferred Alternative)
Why does the EIS consider damages to the soft bottom to be short term and minimal when instead they may be permanent? Has the military assessed the effects that these holes will have on sand movement?

Comment Number – IV.n.
Pertaining to MITT EIS section: 3.3.3.2.1.1 No Activities Alternative
Most of the sandy beaches on Tinian are fronted by a reef crest and reef flat both of which are considered hard bottom. It would be difficult to avoid these habitats during an amphibious exercise. Why does the EIS not consider the damage that amphibious landing will have on these habitats?

Comment Number – IV.o.
Pertaining to MITT EIS section: 3.3.3.2.2 Impacts from Military Expended Materials
Why does the EIS not consider the secondary damage that Military Expended Materials will have on marine habitats after the initial impact? These materials and generated rubble can roll on the seafloor like a bowling ball causing further damage to marine habitats.

Comment Number – IV.p.
Pertaining to MITT EIS section: 3.3.3.2.2 Impacts from Military Expended Materials
The EIS states: *"value of these substrates as habitat, however, does not depend on the shape of the structure"* Why does the EIS state this? It is not true. Often habitat that is more three dimensionally complex possess greater biomass and diversity than a flat habitat.

Comment Number – IV.q.
Pertaining to MITT EIS section: 3.3.3.2.2 Impacts from Military Expended Materials
How will the military address the marine debris generated by decelerators and parachutes?

Comment Number – IV.r.
Pertaining to MITT EIS section: 3.3.3.2.2 Impacts from Military Expended Materials
How will the military assess the damage to marine habitats from exercises that sink ship hulls in deep water?

Comment Number – IV.s.
Pertaining to MITT EIS section: 3.3.3.2.2 Impacts from Military Expended Materials
Although military expended material can serve as artificial reefs it does not take the place of the marine habitat that will be destroyed by military activities. Why doesn't the military effective mitigate these activities?

Comment Number – IV.t.
Pertaining to MITT EIS section: 3.4 Marine Mammals
Beak whale stranding on Saipan in 2012 just so happen the same time that the military was acoustic testing. How will the military assure the CNMI that such events will not occur during proposed military activities?

Comment Number – IV.u.
Pertaining to MITT EIS section: 3.7 Marine Vegetation
The Acoustics and Physical Disturbance and Strike statements within the synopsis are a contradiction. First it states that: *"Underwater explosives could affect marine vegetation by destroying individual plants or damaging parts of plants"*. Then it goes on to say that: *" The impact of these stressors are not expected to result in detectable changes in growth, survival, or propagation"*

Comment Number – IV.v.
Pertaining to MITT EIS section: Table 3.7-1 Major Groups of Marine Vegetation in the Mariana Islands Training and Testing Study Area
Why is this table wrong? Sea grass is also found on the seafloor, All other plants are also found in the intertidal.

Comment Number – IV.w.
Pertaining to MITT EIS section: 3.7.2 Affected Environment
Numbers of species seem wrong. I don't think we have 10 species of seagrass and 16 species of mangroves in the Marianas.

Comment Number – IV.x.
Pertaining to MITT EIS section: 3.7.2.1 General Threats
The EIS states that: *"mangroves would be the most susceptible marine vegetation because contact with oil can cause death, leaf loss and germination failure"* However, any species residing in the intertidal zone would be exposed to similar stressors, right?

Comment Number – IV.y.
Pertaining to MITT EIS section: 3.7.2.2.6.1 Seagrasses
I don't think Tinian has seagrass beds along the northwestern, the northeastern, the southwestern and central eastern coastlines

Comment Number – IV.z.
Pertaining to MITT EIS section: 3.7.2.2.6.2 Mangroves
What 5 species of mangroves does CNMI have?

Comment Number – IV.aa.
Pertaining to MITT EIS section: 3.7.3.1.1 Impacts from Explosives
The EIS states that: *"If these vegetation types are near an explosion, only a small number of them are likely to be impacted relative to their total population level. The low number of explosions relative to the amount of seafloor macroalgae and single-celled algae in the Study Area also decreases the potential for impacts on these vegetation types."* Not true. There are some species of algae that are uncommon such as *Bornatella sphaerica*, *Halymenia dilatata*, and *Gibsmithia hawaiiensis*. Due to their low numbers mortality of just a few individuals can have an adverse impact on population dynamics.

Comment Number – IV.ab.
Pertaining to MITT EIS section: 3.7.3.1.1 Impacts from Explosives
The EIS states that: *"In addition, seafloor macroalgae are resilient to high levels of wave action (Mach et al. 2007)"* Not true for all alga species

Comment Number – IV.ac.
Pertaining to MITT EIS section: 3.7.3.1.1 Impacts from Explosives
The EIS states that: *"Underwater explosions also may temporarily increase the turbidity (sediment suspended in the water) of nearby waters, incrementally reducing the amount of light available to marine vegetation. Reducing light availability will decrease, albeit temporarily, the photosynthetic ability of marine vegetation."* Not true. If the sediments settle on the thallus of the algae, making the effects of sedimentation long lasting and potentially lethal.

Comment Number – IV.ad.
Pertaining to MITT EIS section: 3.7.3.1.1.1 No Action Alternative
The EIS states that: *"Although marine vegetation growth in the immediate area of explosions would be inhibited, long-term survival, annual reproductive success, or lifetime reproductive success of the population would not be impacted since recovery is likely."* Not true. There are some species of algae that are uncommon such as *Bornatella sphaerica*, *Halymenia dilatata*, and *Gibsmithia hawaiiensis*. Due to their low numbers mortality of just a few individuals can have an adverse impact on population dynamics.

Comment Number – IV.ae.
Pertaining to MITT EIS section: 3.7.3.1.1.2 Alternative 1
The EIS states that: *"Underwater explosions conducted for testing activities may injure or kill individual marine plants; however, exposure to these detonations would be limited to the vicinity of the explosions and would not pose a risk to marine vegetation communities"* Studies have shown that substrate altering disturbances such as ship groundings and storms can alter algal communities. Often a community composing of a diverse array of species exists prior to the disturbance. After the disturbance occurs the community can shift to a few opportunistic species that can alter the succession patterns.

Comment Number – IV.af.
Pertaining to MITT EIS section: 3.7.3.1.1.3 Alternative 2
The EIS states that: *"Underwater explosions associated with testing activities under Alternative 2 would disturb approximately 4,060 ft.2 (365 m2) per year of substrate in the Study Area"* What will be the total disturbed area at the end of the proposed activities? Will these explosion sites be monitored for recovery?

Comment Number – IV.ag.
Pertaining to MITT EIS section: 3.7.3.2 Physical Disturbance and Strike Stressors
The EIS states that: *"Since the occurrence of marine algae is an indicator of marine mammal and sea turtle presence, some mitigation measures designed to reduce impacts on these resources may indirectly reduce impacts on marine algae; see Section 5.3.2.2 (Physical Disturbance and Strike)."* I don't see the connection. Could the authors elaborate on this point?

Comment Number – IV.ah.
Pertaining to MITT EIS section: 3.7.3.2.1 Impacts From Vessels and In-Water Devices
The EIS states that: *"Seafloor macroalgae may be present in locations where these vessels and in-water devices occur, but the impacts would be minimal because of their resilience, distribution, and biomass Because seafloor macroalgae in coastal areas are adapted to natural disturbances, such as storms and wave action that can exceed 33 ft. (10 m) per second (Mach et al. 2007)"* not true for all algae. Some are soft and delicate like *Ventricaria ventricosa*, *Trichleocarpa fragilis*, and *Rhipidosiphon javensis*

Comment Number – IV.ai.
Pertaining to MITT EIS section: 3.7.3.2.1.1 No Action Alternative
"Disturbances to marine vegetation caused by training activities may result in opportunities for invasive or nuisance species to colonize these areas. Per Chief of Naval Operations Instruction (OPNAVINST) 5090.1C, the Navy will would prevent their introductions if possible, respond rapidly to control these species, monitor their populations, and restore the native species and habitats." Could the response plan and the associated budget be included in the EIS.

Comment Number – IV.aj.
Pertaining to MITT EIS section: 3.7.3.2.1.2 Alternative 1
There are only a few beaches on Tinian. Unai Babui, Unai Chulu, Unai Dankulo are considered the majority of the beaches. These are unique for Tinan. I don't think it's appropriate for amphibious landings. Where will the tourist swim? Where will the turtles lay their eggs? Will there be enough habitat for nesting turtles?

Comment Number – IV.ak.
Pertaining to MITT EIS section: 3.7.3.2.1.4 Substressor Impact on Marine Vegetation as Essential Fish Habitat from Vessels and In-Water Devices (Preferred Alternative)
Macroalgae and submerged vegetation are highly susceptible to disturbance from vessels (ex. boats, amphibious landing craft). What studies show that seagrasses and macroalgae aren't susceptible to disturbances from boats? The paragraph goes on into another contradiction. First the paragraph says that "*activities would have no impact*", then it says that impacts will be "*minimal and short term*".

Comment Number – IV.al.
Pertaining to MITT EIS section: 3.7.3.2.2 Impacts from Military Expended Materials
Floating target fragments could be considered marine debris tomorrow. How does the military propose to address the influx of marine debris in the Marianas?

Comment Number – IV.am.
Pertaining to MITT EIS section: 3.7.3.2.3 Impacts from Seafloor Devices
How will sites for anchor training be assess to assure the site is devoid of marine vegetation?

Comment Number – IV.an.
Pertaining to MITT EIS section: 3.7.3.3 Secondary Stressors
The EIS states that: *"The analysis included in Section 3.1 (Sediments and Water Quality) determined that neither state or federal standards or guidelines for sediments or water quality would be violated by the No Action Alternative, Alternative 1, or Alternative 2."* How does the military know without a doubt that military activities will not violate the water quality standards of total suspended solids and turbidity (measures of sedimentation)?

Comment Number – IV.ao.
Pertaining to MITT EIS section: 3.8 Marine Invertebrates
In general, this section provides extensive information on the 66 species of hermatypic corals that are proposed for listing under the Endangered Species Act. While this is a good start, it is negligent of the other roughly 200 species of coral found in the CNMI and the threats that they face. The authors seem to assume that the only corals of concern are those that are potentially going to be listed, while the focus should really be on the ecosystem as a whole.

Comment Number – IV.ap.
Pertaining to MITT EIS section: Table 3.8-1 Species Proposed for Endangered Species Act Listing within the MITT Study Area
The table uses common names which are rather arbitrarily assigned, with some of them even being inaccurate from what is commonly found in the scientific literature. What source was used for the common names?

Comment Number – IV.aq.
Pertaining to MITT EIS section: 3.8.2.1 Invertebrate Hearing and Vocalization
Coral sensory capabilities are particularly sensitive during spawning events. They rely heavily on their limited sensory capabilities to find suitable substrate to settle upon. Any additional stressors (acoustic, propulsive, etc.) could make this already difficult process even harder.

Comment Number – IV.ar.
Pertaining to MITT EIS section: 3.8.2.3.2 Habitat and Geographic Range
"...whereas clusters and semi-massive types..." The terms 'clusters' and 'semi-massive' are not typical when used in describing acroporid corals. What source was used and why wasn't more commonly used descriptors presented?

Comment Number – IV.as.
Pertaining to MITT EIS section: 3.8.3.3 Physical Disturbance and Strike Stressors
"With the exception of corals and other sessile benthic invertebrates, most mobile invertebrate populations recover quickly from non-extractive disturbance." What data is used to make this statement? Is there any data showing how invertebrates that rely on biogenic habitats react to non-targeted disturbances to their environment (ex., sea urchins)?

Comment Number – IV.at.
Pertaining to MITT EIS section: 3.8.3.3 Physical Disturbance and Strike Stressors
"If the sites of the activities are the same for repeated exercises, this could over time (years) alter the benthic composition, especially sessile invertebrates (e.g., coral)." Is there a schedule/plan for when, where and how often exercises will occur? Will monitoring of these areas happen before, during and after training exercises?

Comment Number – IV.au.
Pertaining to MITT EIS section: 3.8.3.3.3 Impacts from Seafloor Devices
"With the exception of corals and other sessile benthic invertebrates, most mobile invertebrate populations recover quickly from non-extractive disturbance." What is the source for this information? Pollution can severely damage organisms.

Comment Number – IV.av.
Pertaining to MITT EIS section: 3.8.3.6 Secondary Stressors
CNMI Earthmoving & Erosion Control Regulations (65-30-315) and CNMI Water Quality Regulations (65-130-530) are in place to help ensure that corals, reefs and other marine habitats are protected from disturbances. Nowhere in the document are these regulations acknowledged.

Comment Number – IV.aw.
Pertaining to MITT EIS section: 3.9.3.1.1 Analysis Background and Framework
The EIS says that military noises are bad for fish, yet this document does not address the impact it will have on this resource? Why does the EIS not address this impact?

Comment Number – IV.ax.
Pertaining to MITT EIS section: 3.9.3.1.1.1 Direct Injury
The military acknowledges that explosives kill fish. Why does the military continue such practices? Is the training really worth the squandering of our resources?

Comment Number – IV.ay.
Pertaining to MITT EIS section: 3.9.3.1.3 Impacts from Explosives and Other Impulsive Sound Sources
The EIS continues to promote the fallacy that a lost of some individuals will not have an impact on the population, but this is not true, especially for those species that are rare and uncommon.

Comment Number – IV.az.
Pertaining to MITT EIS section: 3.10.2.1.5.2 Cliff-Line Vegetation
Photo showing the decline in shrubs and trees on Farallon de Medinilla 1944-2012. How will continued military activities impact the flora and fauna on this island?

Comment Number – IV.ba.
Pertaining to MITT EIS section: 3.10.3.2.3 Impacts from Ground Disturbance
There is no mention of beach landings as a stressor (only troop movements on land). Beach landings have specific impacts on the beach communities, especially turtle nesting sites.

Comment Number – IV.bb.
Pertaining to MITT EIS section: 5.3.1.2.1.2 High-Frequency and Non-Hull Mounted Mid-frequency Active Sonar
The Littoral Combat Ship seem like something that needs to train in shallow water. What type of impact will such a boat have on the nearshore environment?

Comment Number – IV.bc.
Pertaining to MITT EIS section: 5.3.2 Mitigation Zone Procedural Measures
Seems like the "Mitigation Zone Procedural Measures" is dependent on the "Lookouts" if the lookouts do not see the whale then the mitigation zone procedural measures will not be applied. Why aren't better checks employed to enact the "Mitigation Zone Procedural Measures"?

Comment Number – IV.bd.
Pertaining to MITT EIS section: 5.3.2.1.2.1 Improved Extended Echo Ranging Sonobuoys
Why are mitigation zones being reduced?

Comment Number – IV.be.
Pertaining to MITT EIS section: 5.3.3 Mitigation Areas
Can a map of the Mitigation areas be provided?

Comment Number – IV.bf.
Pertaining to MITT EIS section: 5.3.3 Mitigation Areas
"Of note, the Marianas Trench Marine National Monument protects approximately 95,216 square miles of submerged lands and waters. Although the restrictions placed on the monument do not apply to military readiness activities, the Armed Forces shall ensure, by the adoption of appropriate measuresnot impairing operations or operational capabilities, that its vessels and aircraft act in a manner consistent, so far as is reasonable and practicable, with this proclamation (6 January 2009)." What exactly does this mean?

Section V

Comment Number – V.a.
Pertaining to the Mitigation Activity of: Seasonal and/or Geographic Limitations
Sounds like a good idea. From what I understand historically humpback whales have not frequented these waters during calving season until recently. The marine monitoring team and others have documented an increased number of sightings over the past two years. These sightings have occurred during calving and breeding season, a critical time in their life cycle. This could be considered new knowledge, a reason for the military to review current procedures. Due to the seasonality of humpback activity in the Marianas, a seasonal limitation is appropriate when humpback whales are considered. What are the numbers of humpback whales in the marianas?

Comment Number – V.b.
Pertaining to the Mitigation Activity of: Use of Dedicated or Independent Marine Mammal Observers to Implement Mitigation
Why can't the military use their biologist as marine mammal observers?

Comment Number – V.c.
Pertaining to the Mitigation Activity of: Use of Additional Detection Methods to Implement Mitigation (Shutdown Zones)
A number of additional detection methods are being proposed. The military seems inflexible here. They should at least be able to enact an additional detection method other that lookouts, in particular a method that would be effective at night, in times of low visibility, or during high seas. Especially since the mitigation zone procedural measures is only enacted when a lookout detects a marine mammal. Why aren't additional activities put into place to initiate the mitigation zone procedural measures?

Comment Number – V.d.
Pertaining to the Mitigation Activity of: Avoidance of Federal Marine National Monuments, including the Marianas Trench Marine National Monument
What are the numbers of marine mammals found in the Marianas Trench Marine National Monument?

Comment Number – V.e.
Pertaining to the Mitigation Activity of: Expansion of Exclusion Area Delineated for Use with Explosive Detonations
The military recognizes that if the exclusion zone were enlarged it would reduce take therefore they should implement such augmentations, especially because it has no affect on readiness preparation. Why isn't the exclusion zone increased?

Comment Number – V.f.
Pertaining to the Mitigation Activity of: Adopting Mitigation Measures of Foreign Nation Navies
If other nations are implementing measures to protect marine mammals, why doesn't the US do the same?

Department of Agriculture
Dipåttamenton Agrikottura

163 Dairy Road, Mangilao, Guam 96913

Edward J.B. Calvo
Governor

Raymond S. Tenorio
Lt. Governor

Director's Office	**300-7966/64; Fax 734-6569**
Agricultural Dev. Services	**300-7973/300-7967**
Animal Health	**300-7965**
Aquatic & Wildlife Resources	**735-3955/56; Fax 734-6570**
Forestry & Soil Resources	**300-7976; Fax 300-3201**
Plant Nursery	**300-7974**
Plant Inspection Facility	**475-1426/27; Fax 477-9487**

Mariquita F. Taitague
Director

Matthew L.G. Sablan
Deputy Director

December 12, 2013

Ms. Nora Macariola-See
Naval Facilities Engineering Command, Pacific
258 Makalapa Drive, Suite 100
Pearl Harbor, Hawaii
96860–3134.
Attn: MITT EIS/OEIS Project Manager

Email: Marianas.tap.eis@navy.mil

Subject: Comments on the Draft Environmental Impact Statement/Overseas Environmental Impact Statement for the Mariana Islands Training and Testing Activities

Hafa Adai:

The Draft Environmental Impact Statement/Overseas Environmental Impact Statement for the Mariana Islands Military Testing and Training (MITT DEIS) Volume I and II were released for public review September 13, 2013. The Guam Department of Agriculture, Division of Aquatic and Wildlife Resources requested and received a hard copy of the MITT DEIS for review pursuant to the National Environmental Policy Act of 1969 [42 U.S.C. 4321 *et seq*.; 83 Stat.852] (NEPA) on November 12, 2013.

The proposed action by the US Department of the Navy (DON) includes reevaluation and reauthorization of the training and testing activities reviewed in the Marianas Islands Range Complex (MIRC) in May 2010, with an expansion of the study area to include high seas and transit corridors not previously approved, as well as adjustments to locations and tempo of training and testing activities. The actions are proposed to achieve and maintain military readiness, to support and to conduct current, emerging, and future training and Research, Development, Test and Evaluation activities, while enhancing training resources through investment in Guam and the Commonwealth of the Northern Marianas Islands. The draft MITT DEIS commits at-sea and land-based training areas on Guam and CNMI, as well as transit corridors between Guam and CNMI.

As the local state agency mandated to monitor and protect Guam's biological resources, the Guam Department of Agriculture (DoAg) submits the following general comments to be addressed in the development of the MITT Final Environmental Impact Statement and Record of Decision. In addition, we have included comments in table form referencing specific document pages (see attachment).

1. First and foremost, DOD needs to provide a progressive, comprehensive plan for the recovery of native species on DOD property in consultation and coordination with DoAg. Without the ability to reintroduce federally endangered species on DOD property the cumulative impacts of DOD actions are jeopardizing the DoAg's ability to recover Guam's native species. Furthermore, DOD's failure to coordinate with DoAg as required by the Sikes Act of 1960 [16 U.S.C. *et seq.*; 74 stat. 1052], as amended, and recognize the DoAg's ability to assist DOD in meeting their Section 7 requirements under the Endangered Species Act of 1973 [16 U.S.C. 1531 *et seq.*: 87 Stat. 884], as amended, results in a waste of taxpayers' dollars. The DoAg further emphasizes the need to be consulted and notified in matters that may impact the natural resources of Guam.

2. Secondly, the Final EIS needs to outline how DON will address long-standing issues regarding timely access for the DoAg Division of Aquatic and Wildlife Resources (DAWR) staff to all DOD lands for the purpose of monitoring and management of Guam's natural resources. The DOAg-DAWR staff could complete monitoring of resources under annual federal funded grant objectives, without cost, or at a much lower cost to DON that is currently being contracted and assist with meeting Sikes Act coordination obligations. The current access requirements for DoAg-DAWR staff are cumbersome and prevent timely coordination as opposed to those procedures for federal employees and contractors.

3. The Final MITT DEIS needs to address another long-standing issue that is DOD's failure to comply with local laws. The MITT activities and study area include the Piti Marine Preserve Area that extends to the 600-foot contour. Any take of non-pelagic fishes within this area is a violation of Guam law.

4. The Final MITT DEIS must mitigate the cumulative impacts to recreational fishing in the oceanic areas that will be impacted by the proposed action. The NEPA documents for other proposed military activities indicate the closure of important fishing areas such as Ritidian and Pati Point. The additional loss of key recreational fishing areas proposed in the Draft MITT EIA is unacceptable.

5. Other boaters, including divers and other recreational users, also frequent many areas within the MITT study area. There is no clear indication of how extensive closures will be – do events last for an hour, or a day, or a week? The Final EIS and ROD need to minimize closure of areas regularly used by recreational boaters and identify clearly the space and time of the closures.

6. Prior to training exercises, the DON and USCG issue NOTMARs and NOTAMs to announce an exercise and to notify the public of potential hazards in the exercise area. DON must ensure these notices are adequately distributed to the public and with a much larger area proposed in the MITT distribution must be assessed for adequacy.

7. The ROD must clearly indicate how the Micronesia Biosecurity Plan will be implemented, including funding mechanisms, to prevent the spread of invasive alien species (IAS) throughout the region. For example, 100% inspection rates for brown treesnake (BTS) at ports of exit from Guam and entry points to other regional areas are necessary to ensure BTS does not impact bird, bat and lizard populations on other islands. These populations are necessary for the recovery of Guam's native ecosystem. Although there are currently BTS inspections of cargo and vessels from Guam, there is a potential for the system to be overwhelmed by the increase in tempo of activities. The MITT DEIS also needs to be mindful of other IAS that Guam could infect CNMI with that would be devastating to endangered wildlife and their habitats, i.e., little fire ant and coconut rhinoceros beetle.

8. Consistent monitoring of behavior and distribution of Mariana fruit bat/island swiftlet/common moorhen/megapode (and other terrestrial species of regional concern) must be conducted prior to and after MITT related activities in order to evaluate the impact of activities, particularly on species of greatest conservation need. Appropriate measures must be incorporated to reduce impacts to terrestrial species, as well as measures to avoid impacting species that aggregate when feeding in open water ocean. Impacts to aggregations of individuals in the expanded areas of MITT activities may impact species on a population level.

9. The assessment of potential effects to marine animals and habitat from underwater demolition needs more clarity and analysis. The habitat mapping needs to be more detailed, the Cetacean species that utilize the area proposed for the MITT need to be identified, as well as the impacts such activity will have on these species. The analysis also needs to include the impacts to sea turtles. The presence of ESA-listed sperm whales is well documented within three to five miles offshore in the Agat area. Effects to this species and the mitigation for these actions are not addressed in the MITT DEIS. The increased boat activity greatly increases the potential for boat strike of sperm whales. Navy lookouts undergo extensive training in order to qualify as a watch stander. Have the use of these watch standers been successful? How is success measured?

10. DoAg is concerned about the impact of landing craft exercises on the dolphins that reside in Agat Bay. The DON contended unavoidable impacts. The Navy recognizes the common occurrence of spinner dolphins within Agat Bay and has developed mitigation measures in consultation with NMFS under provisions of the MMPA. Beachmasters are shore-based observers with binoculars whose sole purpose is to ensure safety of craft including avoidance of marine and terrestrial animals. Beachmasters were to work with environmental monitors and the natural resource managers. These measures have been utilized - how successful have they been and how has that success been measured?

11. The MITT DEIS must address impacts to the existing community of resource users and the need to mitigate economic impacts by avoiding near shore populations and their habitats. The training activities themselves present additional challenges that may alter the landscape far beyond the closure period. The potential loss of marine life, whether through injury, mortality or simply scaring them out of the area, presents significant economic issues for tour operators who rely on a healthy population of marine animals for their tours. The underwater detonations, for example, could lead to the relocation of Agat Bay's resident dolphin pod, disrupting the dolphin-watch boats and other tours. The Navy recognizes the common occurrence of spinner dolphins within Agat Bay and has developed mitigation measures in consultation with NMFS under provisions of the MMPA, however more effort needs to be made to minimize impacts through avoidance and relocation of activities to areas of less impact.

12. It is probable that sea turtles would be affected by landing-craft training activities. The Navy agreed that landing craft training activities could potentially affect sea turtles within the MIRC. The Navy consulted with NMFS and USFWS Pacific Islands Field Office under provisions of Section 7 of the ESA to avoid, minimize and offset potential impacts associated with MIRC training on sea turtle nesting activity and activity in near shore and open ocean marine environments. How have these activities impacted sea turtles? What measures would be used to protect sea turtles in MITT. The use of LCACs and other equipment on sandy beaches can negatively impact sea turtle nesting and hatching success. Consultation with the local resource agency in addition to the Navy surveys can help avoid possible interactions.

13. The Final MITT DEIS must clarify impacts and identify necessary mitigation for fish mortality associated with soft bottom detonation operations in Apra Harbor. How have these activities in the MIRC impacted soft bottom habitat for species of ecological as well as fishery resource importance? Fish mortality associated with training activities within the MIRC are discussed in EIS, Section 3.9 (Fish and Essential Fish Habitat) but no mitigation is proposed to address this issue.

14. DoAg requests more effort made to either find alternatives that will cause fewer impacts, or to provide environmental and compensatory mitigation to offset impacts to the open ocean and near shore marine environments and the species that inhabit them. The Final MITT DEIS should include (similar to MIRC) a Range Monitoring Plan, reporting requirements, adaptive management, etc. Components of the monitoring and mitigation plans should be in cooperation with NMFS, USFWS and DoAg-DAWR. Monitoring and mitigation will be used both as: 1) a planning tool to focus Navy monitoring priorities (pursuant to ESA/MMPA requirements) across Navy Range Complexes and Exercises; and 2) an adaptive management tool, through the consolidation and analysis of the Navy's monitoring and watch stander (lookout) data, as well as new information from other Navy programs (e.g., research and development), and newly published non-Navy information.

Thank you for the opportunity and consideration of DoAg's comments on the Draft MITT EIS. We look forward to reviewing a more complete analysis of impacts in the final EIS that clearly identifies and addresses the potential impacts associated with the MITT activities and includes viable options for avoidance and mitigation.

We look forward to the Navy's response to our comments pertaining to the Navy's MITT DEIS.

Sincerely,

MARIQUITA F. TAITAGUE

Attachment(s):

cc: USFWS, Ecological Services
Bureau of Statistics and Plans, GCMP
Guam Environmental Protection Agency
USDA, Wildlife Services
NOAA, NMFS

No.	Title & Volume	Page	Paragraph	Subject	Statement	Comment	Commentor
1	MITT-DEIS-OEIS Volume 1	TOC-iii		3.0 Affected Environment and Environmental Consequences		There is no mention of the impacts on the Mariana Trench. What will be the impacts to the Mariana Trench?	DoAg-DAWR
3	MITT-DEIS-OEIS Volume 1	ES-13		Acoustics:	Use of acoustics and underwater explosives may result in marine mammal mortality	The use of acoustics and explosives that may impact marine mammals is by definition "take"	DoAg-DAWR
4	MITT-DEIS-OEIS Volume 1	ES-13		Section 3.4 Marine Mammals	Activities may result in Entanglement, and other harassments-ingestion of expended material, secondary stressors, etc.	These actions define specifically "take" of marine mammals that may be in the area. There should be information related to the survivorship of marine mammals in these situations.	DoAg-DAWR
5	MITT-DEIS-OEIS Volume 1	ES-14		Sea Turtles	use of sonar and other acitve acoustic devices may affect green, loggerhead, olive ridley, hawksbill, and leatherback sea turtles.	The actions decribed indicate there will be take. What are the mitigative actions?	DoAg-DAWR
6	MITT-DEIS-OEIS Volume 1	ES-15		Marine Birds	Acoustics, physical disturbance, and strikes may impact resident seabirds	How was it determined that it will most likely not impact sea birds?	DoAg-DAWR
7	MITT-DEIS-OEIS Volume 1	ES-17		Marine Invertebrates	No effects on corals, EFH, etc.	The effects of activities such as, explosives, sonar, and other such activity may impact EFH. Needs further analysis.	DoAg-DAWR
9	MITT-DEIS-OEIS Volume 1	ES-18		Fish	No effects on fish	Although there are no listed fish or critical habitat, impacts to fish will occur with the proposed use of explosives, weapons, etc.	DoAg-DAWR
10	MITT-DEIS-OEIS Volume 1	ES-19		Terrestrial Species and Habitats	No effects on listed species. No training in areas identified as critical habitat.	Mariana crows and Micronesian kingfishers are not found on FDM. The megapode and moorhen may be affected by activities. The no impact to the megapode needs to be explained further.	DoAg-DAWR
13	MITT-DEIS-OEIS Volume 1	2-23	2.3.1		Sonar and other accoustic sources	What are the impacts of such devices on marine mamals and other marine animals? Animals that rely on accoustic communication may be impacted by these devices.	DoAg-DAWR
14	MITT-DEIS-OEIS Volume 1	2-23	2.3.1		Sonar and other accoustic sources	The impact of passive sonar on marine mammals is indicated as not significant. What evidence is there to support the statement?	DoAg-DAWR
15	MITT-DEIS-OEIS Volume 1	2-23	2.3.1	2.3 Descriptions of Sonar,ordance/munitions...		The paragraph defines SONAR but does not describe the range. When SONAR is used what is its range/radius of impacts? How far away does a whale/dolphin need to be to avoid being affected?	DoAg-DAWR

16	MITT-DEIS-OEIS Volume 1	2-32	2.3.2		Extended echo ranging sonobuoys	This device explodes to provide sonar an active source of sonar information - what is the impact to marine mammals?	DoAg-DAWR
17	MITT-DEIS-OEIS Volume 1	2-37	2.3.6		Military expended materials	There is a list of 8 types of military expended debris - sonobuoys, toropedo launch accessories, decclerators/parachutes, projectiles and bombs, missiles and rockets, countermeasures, targets,and ballast/anchors.	DoAg-DAWR
18	MITT-DEIS-OEIS Volume 1	2-39		2.4.1	Proposed training activities	There are listed 80 proposed training activities. Debris produced by AAW and STW would be of concern.	DoAg-DAWR
19	MITT-DEIS-OEIS Volume 1	2-42		2.4.1	Table 2.4-1	Major Training activities - Assurance that no invasive species are being transported with the movement of personnel, vessels and equipment needs to be addressed. Up to 78 training days are indicated in the table.	DoAg-DAWR
20	MITT-DEIS-OEIS Volume 1	2-62		2.7 3.1	The replacement of old aircraft with new ones is planned.	What information is available that noise and discharge from new aircraft will not impact listed species?	DoAg-DAWR
21	MITT-DEIS-OEIS Volume 1	2-69 thru 2-91		2.8.2	Table showing the No action. Alternative 1-preferred, and Alternative-2	There are activities within the No Action Alternative that already have been approved. The Preferred and Alternative 2 propose large increases in activities for the various exercises and weapons and missile explosives;	DoAg-DAWR
22	MITT-DEIS-OEIS Volume 1	3.0-1		3.0-	Affected Environment and Environmental Consequences	The impact due to sound on biological resources would be significant.	DoAg-DAWR
23	MITT-DEIS-OEIS Volume 1	3.3-20	3.3.3.1.1.2	Acoustic stressors - Training activities- underwater detonations	...Training activities under Alternative 1 would disturb approx 18,3000 sq. ft. (1,700 sq. m.) per yer of substrate in the study area.	Mitigation will be needed to address the impacts to fish in the study area. Fish are important to the coral reef ecosystem and highly valuable to residents of Guam.	DoAg-DAWR
24	MITT-DEIS-OEIS Volume 1	3.3-20 and 21		Acoustic stressors - Testing Activities and Training Activities	Training activities=~50 explosions/yr. Testing Activities= 24 underwater detonations. All localized in the Study Area.	Not clear if the 24 detonations are part of the 50 explosions per year, or if they are additional. Needs clarification.	DoAg-DAWR
25	MITT-DEIS-OEIS Volume 1	3.3-30-31	2nd ¶	3.3.3.2.2- Impacts from Military Expended Materials	In heavily used coastal areas around FDM, annual monitoring since 1999 has determined that impacts to the marine habitats from military expended materials have been insignificant...	What exactly was being monitored since 1999 in FDM? Where are the reports of the monitoring? The results of the monitoring needs to be shared with local/regional resource agencies. As activities increase there will be greater impacts to marine habitat, especially if debris from the action is not recovered.	DoAg-DAWR
26	MITT-DEIS-OEIS Volume 1	3.3-23	2nd ¶	3.3.3.2.1- Impacts from Vessels and In-Water Devices	Vessels, in-water devices...could accidently impact any habitat types... The shore ...typically high dynamic because of its constant exposure to wave action and cycles of erosion and sedimentation....	MITT activities near shore and in deep waters will generate stress on the habitat typeswhich will be in addition to the natural wave action and weather. Habitat Recovery will be prolonged and may result in declining fish populations.	DoAg-DAWR

27	MITT-DEIS-OEIS Volume 1	3.6-15	Table 3.6-5	3.6.2.6.1 Guam - Known Rookery/Nesting Locations on Department of Defense Owned or Leased Lands within the MITT Study Area.	Table identifies Pati Point to Tagua Point in AAFB as Rookery/Nesting Locations for black noddies and brown noddies.	Andersen Housing area is a nesting location for noddies and white terns. Needs to be added.	DoAg-DAWR
28	MITT-DEIS-OEIS Volume 1			3.6 Migratory Birds		No discussion on foraging grounds for seabirds within the Study Area near Guam.	DoAg-DAWR
29	MITT-DEIS-OEIS Volume 1	3.6-53 and 54		3.6.3.1.2.4 Alternative 1 - Acoustic stressors	Impacts from Alternative 1 training and testing actions	Mitigative actions will need to be defined to address impacts on great frigate bird populations within the study area.	DoAg-DAWR
30	MITT-DEIS-OEIS Volume 1	3.6-62 and 64		3.6.3.1.3.5 Alternative 1- Aircraft and vessel noise	Impacts from Alternative 1 training and testing actions	Impact of fixed wing aircraft shadows above nesting birds should be examined.	DoAg-DAWR
31	MITT-DEIS-OEIS Volume 1	3.6-95 and 96		Marine Birds - Table 3.6-7 Summary of ESA effects determinations for Seabirds for the Preferred Alternative.		A summary table on effects determination for all migratory birds present within the MITT study area for the preferred alternative should be provided. ESA protected species, as identified in Table 3.6-7, are not likely to occur within the MITT study area.	DoAg-DAWR
32	MITT-DEIS-OEIS Volume 1	3.7-10	2nd ¶	3.7.3.1.1.2 Alternative 1 - Marine Vegetation	Underwater and surface explosions... not expected to pose a risk to seagrass because: (1) impact area of underwater explosions is very small relative to seagrass distribution....	Clarification for 'small' and 'distribution' is needed. Seagrass is important habitat for sea turtles and impacts to the marine habitat/vegetation are important.	DoAg-DAWR
33	MITT-DEIS-OEIS Volume 1				general comment	Under preferred Alternative for Marine habitat and vegetation, it is stated that acoustic stressors impact the less than 1 percent of designated areas within the MITT study area. The vast majority of the study area includes deep open waters with much less being near shore habitats. One percent is relatively high when impacts on seagrass or the shore are considered.	DoAg-DAWR
34	MITT-DEIS-OEIS Volume 1				general comment	MITT EFHA report states preferred alternative will have minimal and short term impacts on Marine Vegetation within the Study Area. There is no reference to indicate how this was determined.	DoAg-DAWR
36	MITT-DEIS-OEIS Volume 2	3.8-55		3.8.3.1.2.2 Alternative 1 - Marine Inverts	No explosions would occur in areas known to support coral species proposed for listing.	Adjacent areas that may have coral species proposed for listing should be avoided to allow for increased distribution os listed corals.	DoAg-DAWR
37	MITT-DEIS-OEIS Volume 2	3.10-53		3.10.3.1.1.2 Alternative 1- Acoustic stressors - Terrestrial Species and Habitats	...the most important stressors to wildlife communities...on FDM are 1. percussive force... 2. habitat alteration...	Fruitbats and megapodes in FDM will be impacted; mitigation is needed to address both species of concern.	DoAg-DAWR

38	MITT-DEIS-OEIS Volume 2	3.10-55		3.10.3.1.2 Impacts from Aircraft Noise - Terrestrial Species and Habitats	AAFB completed an aircraft noise and wildlife response study…to monitor the effects of noise events associated with aircraft ops to fruit bat and crow.	Study was focused on a small sample sizes (<30 bats at colony, one crow in MSA). The study should not be used as reference to impacts for bats within the MITT Study Area. Guam's population is small and should be treated as a population worth saving.	DoAg-DAWR
39	MITT-DEIS-OEIS Volume 2	3.10-55		3.10.3.1.2 Impacts from Aircraft Noise - Terrestrial Species and Habitats	AAFB completed an aircraft noise and wildlife response study…to monitor the effects of noise events associated with aircraft ops to fruit bat and crow.	The shadows of aircraft passing over roosting or nesting areas will impact bats and nesting birds.	DoAg-DAWR
40	MITT-DEIS-OEIS Volume 2	3.10-57		3.10.3.1.2.2 Alternative 1 and Alternative 2 - Terrestrial Species and Habitats	Combat search and rescue training on Rota under Alt. 1 and Alt. 2 will not change relative to the No Action Alt.... Aircraft overflights assoc. with training activities may affect, but not adversly affect, fruit bats and crows on Rota.	Aircraft overflights will adversely affect nesting crows and colonial bats. Increased nest abandonment, flushing and abandonment of colony are likely impacts. If pups are present, flushing may cause mortality to unprotected young.	DoAg-DAWR
41	MITT-DEIS-OEIS Volume 2	3.10-60		Table 3.10-6 - Terrestrial Species and Habitats		Within the Terrestrial Resource Potentially Impacted column, DEIS should include Guam's Species of Greatest Conservation Need within the MITT Study Area. The white-throated ground dove may occur in AAFB and Fena proper and should be included in the table.	DoAg-DAWR
42	MITT-DEIS-OEIS Volume 2	3.10-9		Table 3.10-3 - Terrestrial Species and Habitats		Include Guam in the table for the White throated ground dove. The white throated ground dove is known to occur on Guam (AAFB, NavMag).	DoAg-DAWR
43	MITT-DEIS-OEIS Volume 2	3.10-72		3.10.3.3.1 Impacts from Invasive Species Introductions - Terrestrial Species and Habitats	After identifying pathways associated with a particular activity, risks are reduced by implementing policies and procedures to reduce to occur within a particular introduction pathway.	Previous NEPA and Section 7 documents indicate that a Micronesia Biosecurity Plan would be developed to address the increase in military activities within the region. DoD must assure Federal and Local resource agencies of 100% inspection rates to prevent the spread of IAS through military actions.	DoAg-DAWR
44	MITT-DEIS-OEIS Volume 2	3.10-75		3.10.4.1 Combined Impacts of all stressors - Terrestrial Species and Habitats		Although noise may have a greater impact on species within the SA, visual stressors should also be addressed. Nesting birds and fruit bats in a colony may be disturbed by near flight aircrafts, especially in large-scale exercises or activities. Stress in nesting crows was observed when the shadows of F-16 jets passed over. When the Pati colony had over 25 bats, almost all reacted (moved to lower canopy) to a HC5 hovering above the roosting trees.	DoAg-DAWR

45	MITT-DEIS-OEIS Volume 2	3.10-76 and 77		3.10.4.2.2 Summary of Endangered Species Act Effects Determination - Terrestrial Species and Habitats	USFWS PIFWO issued BO for proposed training activities within the MIRC.	The BOs issued for the MIRC, ISR STRIKE, NWF BEDDOWN, KILOWHARF, Marine Relocation, etc. are specific to each proposed project. Additional activities within the MITT should be concerned with the cumulative impact to the natural resources within Guam and CNMI.	DoAg-DAWR
46	MITT-DEIS-OEIS Volume 2	3.12-20		Table 3.12-6: Galvez Bank and Santa Rosa Reef - Socioeconomic Resources		Location of W-517 Missile Training Hazard Area should be strategically placed further away from the Galvez Banks, Santa Rosa Reef and White Tuna Banks. The MITT Study Area is large enough to cater to the adjustment.	DoAg-DAWR
47	MITT-DEIS-OEIS Volume 2	3.13-8		3.13.2.7 High Explosive Ordnance Detonation Safety - Public Health and Safety	...the Navy uses the following general and underwater detonation procedures:....	There are no references referring to the retrieval of detonation debris or the recovery of ordinance that failed to explode. This is a public safety hazard.	DoAg-DAWR
48	MITT-DEIS-OEIS Volume 2	3.13-4		3.13.2.2 Safety and Inspection Procedures - Public Health and Safety	Military personnel are responsible for ensuring that impact areas and targets are clear before commencing hazardous activities.	What measures will ensure that the general public (fishers) are notified prior to commencing any exercises in water?	DoAg-DAWR
49	MITT-DEIS-OEIS Volume 2	4-18		4.4.4 Marine Habitats - cummulative impacts	The area of hard bottom potentially impacted represents a negligible percentage (less than 1 percent as analyzed in Section 3.3, Marine Habitats) of the total hard bottom habitat in the Study Area.	The percentage refers to the entire Study Area. The percentage impacted should be specific to total area of hard bottom substrates present within the site of activity. The impact to hard bottom substrates will be greater then the one percent referenced in the DEIS.	DoAg-DAWR
50	MITT-DEIS-OEIS Volume 2	3.3-17		Figure 3.3-6: Fish Aggregating Devices Near Guam - Marine Habitats		Piti Floating Mine Neutralization Site is within a Marine Preserve Area. The site should be moved to another area that is not a preserve.	DoAg-DAWR
51	MITT-DEIS-OEIS Volume 2	3.3-17		Figure 3.3-6: Fish Aggregating Devices Near Guam - Marine Habitats		Outlet Apra Harbor Underwater Detonation site is within the area where nesting sea turtles occur. Exercises should not occur when turtles are present or during nesting activities. Measures to inspect for presence of sea turtles within the site prior to commencing exercise are needed.	DoAg-DAWR
52	MITT-DEIS-OEIS Volume 2	4-13		Sediments and water quality - Cumulative Impacts	The long term impacts would arise from unexploded ordance...would be negligible because:...	DoD should be held accountable for cleaning debris within the Study Area. No remnants or debris should be left in the environment.	DoAg-DAWR

54	MITT-DEIS-OEIS Volume 2	4-18		Marine Habitats - cumulative impacts	The area of hard bottom potentially impacted represents a negligible percentage of the total hard bottom habitat in the Study Area.	Analysis needs to be more specific and assess impacts to marine habitat (hard bottom habitat) specifically where activities occur and not generally over the entire Study Area. Damages to hard bottom habitat will require a long-term recovery which is not condusive to maintaining healthylocal populations.	DoAg-DAWR
55	MITT-DEIS-OEIS Volume 2	4-19		Marine Mammals - cumulative impacts	Mortality or injury could be caused by underwater explosions or vessel strikes...sonar use.	EIS proposes for a 'watchman' crew member on ships to determine if study area is cleared from marine mammals before activities commence. DoD will need to ensure that the study area is cleared of nonparticipants as the EIS mentions. DoD should be responsible to recover and seek treatment for any injured marine mammals within the Study Area.	DoAg-DAWR
56	MITT-DEIS-OEIS Volume 2	4-22		Sea Turtles - cumulative impacts	Impacts of Alt. 1 and 2 that might contribute to cumulative impacts on sea turtles include mortality, injury, and short-term disturbance or behavioral modification... caused by explosions, vessel strikes or injury caused by sonar use.	Watchman' crew should also be on alert for sea turtles the heavily use the areas within the Study Area. Additional stress to the species should be avioded for the conservation of the species. DoD should be responsible to recover and seek treatment for any injured sea turtles within the Study Area.	DoAg-DAWR
57	MITT-DEIS-OEIS Volume 2	4-26		Marine Birds - Cumulative Impacts	Most of the proposed activities would be widely dispersed in offshore areas...potential for interactions...is low.	During seasonal fishing (tuna season) marine birds (noddies, terns) forage in large groups. Offshore activities may impact marine birds within the Study Area.	DoAg-DAWR
58	MITT-DEIS-OEIS Volume 2	4-26		Marine Birds - Cumulative Impacts	it is unlikely that training and testing activities would influence nesting...	Preferred Alternative training activities will impact nesting marine birds on FDM, Tinian, Rota, Guam.	DoAg-DAWR
59	MITT-DEIS-OEIS Volume 2	4-26		Marine Birds - Cumulative Impacts	While limited amount of mortality could occur, no population level impacts would be expected.	Offshore foraging areas should be avoided. A loss of large numbers of individuals may impact populations.	DoAg-DAWR
60	MITT-DEIS-OEIS Volume 2	4-27		Marine Vegetation - Cumulative Impacts		Draft EIS/OEIS does not describe mangrove habitats. How will the proposed MITT activities impact mangroves within the MITT area?	DoAg-DAWR
61	MITT-DEIS-OEIS Volume 2	4-27		Marine Vegetation - Cumulative Impacts	Most training and testing activities would occur in areas where seagrasses and other attached marine vegetation do not grow.	Marine vegetation areas should be highlighted as areas of concern and no activities should occur there.	DoAg-DAWR
62	MITT-DEIS-OEIS Volume 2	4-28		Marine Invertebrates - Cumulative Impacts	...many of these actions and their associated cumulative impacts on marine invertebrates cannot be determined...	Cumulative impacts on marine invertebrates are not discussed in the DEIS must be determined with specificity and certainty prior approval of the EIS.	DoAg-DAWR

63	MITT-DEIS-OEIS Volume 2	4-28		Marine Invertebrates - Cumulative Impacts	Any impacts from the Proposed Action resulting injury or mortality would be to a relatively small number of individuals.	How is 'relatively small number' defined in the EIS? What is the amount being compared to? The biological resources within the MITT Study Area is minimal as is.	DoAg-DAWR
64	MITT-DEIS-OEIS Volume 2	4-28		Fish - Cumulative Impacts	...many of these actions and their associated cumulative impacts on fish cannot be determined...	Cumulative impacts from other actions for fish not discussed in this EIS must be determined with specificity and certainty proir approval of the EIS.	DoAg-DAWR
65	MITT-DEIS-OEIS Volume 2	4-28		Fish - Cumulative Impacts	Any impacts from the Proposed Action resulting injury or mortality would be to a relativcly small number of individuals.	How is 'relatively small number' defined in the EIS? What is the amount being compared to? The biological resources within the MITT Study Area is minimal as is.	DoAg-DAWR
66	MITT-DEIS-OEIS Volume 2	4-28		Fish - Cumulative Impacts	No population level impacts are anticipated.	EIS stated 'Many of the actions and their associated cumulative impacts on fish cannot be determined with any specificity or certainty at this time' but they conclude that overall injury and mortality on fish would be low because no population level impacts are not anticipated? It is not clear how the EIS indicates low impacts on fish when it can't determine the impacts from all the actions.	DoAg-DAWR
67	MITT-DEIS-OEIS Volume 2	4-29		Terrestrial Species and Habitats - Cumulative Impacts		EIS identifies 'Critical Habitat' for Guam and Rota, however, it does not address habitat that is essential for the recovery of federal and locally listed endangered species. Designated areas proposed for the MITT are in highly sensitive areas for the recovery of endangered species.	DoAg-DAWR
68	MITT-DEIS-OEIS Volume 2	4-29		Terrestrial Species and Habitats - Cumulative Impacts		EIS fails to discuss invasive species impacts. Most of the NAVY fleet will arrive from other US bases where invasive species may occur. Mitigation to inspect vessels prior to approaching the islands must be conducted before docking.	DoAg-DAWR
69	MITT-DEIS-OEIS Volume 2	4-29		Terrestrial Species and Habitats - Cumulative Impacts	The only significant impacts to a terrestrial species, from training and testing activities would be on the Micronesian megapode.	EIS should include the possible impacts on the Mariana fruit bat and the breeding sites for marine birds.	DoAg-DAWR
70	MITT-DEIS-OEIS Volume 2			Standard Operating Procedures, Mitigation, and Monitoring		The chapter defines standard operation procedures, mitigation and monitoring for the MITT activities. It fails to provide how DoD will implement activities to minimize or avoid any impacts to the resources.	DoAg-DAWR
71	MITT-DEIS-OEIS Volume 2	5.69		Standard Operating Procedures, Mitigation, and Monitoring - Reporting		The EIS identifies the Navy's commitment to documenting and reporting relevant aspects of training and testing activities. It fails to identify what resource agencies it will be reporting to. Will the local agencies receive reports?	DoAg-DAWR

72	MITT-DEIS-OEIS Volume 2			General comment		Access to DoD lands should be granted to GovGuam natural resource agencies, including UOG's Marine Lab professors and personnel.	DoAg-DAWR
73	MITT-DEIS-OEIS Volume 2			General comment		Coordination with local agencies to develop and implement mitigation actions.	DoAg-DAWR
74	MITT-DEIS-OEIS Volume 2			General comment		Summary of past EIS's and the cumulative impacts on resources should be included in the FEIS.	DoAg-DAWR

COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS

Eloy S. Inos
Governor

Jude U. Hofschneider
Lieutenant Governor

11 DEC 2013

Naval Facilities Engineering Command, Pacific
Attention: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

MITT EIS/OEIS Project Manager:

As Governor of the Northern Mariana Islands, I send you these comments on the Navy's Draft Environmental Impact Statement ("DEIS") for training and testing within the Mariana Islands Range Complex. In short, this Administration is deeply concerned about the impacts of these proposed activities on marine wildlife in the CNMI, particularly on marine mammals, which remain grossly understudied in the region.

My specific comments with respect to the DEIS are provided below. However, many of the political leaders of the Northern Mariana Islands, myself included, are profoundly troubled by the expansive efforts of the Department of Defense to acquire additional property and control over our islands and the waters adjacent thereto for military (or defense responsibility) purposes.

These DOD efforts to increase control over property belonging to the CNMI is in conflict and contrary to Section 802 of the Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America (in which the United States affirmed that it has no need for or intention to acquire any greater interest in property belonging to the CNMI). The MITT final environmental impact statement evaluating training and testing within the Mariana Islands Range Complex must consider the military's proposal to control more CNMI property in relation to the provisions in Section 802 of the CNMI Covenant.

Specifically, as the DEIS indicates, the Navy intends to further intensify its activities around the islands, as part of an increased deployment into the Western Pacific that began in the last decade. Under its preferred alternative, the Navy would annually run approximately 2500 hours of hull-mounted, mid-frequency sonar and many more thousands of hours of other active acoustics (DEIS at 3.0-25); and each year it would detonate approximately 984 in-water explosives with a net explosive charge of 5 lb. or greater (DEIS at 3.0-28), in addition to thousands of smaller explosives and other types of ordinance.

Caller Box 10007 Saipan, MP 96950 Telephone: (670) 664-2200 /2300 Facsimile: (670) 664-2211/2311

Collectively, these activities are associated with a variety of environmental impacts on marine mammals and other marine biota, including disruptions in foraging and other vital behaviors, hearing loss, physical injury such as lung damage, and mortality. The DEIS itself estimates that Navy activities would take marine mammals approximately 409,970 times during the proposed 5-year authorization period, including some 133,510 instances of temporary hearing loss and 285 cases of permanent hearing loss or injury (DEIS at 3.0-114, 115, 143, 147).

Over the last several years, the scientific literature on anthropogenic noise, much of it funded by the Navy, has begun to produce evidence of population-level effects from range activity on disparate marine mammal taxa. This includes evidence of substantial demographic alteration in beaked whales resident to the Navy's AUTEC testing range in the Bahamas (Claridge 2013; see also Tyack et al. 2011, New et al. 2013), and evidence of disruption by naval mid-frequency sonar of metabolic rates in blue whales on the Navy's Southern California range, which the authors conclude may pose a significant risk to the recovery of blue whales in the Pacific (Goldbogen et al. 2013). These new studies join a larger cohort on diverse sources of anthropogenic noise, showing effects that are conducive to long-term impacts on individuals and populations (*e.g.*, Miller et al. 2009, Hatch et al. 2012, Melcon et al. 2012, Rolland et al. 2012, DeRuiter et al. 2013).

We are further concerned that the Navy's take estimates, high as they may be, undercount exposures to disruptive levels of anthropogenic noise and to injury from in-water detonations. To take but one example, the Navy heavily reduces its estimates of marine mammal hearing loss, injuries, and mortalities on the assumption that its lookouts will detect marine mammals as effectively as experienced biologists in a NOAA line-transect survey (DEIS at 5-17). This assumption is implausible for many reasons, beginning with the high sea states typically found in our region, which impede aerial and ship-based surveillance. Moreover, a series of recent controlled exposure and opportunistic studies indicate that the Navy's risk functions, used to estimate adverse exposures to mid-frequency sonar, are excessively high and non-conservative for a number of species (Melcon et al. 2012, DeRuiter et al. 2013, Goldbogen et al. 2013, Harris et al. 2013).

Additionally, the Navy does not include any beaked whale mortalities within its take estimates, despite a previous stranding (one live) of two individual beaked whales on Saipan August 2011 (Schofield 2011), which we believe may have been coincident with a naval exercise, and a long record of association of naval sonar with beaked whale mortality and injury (*e.g.*, Evans and England 2001, Fernandez et al. 2005, Hooker et al. 2009, Hooker et al. 2011). Relatively naïve populations of beaked whales, such as are found around our islands, may be at particular risk to this type of impact (Cox et al. 2006). Similarly, the Navy predicts that not a single marine mammal mortality would result from the use of underwater explosives, notwithstanding the many hundreds of detonations it proposes or the reported death of several common dolphins during a recent mine countermeasures exercise in its Silver Strand facility off San Diego, California (U.S. Navy 2011).

Active acoustics and explosives present a particular hazard to island-associated populations, as these populations are typically low in abundance, genetically isolated from

others in their region, and range-limited. In Hawaii, for example, a multinational anti-submarine warfare exercise was associated with a mass embayment of 150-200 melon-headed whales (Southall et al. 2006, Brownell et al. 2009). Had the event not occurred in a well-populated area, and had rescuers not succeeded, after more than 24 hours, in leading the group back out to sea, mortalities would have exceeded the limit of what NMFS then considered sustainable for the population by a factor of 10 or more. As is the case with Hawaii (Faerber and Baird 2010), standings could well go undetected within the CNMI given low population density and other factors, reducing the likelihood of effective rescue and response. Further, island-associated populations may be subject to repeated sub-lethal effects from high-intensity noise—effects to which, given the unpredictability of the activity, they are unlikely to habituate (Wright et al. 2007; see also Tyack et al. 2011, DeRuiter et al. 2013).

For these reasons, we make the following essential recommendations for the establishment of marine mammal mitigation areas within the CNMI and for additional effort at baseline data acquisition.

A. Habitat Protection Areas

There is general consensus within the scientific community that protecting important habitat represents the most effective means currently available of reducing the impacts of mid-frequency sonar on marine mammals (*e.g.*, Agardy et al. 2007, Parsons et al. 2008, Dolman et al. 2009, OSPAR Commission 2009, Convention on Biological Diversity 2012). Indeed, the U.S. National Oceanic and Atmospheric Administration itself reached this conclusion, in its 2010 review of naval sonar mitigation, noting the inadequacy of other Navy measures (Lubchenco 2010). Analogously, proper siting, in conjunction with an effective real-time monitoring protocol, can reduce risk of marine mammal injury and mortality from underwater detonations.

Nonetheless, no portion of the vast Mariana Island Range Complex was excluded by the Pacific Fleet from training and testing activities during the present five-year authorization period (75 Fed. Reg. 45527, 45549-45553). Nor does the Navy's new DEIS propose any such mitigation for marine mammals and sea turtles during the next authorization period, beginning in 2015.[1] Instead, while noting that "practical science-based mitigation measures, including temporal or geographic constraints within the study area," could be implemented later in the regulatory process, the DEIS suggests that to identify them now would be "premature" (DEIS at 2-51).

Respectfully, we believe that the National Environmental Policy Act, with its emphasis on transparency and public participation, requires consideration of reasonable alternatives and mitigation measures at the present stage of review, and we believe that such consideration cannot be premature while the Navy is already engaged in extensive training and testing activity around our islands.

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[1] While the DEIS proposes restrictions on certain bombing and mine countermeasure activities in the immediate vicinity of shallow coral reefs, shipwrecks, and live hard-bottom habitat (DEIS at 5.50), no protective areas for marine mammals and other marine wildlife, and none for the vast majority of the Navy's activities, are suggested.

The CNMI believes that the following habitat-based mitigation measures are reasonable, conservative, science-based, and necessary to minimize risk.

(1) *Marine Mammal Mitigation Zone #1.*— Exclude sonar and explosives training and testing from the vicinity of the islands of the CNMI, landward of the 3500m isobath.

Island association, and the genetic or social isolation of island populations, has been observed in odontocete species in various parts of the world, including the Society Islands, American Samoa, the Canary Islands, and the Hawaiian Islands (e.g., Mayr and Ritter 2005, Oremus et al. 2007, 2012, Johnston et al. 2008). The main Hawaiian Islands, which fall at roughly the same latitude as the Northern Marianas, provide the most direct point of comparison. Multiple lines of evidence (tagging, mark-recapture, and biopsy) show that every odontocete species that has been examined there is distinct from other populations within the Hawaiian EEZ and Central Pacific (e.g., Andrews et al. 2006, McSweeney et al. 2007, Baird et al. 2008, McSweeney et al. 2009, Oleson et al. 2010). In some instances, the population structuring is even more discrete, with island-specific populations occurring in some species and island-specific social clustering in some populations (e.g., Aschettino et al. 2011, Martien et al. 2011, Baird et al. 2012). While biopsy and full mark-recapture results are not yet available for the CNMI, initial satellite-tagging data are indicative of site fidelity for several species, including spinner dolphins, bottlenose dolphins, rough-toothed dolphins, and short-finned pilot whales (Hill et al. 2013a). Additionally, spinner dolphins, bottlenose dolphins, and short-finned pilot whales have been resighted at the same and other islands within the small study area over the course of three survey years (NMFS 2013b). Further analysis of population structure, distribution, and abundance is essential; however, based on our knowledge of other island systems, the first few years of data from the Marianas, and the distinct risks posed to resident marine mammal populations, near-island habitat should be protected.

In Hawaii, insular populations of odontocetes are generally concentrated within the 3500m isobath around the islands (NOAA 2012; Baird et al. 2013). Movements of spinner dolphins, bottlenose dolphins, rough-toothed dolphins, and short-finned pilot whales within the CNMI, and sightings of beaked whales, appear consistent with this finding (Hill et al. 2013a). Although the Navy tends to site sonar activities beyond 3nm and explosives activities beyond 12nm from shore (*see* DEIS at 2-69 to 2-90), these distances are insufficient to protect important near-island habitat, as the bathymetry generally extends beyond them.

(2) *Marine Mammal Mitigation Zone #2.*— Exclude sonar and explosives training and testing from the West Mariana Ridge to the 3500m isobath around the ridge, between roughly 13° and 18°N.

A chain of conical seamounts (extinct volcanoes) comprises the West Mariana Ridge, on the far side of the Mariana Basin. Some seamounts (including the Pathfinder, Arakane, and Suruga Seamounts between 142°-143°E) rise to summits less than 50m below sea level (Miller et al. 2008). These seamounts support a rich diversity of coral reef and continental slope species, and previous surveys have shown dense concentrations of biological productivity: high planktonic production, and large schools of small and predatory fishes including skipjack and other species of tuna (Tsukomoto 2006; Miller et al. 2008).

Consistent with this, multiple sightings of several cetacean species known to prefer high bathymetric relief were made during the Navy's 2007 line-transect survey on or near the West Mariana Ridge, including two of the survey's three beaked whale sightings (U.S. Navy 2007 at 3-17, 3-20, 3-21, 3-23). Similarly, recent analysis of passive acoustic data acquired during the same survey showed multiple detections of comparable species around the ridgeline (U.S. Navy 2012 at 107, 108), and recent satellite tagging effort showed use of the ridge by at least one false killer whale tagged off Rota (Hill et al. 2013a). The evidence is indicative of a biologically important feature that should be protected.

A buffer area should be established around both Marine Mammal Mitigation Zones. For its Humpback Whale Cautionary Area off the Maui Complex, in the Hawaiian Islands, the Navy applies a buffer of 5km (50 C.F.R. § 216.174(a)(1)(xxvii)). Given, however, the large numbers of marine mammal takes that are nominally expected to occur at greater distances (DEIS at 3.4-109), the CNMI believes that the Navy should establish a wider buffer for its powerful category MF1 sonar systems, to the maximum extent practicable.

B. Additional Effort to Acquire Baseline Data

In 2011, an independent Scientific Advisory Group, which the Navy convened to evaluate its monitoring program across all of its offshore ranges, found a high need for baseline data acquisition within the Mariana Island Range Complex (Scientific Advisory Group 2011, U.S. Navy 2013). Consistent with this, and pursuant to the terms of its current Marine Mammal Protection Act authorization, the Navy is funding a multi-year marine mammal research effort here. This research, which is largely implemented through small-vessel surveys around Rota, Saipan, and Tinian (in addition to Guam), includes mark-recapture, tagging, and biopsy studies, and should aid in defining population structure, estimating abundance, and determining distribution of marine mammal populations in our region (U.S. Navy 2012). The present effort also includes two placements of High-Frequency Acoustic Recording Packages (HARPs), one west of Saipan and one off Tinian, for acquiring information on baleen whales and other species further offshore (U.S. Navy 2012).

The CNMI commends the Navy on this much-needed research program and strongly supports its continuation beyond the present 5-year authorization cycle. In addition to the small-vessel and HARP-based research described above, which should continue to remain the priority, and after careful review of the 2012-2015 monitoring plan (U.S. Navy 2012), we make the following recommendations for further study.

(1) *Conduct small-vessel surveys in the islands north of Tinian.*— Although the Navy has historically used areas north of Tinian for training, particularly on and around Farallon de Medinilla, small-vessel surveys are currently limited to Guam and the southern portion of the CNMI (U.S. Navy 2012). It is necessary to expand this effort to the northern islands to acquire a more complete picture of population structure, abundance, and habitat use in the region. As with the present effort in the south, surveys should be conducted across multiple seasons and for more than one year, analogous to the multi-island survey effort taking place around the main Hawaiian Islands.

(2) *Conduct a towed passive acoustic survey.*— Research in the Southern California Bight indicates that towed passive acoustic surveys greatly improve the effectiveness of visual surveys in detecting and defining beaked whale habitat (Yack et al. 2013). In the Marianas, where routinely high sea states exacerbate the difficulties inherent in beaked whale visual detection, use of such surveys may be essential for beaked whales, and useful for other species. Optimally, the survey should be run in line transects; alternatively, it may be possible to acquire sufficient data using relatively inexpensive drift recorders, without the use of a survey vessel (pers. comm., SWFSC).

(3) *Acquire passive acoustic data on the West Mariana Ridge.*— As noted above, the Navy has installed two HARPs off Saipan and Tinian, to supplement its small-vessel survey effort with data on marine mammal occurrence further offshore (U.S. Navy 2012). For analogous reasons, we recommend that a similar effort be made for the West Mariana Ridge, a prominent oceanographic feature that, again, is likely to represent high-use habitat for marine mammals and their prey.

(4) *Ensure funding for full analysis of photo-ID and mark-recapture data.*— While the Navy's Marine Species Monitoring Plan for Fiscal Years 2013-15 supports analysis of photo-ID and mark-recapture data for purposes of producing marine mammal abundance estimates (U.S. Navy 2012), it does not specifically provide for analysis of the same data for other critical purposes, such as defining population structure and determining species distribution. The Navy should clarify that support will be provided for these purposes.

The CNMI looks forward to working with the Navy on implementing these provisions and furthering our mutual interests in the protection of marine species.

Respectfully,

ELOY S. INOS
Governor – Northern Mariana Islands

Caller Box 10007 Saipan, MP 96950 Telephone: (670) 664-2200 /2300 Facsimile: (670) 664-2211/2311

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MARINE MAMMAL COMMISSION

23 October 2013

Mr. P. Michael Payne, Chief
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3225

Dear Mr. Payne:

The Marine Mammal Commission (the MMC), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the National Marine Fisheries Service's (NMFS) 24 September 2013 (78 Fed. Reg. 58524) and the letter of authorization (LOA) application submitted by the U.S. Department of the Navy seeking issuance of regulations under section 101(a)(5)(A) of the Marine Mammal Protection Act. The regulations would authorize the taking of marine mammals incidental to training and research, development, test, and evaluation activities conducted from 2015 to 2020 within the Mariana Islands Training and Testing study area (MITT). The Commission is commenting concurrently on the Navy's Draft Environmental Impact Statement/Overseas Environmental Impact Statement (DEIS) regarding the proposed activities. The MMC also has commented on other draft environmental impact statements and previously proposed regulations for similar activities at other Navy training and testing study areas, including the Hawaii-Southern California Fleet Training and Testing study area (HSTT; 10 July 2012, 5 November 2012, 7 March 2013 MMC letters).

RECOMMENDATIONS

The Marine Mammal Commission recommends that, prior to publishing the proposed rule, the National Marine Fisheries Service require the Navy to—

- either adjust its density estimates for all species by adding some measure of uncertainty (e.g., two standard deviations) or to use the upper confidence interval and then re-estimate the numbers of takes accordingly;
- (1) use 145 rather than 152 dB re 1 μPa^2-sec as the temporary threshold shift (TTS) threshold for high-frequency cetaceans exposed to acoustic sources, (2) use 169 rather than 172 dB re 1 μPa^2-sec as the TTS thresholds for mid- and low-frequency cetaceans exposed to explosive sources, (3) use 145 rather than 146 dB re 1 μPa^2-sec as the TTS threshold for high-frequency cetaceans for explosive sources, and (4)(a) adjust the permanent threshold shift (PTS) thresholds for high-frequency cetaceans exposed to acoustic sources and behavioral thresholds for low-, mid-, and high-frequency cetaceans exposed to explosive sources (i.e., by 20 and 15 dB, respectively) and (b) adjust the behavioral thresholds for low-, mid-, and high-frequency cetaceans exposed to explosive sources (i.e., by 5 dB) based on those decreases in the TTS thresholds;
- (1) use 171 and 194 dB re 1 μPa^2-sec as the TTS thresholds for phocids and otariids, respectively, exposed to explosive sources and (2) adjust the PTS and behavioral thresholds

by 15 and 5 dB, respectively, for both phocids and otariids based on those decreases in the TTS thresholds;

- use its spatially and temporally dynamic simulation models rather than simple probability calculations to estimate strike probabilities for specific activities (i.e., movements of vessels, torpedoes, unmanned underwater vehicles and expended munitions, ordnance, and other devices);
- provide the predicted average and maximum ranges for all impact criteria (i.e., behavioral response, TTS, PTS, onset slight lung injury, onset slight gastrointestinal injury, and onset mortality), for all activities (i.e., based on the activity category and representative source bins), and for all functional hearing groups of marine mammals;
- use passive and active acoustics, whenever practicable, to supplement visual monitoring during the implementation of its mitigation measures for all activities that could cause PTS, injury, or mortality;
- if an animal is not observed to have left the mitigation zone after a shutdown, use a second clearance time category of 60 minutes for deep-diving species (i.e., beaked whales and sperm whales);
- derive the takes estimates for Level A harassment and mortality for mine neutralization activities in which divers use time-delay firing devices based on the possibility that marine mammals could enter the mitigation zones when the explosives detonate and updated, more realistic swim speeds; and
- request the total numbers of model-estimated Level A harassment and mortality takes rather than reducing the estimated numbers of Level A harassment and mortality takes based on the Navy's proposed post-model analysis.

BACKGROUND

The Navy proposes to conduct training and testing activities (1) at both at-sea ranges near and land-based training areas on Guam and the Commonwealth of the Northern Mariana Islands (the CNMI), (2) in operating areas and special-use airspace in the region of the Mariana Islands that are part of the Mariana Islands Range Complex (MIRC) and the Complex's surrounding seas, and (3) in the transit corridor between the MIRC and the Hawaii Range Complex. The activities would involve the use of low-, mid-, high- and very high-frequency sonar, weapons systems, explosive and non-explosive practice munitions and ordnance, high-explosive underwater detonations, expended materials, airguns, electromagnetic devices, high-energy lasers, vessels, underwater vehicles (including gliders), and aircraft.

RATIONALE

Uncertainty in density estimates

The Navy estimated marine mammal densities in MITT based on (1) models that use direct survey sighting data and distance sampling theory, (2) models that use known or inferred habitat associations to predict densities (e.g., relative environmental suitability (RES) models), typically in areas where survey data are limited or non-existent, or (3) extrapolation from neighboring regional density estimates or population/stock assessments based on expert opinion (Department of the Navy 2013). The Navy did note that estimates from both RES models and extrapolated densities

include a high degree of uncertainty (Department of the Navy 2013)—although it doesn't appear that the Navy included a measure of uncertainty (i.e., standard deviation, coefficient of variation, etc.) in those estimates.

For example, the Navy indicated that, in the absence of any other density data in this region, the minke and humpback whale density estimates were based on an LGL Limited (2008) survey in southeast Asia. Similarly, the data regarding *Kogia* spp. originated from line-transect surveys in Hawaii (Barlow 2006). The Navy believes that those data provide a reasonable approximation given their habitat assumptions (i.e., a mix of bathymetry but primarily deep water habitat), but noted the uncertainty regarding how representative these density data are to MITT. Further, the Navy used data from Fulling et al. (2011) to estimate the densities of various mysticetes and odontocetes. Although those surveys were conducted in Guam and the CNMI, Fulling et al. (2011) acknowledged that their estimates were probably of low precision and were underestimated because sighting conditions during the surveys were poor, with 66 percent of the total effort occurring in Beaufort sea states of 4 to 7.

The MMC understands that density data are not available for all areas in which activities occur, and in areas where such data are available the densities could be underestimated. However, the MMC continues to believe that action proponents, including the Navy, should use the best available density estimate plus some measure of uncertainty (i.e., mean plus two standard deviations, mean plus the coefficient of variation, the upper confidence interval) for each species. If one uses a "best" density estimate, there is a 50 percent change that the actual density is either greater or lesser than that estimate. In this case, the density estimates from Fulling et al. (2011) have an associated coefficient of variation, and that uncertainty could be incorporated into the density estimates. Further, the Navy indicated that uncertainty characterized in the original density data references were catalogued and retained for potential later use. Therefore, those values should be readily available for analysis. Therefore, the MMC recommends that NMFS require the Navy either to adjust its density estimates for all species by adding some measure of uncertainty (e.g., two standard deviations) or to use the upper confidence interval and then re-estimate the numbers of takes accordingly.

Criteria and thresholds

The Navy proposed to estimate the numbers of takes resulting from its activities by adjusting received sound levels at different frequencies based on the hearing sensitivity of various groups of marine mammals at those frequencies. The adjustments were based on "weighting" functions derived by Southall et al. (2007) and Finneran and Jenkins (2012; Type I and Type II weighting functions, respectively). Type I weighting functions (see Figure 1 in Southall et al. 2007) are flat over a wide range of frequencies and then decline at the extremes of the animal's hearing range. Type II weighting functions (Finneran and Jenkins 2012) are used only for cetaceans and combine the precautionary Type I curves developed by Southall et al. (2007) with equal loudness weighting functions derived from empirical studies of bottlenose dolphins (Finneran and Schlundt 2011).

The MMC considers the theory behind those weighting functions to be reasonable. However, the amplitudes of the final Type II weighting functions appear to have been shifted, lowering the sound exposure levels (SELs) at all frequencies by roughly 16–20 dB (compare Figures

2 and 6 of Finneran and Jenkins (2012)). For sonar-related activities, Finneran and Jenkins (2012) reduced the TTS thresholds for acoustic sources for low- and mid-frequency cetaceans (see Table 2 in Southall et al. 2007 for information on functional hearing groups) by 17 dB, assuming they rounded up from 16.5 dB. However, they only reduced the TTS threshold for high-frequency cetaceans by 18.3 rather than 19.4 dB (Table 4 in Finneran and Jenkins (2012)). Because data are lacking for TTS thresholds for high-frequency cetaceans exposed to acoustic (i.e., tonal) sources, Finneran and Jenkins (2012) indicated that a 6-dB correction factor then was added to the TTS threshold (because it was derived from exposure to non-explosive impulsive sources (i.e., from airguns) rather than acoustic sources) based on the method outlined in Southall et al. (2007). However, the MMC's understanding is that Southall et al. (2007) did not use a 6-dB correction factor to extrapolate between impulsive and acoustic thresholds, but rather to estimate PTS thresholds from TTS thresholds based on peak pressure levels. Therefore, the MMC does not support the increase of the reduced TTS threshold by 6 dB for the high-frequency cetaceans.

Further, it is unclear how the explosive thresholds (i.e., for underwater detonations) were adjusted downward to account for the amplitude decrease in the Type II weighting functions. For example, Finneran and Jenkins (2012) indicated that they used Finneran et al. (2002) TTS data of 186 dB re 1 μPa^2-sec to determine the TTS threshold for explosives for mid-frequency cetaceans, which also was supported by Southall et al. (2007). But if one uses the purported method of subtracting 16.5 dB from that threshold, the resulting Type II weighted SEL would be 169.5 (it appears it should be rounded down to 169 based on the Finneran and Jenkins (2012) document) rather than 172 dB re 1 μPa^2-sec. Finneran and Jenkins (2012) proposed to use 172 dB re 1 μPa^2-sec for low-frequency cetaceans as well. Lastly, they appear to use a correction factor of 18 rather than 19.4 to adjust the Type II weighted SEL for high-frequency cetaceans. The MMC is concerned that the TTS thresholds for explosive sources that the Navy used not only are greater than they should be based on the methods described but also are used as the basis for the PTS and behavioral thresholds. Thus, if those thresholds were not adjusted by the appropriate amplitude factor, the Navy may have underestimated the numbers of takes of marine mammals. To address these concerns, the MMC recommends that NMFS require the Navy to (1) use 145 rather than 152 dB re 1 μPa^2-sec as the TTS threshold for high-frequency cetaceans exposed to acoustic sources, (2) use 169 rather than 172 dB re 1 μPa^2-sec as the TTS thresholds for mid- and low-frequency cetaceans exposed to explosive sources, (3) use 145 rather than 146 dB re 1 μPa^2-sec as the TTS threshold for high-frequency cetaceans for explosive sources, and (4)(a) adjust the PTS thresholds for high-frequency cetaceans exposed to acoustic sources and behavioral thresholds for low-, mid-, and high-frequency cetaceans exposed to explosive sources (i.e., by 20 and 15 dB, respectively) and (b) adjust the behavioral thresholds for low-, mid-, and high-frequency cetaceans exposed to explosive sources (i.e., by 5 dB) based on those decreases in the TTS thresholds .

For determining TTS thresholds for pinnipeds for underwater detonations, the Navy used data from Kastak et al. (2005) and extrapolation factors from Southall et al. (2007). Kastak et al. (2005) estimated the average SEL for onset-TTS for pinnipeds exposed to octave-band underwater sound centered at 2.5 kHz (i.e., mid-frequency sound). However, underwater detonations produce broadband sound in the low-frequency range. The MMC recognizes that the data provided by Kastak et al. (2005) may be the only data available, but it is unclear if those data provide an appropriate basis for estimating the relevant thresholds. More importantly, the extrapolation factors from Southall et al. (2007) were not stated specifically in the Navy's analysis for underwater detonations, but it appears that the Navy used 6 dB. As noted in the previous paragraph, Southall et

al. (2007) seem to have used 6 dB as the extrapolation factor for determining PTS thresholds from TTS thresholds based on peak sound pressure levels, not for extrapolating from acoustic to explosive thresholds. Further, Southall et al. (2007) determined the TTS threshold for harbor seals exposed to pulsed sound (explosive sources) by using a correction factor of 12 dB to reduce the Type I threshold of 183 dB re 1 μPa^2-sec for mid-frequency cetaceans, which equates to 171 dB re 1 μPa^2-sec. The MMC believes that threshold should have been used by the Navy rather than the 177 dB re 1 μPa^2-sec. Similarly, the threshold for otariids should be 194 rather than 200 dB re 1 μPa^2-sec. Further, as stated previously, the TTS thresholds serve as the basis for the PTS and behavioral thresholds and could have been underestimated. Therefore, the MMC recommends that NMFS require the Navy to (1) use 171 and 194 dB re 1 μPa^2-sec as the TTS thresholds for phocids and otariids, respectively, exposed to explosive sources and (2) adjust the PTS and behavioral thresholds by 15 and 5 dB, respectively, for both phocids and otariids based on those decreases in the TTS thresholds.

Probability of strike

The Navy estimated the probabilities of vessels, expended munitions, and non-explosive materials (e.g., sonobouys) striking a marine mammal in its DEIS. The Navy's method for determining those strike probabilities was based on simple probability calculations. For example, it used a Poisson model to estimate the probability of ship strikes based on the historical rate of ship strikes. Although the use of the Poisson model is not unreasonable for modeling the occurrence of rare and random events, such as a ship striking a marine mammal, the assumption that the encounter rate will remain at historical levels is questionable because the Navy proposes to increase the number of training and testing activities, the abundance of marine mammals could change (or as previously stated, could have been underestimated), and both the distribution of marine mammals and Navy activities may not be random. For these reasons, the Navy should provide a more accurate assessment based on the best available information for marine mammals and the locations and scheduled times of its activities.

In addition, the Navy estimated the probability of spent munitions or non-explosive materials striking marine mammals in Appendix G of its DEIS. However, that approach and associated number of takes do not appear to be included in its application for promulgation of regulations. The Commission believes it is important and scientifically sound to include such an analysis in the Navy's request for regulations and encourages the Service to require such analyses of impacts. In the Navy's DEIS, it simply compared the aggregated footprint of some specific marine mammal species with the footprint of all objects that might strike them. Both of those were based only on densities of marine mammals in the action area and expected amount of materials to be expended within a year in those areas. By combining marine mammal densities and those activities over space and time into a single calculation, the Navy provided only a crude estimate of strike probabilities for the average condition, which likely was underestimated based on the shortcomings of the density data (as previously discussed). Here, again, neither marine mammals nor Navy activities are distributed homogeneously in space or time. To provide a more reliable estimate of possible takes from munitions and materials, the Navy should incorporate spatial and temporal considerations in its calculations to estimate takes. For example, the Navy's model for determining takes of marine mammals from sound-producing activities can account for the movement of sound sources and marine mammals. Using that model to estimate the probability of strike, the Navy could

change the data collected by the animat dosimeters from a received sound level to a close approach distance, which would result in more realistic strike probabilities.

For the HSTT Final Environmental Impact Statement/Overseas Environmental Impact Statement (FEIS), the Navy indicated that it considered using a dynamic simulation model to estimate strike probabilities but determined that use of historical data was more appropriate for the analysis. The Navy believed that those data account for real-world variables over many years, and any model would be expected to be less accurate than the use of actual data. The MMC disagrees with that conclusion. First of all, the activities under the Preferred Alternative would increase over baseline (i.e., the No Action Alternative). As an example, the DEIS indicated that the number of training activities involving vessel movement would increase by approximately 300 percent over the No Action Alternative and using the historical rate of ship strikes based on lesser numbers of vessels would underestimate the probability of ship strikes under the Preferred Alternative. Further, the MMC supports the use of actual data relevant to the activities proposed under the alternatives. However, those data should be used to seed the dynamic simulation models rather than in the current crude calculations of strike probabilities. Therefore, the MMC again recommends that NMFS require the Navy to use its spatially and temporally dynamic simulation models rather than simple probability calculations to estimate strike probabilities for specific activities (i.e., movements of vessels, torpedoes, unmanned underwater vehicles and expended munitions, ordnance, and other devices).

Mitigation and monitoring measures

Many of the proposed activities involve mitigation measures that currently are being implemented in accordance with previous environmental planning documents, regulations, or consultations. Most of the current mitigation zones for activities involving acoustic (e.g., mid- and high-frequency active sonar) or explosive sources (e.g., underwater detonations, explosive sonobuoys, surface detonations) were designed originally to reduce the potential for onset of TTS. For the DEIS, the Navy revised its acoustic propagation models by updating hearing criteria and thresholds and marine mammal density and depth data. Based on the updated information, the models now predict that certain activities may have adverse effects over greater distances than previously expected. Due to the ineffectiveness and unacceptable operational impacts associated with mitigating those large areas, the Navy is unable to mitigate for onset of TTS for every activity. For that reason, it proposes to base its mitigation zones for each activity on avoiding or reducing PTS.

Table 11-1 in the LOA application lists the Navy's predicted distances or ranges over which PTS and TTS might occur and the recommended mitigation zones. Rather than include all sources, the table categorizes sound sources by a representative source type within a source bin (e.g., Bin MF1: SQS-53 antisubmarine warfare hull-mounted sonar) and provides average and maximum distances from the sound source at which PTS and the average range at which TTS could be expected to occur. Chapter 6 of the LOA application also includes tables listing various ranges. However, in Chapter 6, the tables include only a subset of the proposed activities (6 of the 12 explosive activities analyzed) and the average rather than maximum ranges (see Table 6-12). In addition, the DEIS does not provide the ranges to PTS for acoustic sources for more than 1 ping (Table 6-7), as it does for TTS (i.e., 1, 5, and 10 pings; Table 6-8). Instead, the Navy simply assumed that marine mammals would not maintain a nominal speed of 10 knots parallel to a ship and thereby

would not receive sound from more than a single ping. Absent that information, the DEIS process is not fully transparent and the MMC and public cannot comment on the appropriateness of the proposed mitigation zones. To address those shortcomings, the MMC recommends that NMFS require the Navy to provide the predicted average and maximum ranges for all impact criteria (i.e., behavioral response, TTS, PTS, onset slight lung injury, onset slight gastrointestinal injury, and onset mortality), for all activities (i.e., based on the activity category and representative source bins and including ranges for more than 1 ping), and for all functional hearing groups of marine mammals.

The Navy indicated in its LOA application that the use of lookouts (i.e., observers) would increase the likelihood of detecting marine mammals at the surface, but it also noted that it is unlikely that using lookouts would be able to help avoid impacts on all species entirely due to the inherent limitations of sighting marine mammals. The MMC agrees and has made numerous recommendations to the Navy in previous letters to characterize the effectiveness of visual observation. For a number of years, the Navy has been working with collaborators at the University of St. Andrews to study observer effectiveness. Although the data are preliminary, the marine mammal observers (MMOs) have sighted at least three marine mammals at distances less than 914 m (i.e., within the mitigation zone for mid-frequency active sonar), which were not sighted by Navy lookouts (Department of the Navy 2012). Further, MMOs have reported marine mammal sightings not observed by Navy lookouts to the Officer of the Deck, presumably to implement mitigation measures—however details regarding those reports or raw sightings data were not provided to confirm (Department of the Navy 2010). The MMC believes that those studies will be very useful once completed but that a precautionary approach should be taken in the interim.

Accordingly, the MMC believes that the Navy should supplement its visual monitoring efforts with other measures rather than simply reducing the size of the zones it plans to monitor. The Navy did propose to supplement visual monitoring using passive acoustics during activities that generate impulsive sounds (i.e., primarily explosives) but not during the use of low-, mid-, and high-frequency active sonar. The Navy uses visual, passive acoustic, and active acoustic monitoring during Surveillance Towed Array Sensor System Low Frequency Active (SURTASS LFA) sonar activities to augment its mitigation efforts over large areas. Therefore, it is not clear why the Navy did not propose to use those same monitoring methods as part of its mitigation measures for the other activities described in its DEIS. To ensure effective mitigation and monitoring, the MMC recommends that NMFS require the Navy to use passive and active acoustics, whenever practicable, to supplement visual monitoring during the implementation of its mitigation measures for all activities that could cause PTS, injury, or mortality.

The Navy has proposed to cease acoustic activities (i.e., active sonar transmissions, Bin MF1) when a marine mammal is detected within the mitigation zone. This raises the issue of when those activities should resume. According to the LOA application, those acoustic activities would resume when (1) the animal has been seen to leave the area, (2) the animal has not been detected for 30 minutes, (3) the animal is thought to have exited the mitigation zone based on its course speed and the relative motion between the animal and the source, (4) the vessel has transited more than 1.8 km beyond the location of the last detection, or (5) ship personnel conclude that dolphins are deliberately approaching the ship to ride its bow wave. The MMC questions some of those requirements when the position of the marine mammal is unknown. The key consideration is the position of the marine mammal relative to the sound source, which is best estimated as a function of the marine mammal's position when first sighted and the speed and heading of both the vessel and

the marine mammal. If the vessel and marine mammal are not moving in the same direction, then the marine mammal may leave the mitigation zone relatively quickly. However, if they are moving in the same direction, then the marine mammal may remain within the mitigation zone for a prolonged period. Unless the marine mammal is resighted leaving or already outside the mitigation zone, the Navy should not resume its activity until it has had a reasonable chance of verifying that it can do so without further impacting the marine mammal. The delay should take into account that (1) a marine mammal may remain underwater where it is not visible, (2) it may change its heading and speed in response to a vessel or sound source, and (3) visual observation alone may not be sufficient to determine a marine mammal's position relative to a vessel or sound source after the initial sighting, unless the marine mammal surfaces again and is observed.

The dive time of a sighted marine mammal is a central consideration whenever mitigation measures depend on visual observation. For some medium-sized and large cetaceans, the proposed 30-minute pause may be inadequate, sometimes markedly so. Beaked and sperm whales, in particular, can remain submerged for periods far exceeding 30 minutes. Blainville's and Cuvier's beaked whales dive to considerable depths (> 1,400 m) and can remain submerged for more than 80 minutes (Baird et al. 2008). The grand mean dive duration for those species of beaked whales during foraging dives is approximately 60 minutes (51.3 and 64.5 minutes for Blainville's and Cuvier's beaked whales, respectively; Baird pers. comm.). Sperm whales also dive to great depths and can remain submerged for up to 55 minutes (Drouot et al. 2004), with a grand mean dive time of approximately 45 minutes (Watwood et al. 2006). If they continue foraging in the same area as a stationary source and that source is turned on after only 30 minutes, then beaked whales and sperm whales could be exposed to sound levels sufficient to cause Level A harassment.

In addition, lookouts may not detect marine mammals each time they return to the surface, especially cryptic species such as beaked whales, which are difficult to detect even under ideal conditions. Barlow (1999) found that "[a]ccounting for both submerged animals and animals that are otherwise missed by the observers in excellent survey conditions, only 23 percent of Cuvier's beaked whales and 45 percent of *Mesoplodon* beaked whales are estimated to be seen on ship surveys if they are located directly on the survey trackline." Therefore, after a shutdown, the MMC recommends that NMFS require the Navy to use a second clearance time category of 60 minutes for deep-diving species (i.e., beaked whales and sperm whales) if the animal is not observed to have left the mitigation zone.

For underwater detonations that involve time-delay firing devices, the Navy proposed to use a 915-m mitigation zone, which is smaller than the 1,326-m zone currently used. The current zone was based on a 20-lb net explosive weight charge, a time delay to detonation of 10 minutes, an average swim speed for dolphins of 3 knots, and an added buffer to account for marine mammals that may be transiting at speeds faster than the average. Although the MMC has commented on this matter in numerous letters and continues to believe that the use of 3 knots as an average swim speed is inaccurate and inadequate (see Au and Perryman 1982, Lockyer and Morris 1987, Mate et al. 1995, Ridoux et al. 1997, Rohr et al. 1998, Rohr and Fish 2004), it acknowledges that the procedure provides at least some protection for marine mammals that could swim into the mitigation zone after the charge is set. However, the Navy has proposed to decrease the number of lookouts currently used for mine neutralization activities using diver-placed time-delay firing devices, because it believes that the measure is impractical to implement and is currently resulting in an unacceptable impact on military readiness. In the HSTT FEIS, the Navy stated that the use of more than two

boats for observation during those activities presents an unacceptable impact to readiness due to limited personnel resources. It also indicated that the reduction in the number of lookouts caused a corresponding decrease in the size of the mitigation zone to 915 m, because that is the maximum distance that lookouts in two small boats can observe realistically. As previously noted, in the LOA application, the Navy did not provide the ranges to the various thresholds for mine neutralization activities that utilize time-delay firing devices (lack of Bin E-6 in Table 6-12), limiting the MMC's and public's ability to evaluate the proposed 915-m mitigation zone. However, in the HSTT FEIS, the Navy did indicate that the 915-m mitigation zone would cover the range to mortality for all charge sizes (up to 20 lbs) for up to the 9-min delay, assuming a nominal swim speed of 3 knots. In that FEIS, the Navy asserted that the 915-m mitigation zone is both practical and protective.

The MMC does not agree that those measures are sufficiently protective. Accordingly, because the Navy has (1) never implemented the MMC's recommendation to adjust the size of the mitigation zone based on a more accurate marine mammal swim speed to provide adequate protection and to justify this measure as mitigation and (2) reduced the size of the mitigation zone in the LOA application, the MMC believes that the Navy should include all model-estimated takes for Level A harassment and mortality for mine neutralization activities in which divers use time-delay firing devices and in which marine mammals could be present in those zones when the explosives detonate. Therefore, the MMC recommends that NMFS require the Navy to derive the takes estimates for Level A harassment and mortality for mine neutralization activities in which divers use time-delay firing devices based on the possibility that marine mammals could enter the mitigation zones when the explosives detonate and updated, more realistic swim speeds.

Request for Level A harassment and mortality takes

The Navy proposed additional post-model analysis of acoustic and explosive effects to include (1) animal avoidance of repeated sound exposures, (2) sensitive species avoidance of areas of activity before a sound source or explosive is used, and (3) effective implementation of mitigation measures. That analysis effectively reduced the model-estimated numbers of Level A harassment (i.e., PTS and injury) and mortality takes.

The Navy assumed that marine mammals likely would avoid repeated high level exposures to a sound source that could result in injuries (i.e., PTS). It therefore adjusted its estimated numbers of takes to account for marine mammals swimming away from a sonar or other active source and away from multiple explosions to avoid repeated high-level sound exposures. The Navy also assumed that beaked whales would avoid certain training and testing activity areas because of high levels of vessel or aircraft traffic before those activities. For those types of activities, the Navy appears to have reduced the model-estimated takes from Level A harassment (i.e., PTS) to Level B harassment (i.e., TTS) during use of sonar and other active acoustic sources and from mortality to Level A harassment (i.e., injury) during use of explosive sources. The Commission recognizes that, depending on conditions, marine mammals may avoid areas of excessive sound or activity. Indeed, one of the concerns regarding sound-related disturbance is that it causes marine mammals to abandon important habitat on a long-term or even permanent basis. That being said, the MMC knows of no scientifically established basis for predicting the extent to which marine mammals will abandon their habitat based on the presence of vessels or aircraft. That would be essential information for adjusting the estimated numbers of takes.

As an example, the Navy indicated that beaked whales that were model-estimated to be within range of the mortality threshold were assumed to avoid the activity for missile exercises (air-to-surface; see Table 3.4-20 in the DEIS). But in Chapter 5 of the DEIS, the Navy indicated that missile exercises involve the aircraft firing munitions at a target location typically up to 27 km away (and infrequently at ranges up to 138 km away). When an aircraft is conducting the exercise, it can travel close to the intended impact area so that it can be visually observed. However, the Navy indicated that there is a chance that animals could enter the impact area after the visual observations have been completed and the activity has commenced. The MMC understands that to mean the aircraft clears the zone around the target and then travels to its firing location to commence the activity. Therefore, the MMC is unsure why the Navy would reduce any mortality or Level A harassment take estimates based on mitigation measures that are followed by a time lag before the activities actually commence, which could allow for the animals to re-enter the mitigation zone around the target.

The Navy also indicated that its post-model analysis considered the potential for highly effective mitigation to prevent Level A harassment from exposure to sonar and other active acoustic sources and Level A harassment and mortality from exposure to explosive sources. Clearly, the purpose of mitigation measures is to reduce the number and severity of takes. However, the effectiveness of the Navy's mitigation measures has not been demonstrated and remains uncertain. This is an issue that the MMC has raised many times in the past, and the Navy has recognized the need to assess the effectiveness of its mitigation measures in its Integrated Comprehensive Monitoring Program, recent DEIS, and LOA application, which states that although the use of lookouts is expected to increase the likelihood that marine species would be detected at the water's surface, it is unlikely that using those lookouts would help avoid impacts to all species because of the inherent limits of visual monitoring.

According to data in the monitoring reports mentioned previously (Department of the Navy 2010, 2012), the effectiveness of the lookouts has yet to be proven. However, the Navy has proposed to adjust its take estimates based on both mitigation effectiveness scores and g(0)—the probability that an animal on a vessel's or aircraft's track line will be detected. According to its proposed approach, for each species the Navy would multiply a mitigation effectiveness score and a g(0) to estimate the percentage of the subject species that would be observed by lookouts and for which mitigation would be implemented, thus reducing the estimated numbers of marine mammal takes for Level A harassment and mortality (explosives only). The Navy then would reduce the estimated numbers of Level A harassment (i.e., PTS) and mortality takes for that species to Level B (i.e., TTS) or Level A harassment (i.e., injury) takes, respectively.

To implement that approach, the Navy assigned mitigation effectiveness scores of—

1 if the entire mitigation zone can be observed visually on a continuous basis based on the surveillance platform(s), number of lookouts, and size of the range to effects zone;

0.5 if (1) over half of the mitigation zone can be observed visually on a continuous basis, (2) there is one or more of the scenarios within the activity for which the mitigation zone cannot be observed visually on a continuous basis (but the range to effects zone can be observed visually for the majority of the scenarios), or (3) the mitigation zone can be continuously observed, but the activity may occur at night; or

N/A if (1) less than half of the mitigation zone can be observed visually on a continuous basis or (2) the mitigation zone cannot be observed visually on a continuous basis during most of the scenarios within the activity due to the type of surveillance platform(s), number of lookouts, and size of the mitigation zone.

The difficulty with this approach is in determining the appropriate adjustment factors. Again, the information needed to judge effectiveness has not been made available. In addition, the Navy has not provided the criteria (i.e., the numbers and types of surveillance platforms, numbers of lookouts, and sizes of the respective zones) needed to elicit the three mitigation effectiveness scores. Moreover, the coverage afforded by the mitigation measures is not adequate to ensure that those measures will be effective. That is, measures of effort (i.e., numbers and types of surveillance platforms, numbers of lookouts, and sizes of mitigation zones) are not necessarily measures of, or even linked to, effectiveness. The Navy also has not yet demonstrated that such measures of effort are synonymous with effectiveness nor has it demonstrated the effectiveness of the visual monitoring measures, as discussed previously. Therefore, the use of those scores to reduce the numbers of takes is unsubstantiated.

The information that the Navy provided in Chapter 5 of its DEIS (which appears to be lacking in the LOA application) regarding the effectiveness of various mitigation measures doesn't necessarily comport with its determination of mitigation effectiveness scores. For example, the Navy indicated that small- and medium-caliber gunnery exercises could involve a participating vessel or aircraft firing munitions at a target location that may be up to 3.7 km away (although it also indicated that the platforms typically are much closer). The MMC is unclear how the Navy would implement a shutdown or delay if the mitigation zone is 183 m and is being observed from up to 3.7 km away. It also stated that large vessels or aircraft platforms would provide a more effective observation platform for lookouts than small boats, but it is highly unlikely that anything but a whale blow or large pod of dolphins will be seen at distances around 3.7 km. The Navy then used the highest effectiveness score of 1 for lookouts to observe mid- and low-frequency cetaceans (except beaked whales) from aircraft, large vessels, and small boats (Table 6-14). Those effectiveness scores again seem to be measures of effort rather than of true effectiveness.

In addition, the Navy is inconsistent in its use of the terms "range to effects zone" and "mitigation zone," which are not the same (see Table 11-1 of the LOA application). More importantly, some of the mitigation zones may be smaller than the estimated range to effects zones. For example, the Navy proposed a mitigation zone of 183 m after a 10 dB reduction in power for its most powerful active acoustic sources (e.g., Bin MF1) and assumed that marine mammals would leave the area near the sound source after the first 3–4 pings. However, the Navy did not present data on the range to onset PTS for more than 1 ping. It also is unclear how the Navy evaluated sources that have a typical duty cycle of several pings per minute (i.e., dipping sonar), as the range to onset PTS for those sources were based on 1 ping as well (Table 11-1). Furthermore, the Navy provided both the average and maximum ranges to PTS in Table 11-1 but did not clarify which range to effects zone it considered for the mitigation effectiveness scores. For small- and medium-caliber gunnery exercises that involve a participating vessel, those zones range from 76 m for the average range to effects zone to 167 m for the maximum range to effects zone with an overall mitigation zone of 183 m. Without the relevant information, mitigation based on those zones cannot be evaluated fully or deemed effective and assigning mitigation effectiveness scores is inappropriate.

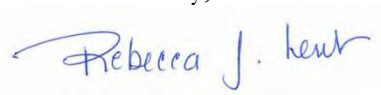
The Navy used numerous references to estimate species-specific g(0)s. Those sources were based on both vessel- and aircraft-based scientific surveys of marine mammals. It also indicated that various factors are involved in estimating g(0), including sightability and detectability of the animal (e.g., species-specific behavior and appearance, school size, blow characteristics, dive characteristics, and dive interval), viewing conditions (e.g., sea state, wind speed, wind direction, sea swell, and glare), the observer's ability to detect animals (e.g., experience, fatigue, and concentration), and platform characteristics (e.g., pitch, roll, yaw, speed, and height above water). In the DEIS, the Navy noted that due to the various detection probabilities, levels of experience, and dependence on sighting conditions, lookouts would not always be effective at avoiding impacts on all species. Yet it based its g(0) estimates on data from seasoned researchers conducting scientific surveys, not on data from Navy lookouts whose effectiveness as observers has yet to be determined. The MMC recommended earlier in this letter that the Navy supplement its mitigation and monitoring measures because the observer effectiveness study has yet to be completed or reviewed. It therefore would be inappropriate for the Navy to reduce the numbers of takes based on the proposed post-analysis approach because, as the Navy has described its approach, it does not address the issue of observer effectiveness in developing mitigation effectiveness scores or g(0) values.

Further, the Navy used g(0) values from surveys conducted in areas off the west coast of the United States during Beaufort sea states of 0–5 (Barlow and Forney 2007, Barlow 2010[1]), but sea states in MITT can range from 0–7 with heavy winds and/or large swells up to 3 m in height (Ligon et al. 2010, Oleson and Hill 2010, Fulling et al. 2011, HDR 2011, Hill et al. 2011, HDR 2012). Therefore, the MMC believes it is not appropriate to use g(0) values from areas off the west coast of the United States as surrogates for g(0) values in MITT. Moreover, Fulling et al. (2011) indicated that failure to detect or verify species identification of the more cryptic cetaceans (*Kogia* spp., minke whales, and beaked whales) was not surprising as more than half of the survey was conducted in Beaufort sea states greater than 4 and sighting those species is difficult even when sighting conditions are optimal (sea state less than 2). Less than optimal sighting conditions in Guam and the CNMI have contributed to the low sighting rate of marine mammals during research surveys and also would contribute to a low sighting rate of Navy lookouts, thus diminishing their effectiveness. Lastly, the Navy used greater g(0) values for vessel than aircraft platforms. The assumption that vessel-based observers are more effective may be true for areas off the west coast of the United States, but Mobley (2007) observed numerous cryptic species (*Kogia* spp. and beaked whales) during aerial surveys in areas more relevant to the DEIS that were not observed during the Fulling et al. (2011) or the HDR (2011) vessel surveys. Again, this difference was likely due to the better sighting conditions during the aerial surveys in Guam and the CNMI. Thus, the g(0) values from the Barlow and Forney (2007) and Barlow (2010) are not directly applicable to MITT. Based on all of these concerns, the MMC recommends that NMFS require the Navy to request the total numbers of model-estimated Level A harassment and mortality takes rather than reducing the estimated numbers of Level A harassment and mortality takes based on the Navy's proposed post-model analysis.

[1] The Navy also indicated it used Carretta et al. 2010 as a source for g(0) values in MITT. However, that document is the 2009 stock assessment report for the Pacific region and does not contain g(0) values for species that would occur in MITT—g(0) values were provided for the harbor porpoise, which does not occur in MITT.

The MMC appreciates the opportunity to provide comments on the Navy's application. Please contact me if you have questions concerning the MMC's recommendations or rationale.

Sincerely,



Rebecca J. Lent, Ph.D.
Executive Director

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Office of the Mayor & Vice Mayor
124 Luayao Lane, Barrigada, Guam 96913

November 12, 2013

Naval Facilities Engineering Command Pacific
ATTENTION: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, Hawaii 96860-3134

Re: Mariana Islands Training and Testing (MITT) Draft Environmental Impact Statement/Oversea Environmental Impact Statement (EIS/OEIS)

Gentlemen:

Hafa Adai and Greetings from Guam. Enclosed for your review is a copy of our position statement addressing the Mariana Islands Training and Testing (MITT) Draft Environmental Impact Statement/Oversea Environmental Impact Statement (EIS/OEIS).

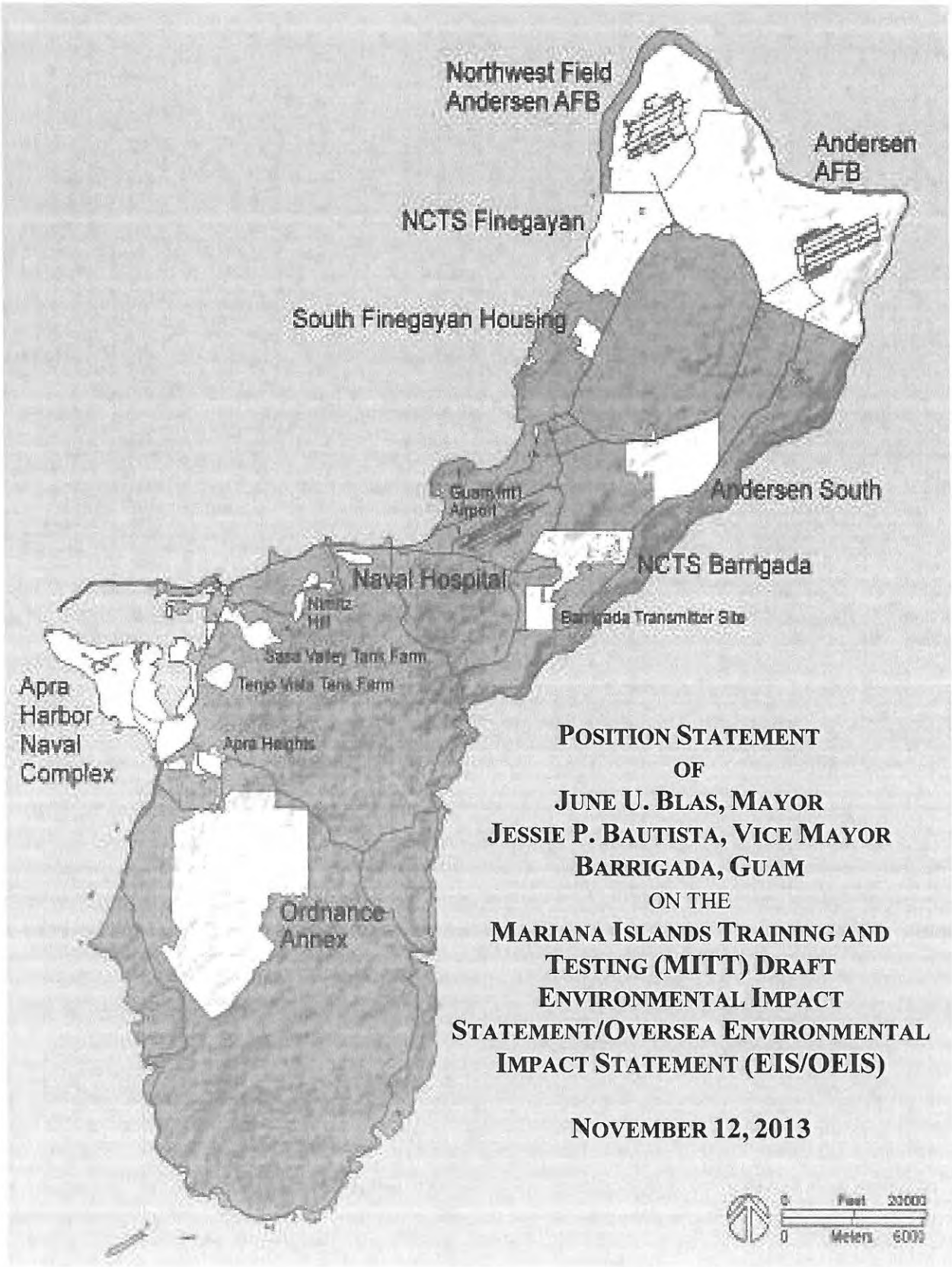
Sinseramente!

JUNE U. BLAS
Mayor

JESSIE P. BAUTISTA
Vice Mayor

Enclosure:

P.O. Box 786, Hagåtña, Guam 96932 * Tel: (671) 734-3737/3859 * Fax: (671) 734-1988 * Email: bmoadmin@teleguam.net



POSITION STATEMENT
OF
JUNE U. BLAS, MAYOR
JESSIE P. BAUTISTA, VICE MAYOR
BARRIGADA, GUAM
ON THE
MARIANA ISLANDS TRAINING AND TESTING (MITT) DRAFT ENVIRONMENTAL IMPACT STATEMENT/OVERSEA ENVIRONMENTAL IMPACT STATEMENT (EIS/OEIS)

NOVEMBER 12, 2013

P.O. Box 786, Hagåtña, Guam 96932 * Tel: (671) 734-3737/3859 * Fax: (671) 734-1988 * Email: bmoadmin@teleguam.net

Mariana Islands Training and Testing (MITT) Draft Environmental Impact Statement/Oversea Environmental Impact Statement (EIS/OEIS)

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P.O. Box 786, Hagåtña, Guam 96932 * Tel: (671) 734-3737/3859 * Fax: (671) 734-1988 * Email: bmoadmin@teleguam.net

November 12, 2013

Naval Facilities Engineering Command Pacific
ATTENTION: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, Hawaii 96860-3134

Re: Mariana Islands Training and Testing (MITT) Draft Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS)

Gentlemen:

This is to inform you that Vice Mayor Jessie P. Bautista and I, together with the Barrigada Municipal Planning Council have reservations and concerns relating to the Mariana Islands Training and Testing (MITT) Draft Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS).

At the onset, let me offer a sincere ***Dangkulo na Si Yu'us Ma'ase*** for the opportunity to express our concerns regarding U.S. military buildup on Guam and the challenges facing our community.

Mr. Chairman, earlier this year, on July 21, 2013, people of Guam, especially our *manamkos*, commemorated the 69th Anniversary of Guam's liberation. Liberation day as you well know, symbolizes the hopes of those who survived the atrocities of war and enemy occupation seeking closure and final peace of mind. This coming December, they will celebrate the 70th Anniversary of the December 8th bombardment and stoppage of the Mass honoring *Santa Marian Kamalen*.

Partnership with the Department of Defense

In this regard, the Vice Mayor and I seek a partnership with the Military and the Department of Defense together with the government of Guam to foster a successful building of U.S. Armed Forces on Guam. We are asking that this partnership take the historic initiative to the next level of the preparation process and secure the financial commitments needed.

Since the announcement of the Marine relocation to our island the government of Guam and the U.S. Military, through the Department of Defense have built a strong relationship based on constructive dialogue. We appreciate this progress, as we have a duty to represent the best interests of the people of Guam, many of whom are U.S. servicemen and women and their dependents who call Guam home.

When we first viewed the constructed timetable for the buildup and the even-shorter preparation period before the Marine forces arrived compelled me to question whether concrete commitments for funding and support will come from the federal government.

Although some say that our island is poised for unprecedented economic and social growth, triggered by the buildup, we remain paralyzed by stunted and inadequate capacity.

As we all know, the government of Guam lacks the financial footing to make the physical and social improvements needed to sustain a substantial increase in our population. While we are eager to host the most advanced military power in the world, we are increasingly concerned that our capacity is inadequate for the buildup of military infrastructure, the smooth transition of troops, the social livelihood of both civilians and military and the sustainability of economic growth.

We propose concrete mutual commitments, which build upon the most commendable and shared theme between the U.S. military and the government of Guam – that *"what is good for Guam is good for the military."* While there has been extensive collaboration on what is needed to prepare for the next decade, we can all benefit from the financial commitment of the U.S. military and the federal government to provide what is needed.

For all intents and purposes, we agree that our physical infrastructure is for the benefit of both the civilian and military communities. That is why it is only right we get the Defense Department's financial support to help us build what is needed for all of us. This partnership must also realize the need to absorb the social impact of this buildup so both the civilian and military communities have adequate law enforcement, education and health care support.

Build up on Guam

U.S. national interests and treaty commitments require strengthening of U.S. military capabilities in the Western Pacific. U.S. Forces must be positioned to maintain regional stability, ensure flexibility to respond to regional threats, project power throughout the region, defend our assets as well as those of our allies, and provide forces to respond to global contingencies.

The relocation of III Marine Expeditionary Force personnel from Okinawa to Guam under U.S.-Japan Alliance Transformation and Realignment is part of a broader realignment that, when implemented, will strengthen our regional posture, deter potential aggressors, and provide capabilities that can be flexibly deployed in contingencies, which are essential for the Defense of Japan and for peace and security in the region.

The Marines and their dependents leaving Japan will reduce the footprint of U.S. forces in Okinawa. This will facilitate consolidation of U.S. bases on Okinawa to allow additional land returns in Japan.

What we find disturbing with these plans is the obvious exclusion of funding that will be made available to build, enhance, or improve Guam's facilities and infrastructure to support these move.

Land Control

In Guam, the Navy has control of approximately 28 square miles of land in noncontiguous properties on Guam. There are five Navy annexes:

(1) Main Base (which includes Apra Harbor Naval Complex and Main Base/Polaris Point);
(2) Naval Base Guam Munitions Site;
(3) Hospital Annex/Nimitz Hill;
(4) Naval Base Guam Telecommunications Site; and
(5) Naval Base Guam Barrigada.

On the other hand, Andersen Air Force Base, one of the largest U.S. Air Force airfields, is located in the northern portion of the island of Guam. Andersen Air Force Base includes the main base and Northwest Field; Andersen South; and Andersen Barrigada Annex.

Naval Base Guam, Barrigada

Activities carried out at Naval Base Guam, Barrigada, require large amounts of cleared, maintained land for operation. Vegetation in the area include tangantangan scrub, limestone forest, disturbed limestone forest, shrub/grassland, and wetlands. According to the MITT study area, the disturbance of land has led to an increase of nonnative and invasive species. The degree of disturbance within the annex results in portions of the remaining forested plant communities being highly modified and dominated by tangantangan and African tulip.

Furthermore, the study indicates that twenty (20) tree species were documented on transects quantified during the 2008 vegetation surveys performed on Naval Base Guam Barrigada by the U.S. Department of the Navy in 2013. The most commonly observed trees included *nunu*, *pago*, and *fagot*.

All three species are native to Guam. *Paipai*, which is also native, is a dominant understory species within the forests on Naval Base Guam Barrigada.

Common introduced species on Naval Base Guam Barrigada include custard apple, limeberry, and tangantangan.

Native species have a combined relative density of approximately 77 percent, far exceeding the relative density of introduced species for the survey transects at Naval Base Guam Barrigada based on the U.S. Department of the Navy 2013 study.

Cultural Resources

Table 3.11-1: Cultural Resources Eligible for and Listed in the National Register of Historic Places, and National Historic Landmarks, Guam (continued)

Location	Resource	Description	Guam Register of Historic Places	National Register of Historic Places	Reference
Naval Base Guam Telecommunications Site	1 historic Archaeological site	Cave used by Navy radioman to evade capture during World War II		Eligible	U.S. Department of the Navy 2005a
Naval Base Guam Barrigada	2 historic Archaeological site	Barrigada Battlefield and Well, and Officers Country		Eligible	U.S. Department of the Navy 2005b
Andersen Air Force Base	World War II airfield	Northwest		Listed	U.S. Air Force 2011
	airfield North Field	North Field		Eligible	Eligible National Park
	Pati Point Complex	Chamorro village with caves, stone structures, possible latte stones, and dense midden deposits	Listed	Likely Eligible	U.S. Air Force 2011
	Tarague Beach Historic District	139 archaeological localities including rock alignments, artifact scatters, rock shelters, rock mounds, bedrock mortars, and trails	Listed	Likely Eligible	April 2006; U.S. Air Force 2011
	48 pr-contact sites	Including the Lafac site		Eligible	U.S. Air Force Athens 2009; Dixon and Walker 2011; Griffin et al. 2011

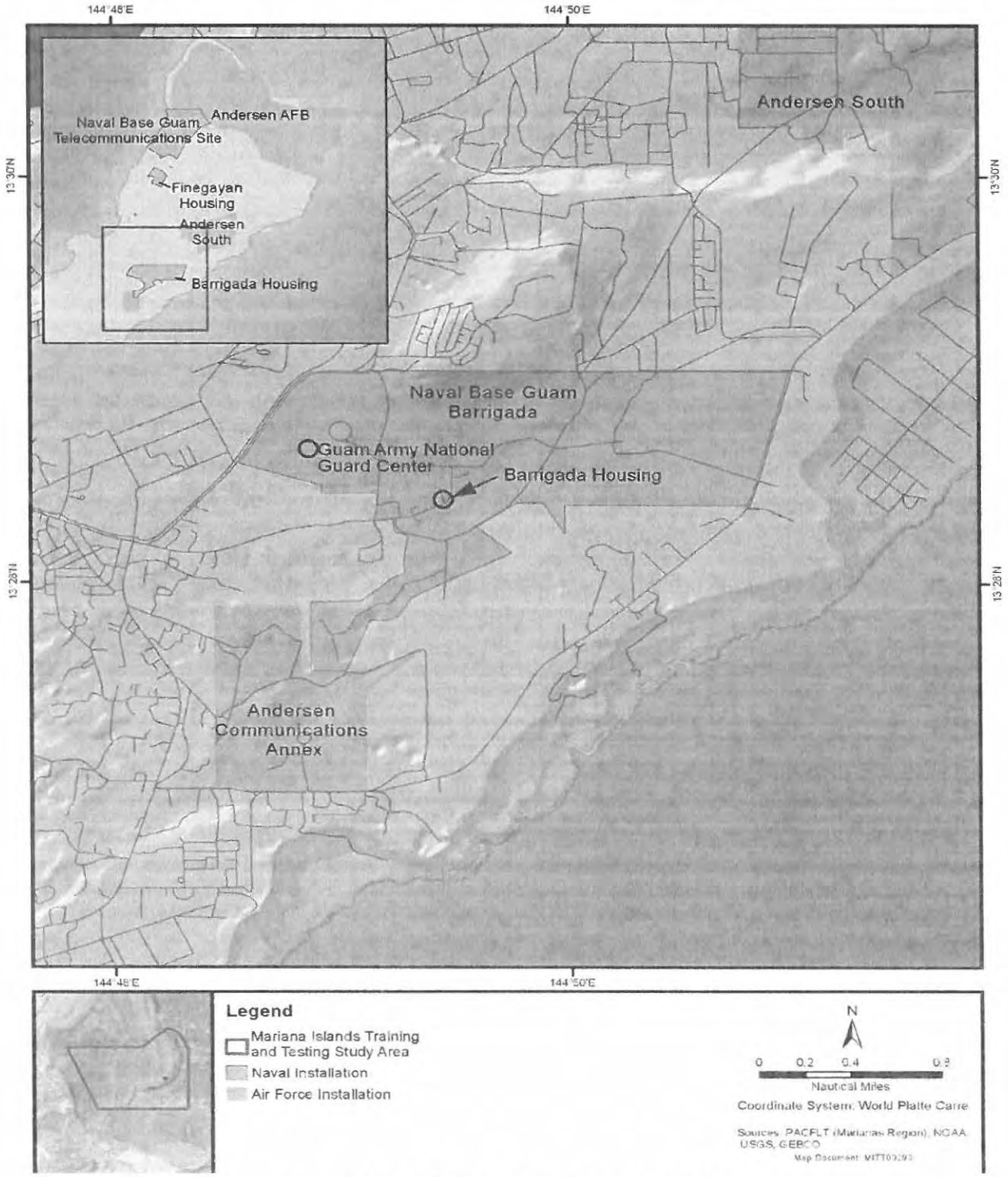

Figure 2.1-8: Naval Base Guam Barrigada

Challenges

The Department of Defense and the government of Guam face several significant challenges associated with the proposed military buildup on Guam. The Defense Department's challenges include obtaining adequate funding and meeting operational needs, such as mobility support and training capabilities. There are also challenges in addressing the effects of military and civilian growth on Guam's community and civilian infrastructure.

For example, according to the Department of Defense and government of Guam officials, Guam's highways may be unable to bear the increase in traffic associated with the military buildup, its electrical system may not be adequate to deliver the additional energy needed, its water and wastewater treatment systems are already near capacity, and its solid waste facilities face capacity and environmental challenges even without the additional burden associated with the projected increase in U.S. forces and their dependents.

The government of Guam's efforts to plan to meet infrastructure challenges caused by the buildup of military forces and facilities are in various stages, and existing uncertainties associated with the military buildup contribute to the difficulties Guam officials face in developing precise plans. These challenges are somewhat analogous to challenges communities around the continental U.S. growth bases face.

Government of Guam officials recognize that the island's infrastructure is inadequate to meet the projected demand; however, funding sources are uncertain. Officials on the other hand are uncertain as to whether and to what extent the government of Guam will be able to obtain financial assistance for projected infrastructure demands due to the military buildup.

In September 2007, GAO reported that most communities experiencing civilian and military population growth at Army installations in the continental United States will likely incur costs to provide adequate schools, transportation, and other infrastructure improvements, and many of these communities are also seeking federal and state assistance.

As initiatives for expanding the U.S. military presence on Guam began to emerge, the Senate Appropriations Committee noted the ambitiousness of the military construction program and the need for a well-developed master plan to efficiently use the available land and infrastructure. However, in July 2006, the same committee recommended deferral of two military construction projects at Andersen Air Force Base that were included in the President's budget request until such time as they can be incorporated into a master plan for Guam and viewed in that context.

Furthermore, the committee directed the Secretary of Defense to submit to the appropriation committees a master plan for Guam by December 29, 2006, and a report accounting for the United States' share of this construction program to project-level detail and the year in which each project is expected to be funded. [S. Rep. No. 109-286, at 15 (2006]. The Senate Committee also directed the General Accounting Office to review the Department of Defense's master planning effort for Guam as part of its annual review of DOD's overseas master plans.

As discussed in our 2007 report, DOD has not issued a Guam master plan for several reasons. First, the required environmental impact statement, which will take at least 3 years to complete according to DOD documents and officials, was initiated on March 7, 2007. [Note: The primary purpose of an environmental impact statement is to serve as an action-forcing device to ensure that the policies and goals defined in the National Environmental Policy Act are infused into the ongoing programs and actions of the federal government. Further, regulations for implementing the act established by the Council on Environmental Quality specify that to the fullest extent possible, agencies shall prepare draft environmental impact statements concurrently with and integrated with other environmental impact analyses and related surveys and studies required by the Fish and Wildlife Coordination Act, the National Historic Preservation Act of 1966, the Endangered Species Act of 1973, and other environmental review laws and executive orders. See 40 C.F.R. §1502.25.

The results of this environmental impact statement will influence many of the key decisions on the exact location, size, and makeup of the military infrastructure development on Guam. Second, exact size and makeup of the forces to be moved to Guam are not yet identified. Third, DOD officials said that additional time is needed to fully address the challenges related to funding uncertainties, operational requirements, and Guam's economic and infrastructure requirements.

Concerns

The Municipal Planning Council members pose the following concerns regarding the Mariana Islands Training and Testing (MITT) Draft Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS):

Infrastructure: While the MITT Draft EIS/OEIS addresses the planning process for DoD infrastructure. Did the planners take into account the need to work with government of Guam and community to improve civilian infrastructure? It is our opinion that establishing a working Partnership, federal agencies should work closely to identify priority infrastructure improvements and at least match the needs of the government of Guam.

Impact: We realize that the community will be impacted with personnel commuting to and from their respective bases. We hope that impact to our communities will be addressed through efficient planning, scheduling of work hours, and potential road improvements. These issues should be constantly reviewed to minimize the impact to the local communities.

Traffic Impact: Traffic impact should not only depend upon the frequency of training that is required. Options should be explored and consideration should be to utilize high density modes of transportation (buses, for example) to transport personnel to the training areas, which would minimize the amount of traffic to the training areas. Every effort should be made to minimize the trucks and heavy equipment impacts onto the public roads.

Impact on Views: It is our opinion that the main encampment should have barracks, dining facilities, administration buildings, recreation facilities and housing. More importantly, these buildings should be typical for any encampment, similar to what exists at Andersen Air Force Base and Naval Base Guam.

Medical and Dental Facilities and Veterans: With additional personnel comes the need for additional medical and dental facilities. Adequate medical facilities should be accounted for to support the influx of military personnel and dependents while at the same time respecting the rights of the veterans who currently use the facilities. We understand that DoD facilities are open to and available for employees and qualified personnel. More importantly, eligible veterans should be able to continue accessing appropriate facilities.

Housing Requirements: Will all housing be on base or can we expect some personnel and their families to live in the community? Although residing on base will minimize impacts on our infrastructure we anticipate that some personnel and their families will choose to live in our community.

DoD Landownership on Guam

Utilizing DoD lands will minimize impact on our community.

Closing

Reports issued by the General Accounting Office have shed a lot of light on the Department of Defense's effort to realign and relocate military forces to Guam. While the reports recognizes that Guam has unique economic and infrastructure requirements that have yet to be addressed, it stressed that without effective partnering, it will be difficult to successfully deal with the concerns.

It has been no secret that although there is excitement with the *"economic stimulus"* the planned military move would provide, also, there is equally a number of concerns as to whether or not Guam has the capacity or capability to deal with the infrastructure demands and quality of life issues the move will bring. It is our concern that appropriate funding be sought to ensure that Guam's concerns are met.

We must quickly and cooperatively take the next step forward to ensure that the opportunities from this military buildup and this unprecedented relationship are felt both by the people of Guam and our new neighbors we welcome with a warm *Hafa Adai* spirit.

As Vice Mayor Bautista and I together with our Planning Council members we have emphasized the need for a working partnership to ensure that the Department of Defense continues with its plans to build up its force structure on Guam, the civilian needs of our island are met and our concerns are addressed.

For all intents and purposes, we agree our physical infrastructure is for the benefit of both the civilian and military communities. That is why it is only right we get the Department of Defense's financial support to help us build what is needed for all of us. This partnership must also realize the need to absorb the social impact of this buildup so both the civilian and military communities have adequate law enforcement, education and health care support.

These are exciting and historic times we must quickly and cooperatively take the next step forward to ensure that the opportunities from the military buildup and this unprecedented relationship are felt both by the people of Guam and our new neighbors we welcome with a warm *Hafa Adai* spirit.

Thank you and *Si Yu'us Ma'ase* for your time, and let us remember that ***what is good for the military is good for Guam.***

Sinseramente!

JUNE U. BLAS
Mayor

JESSIE P. BAUTISTA
Vice Mayor

Office of the Speaker
Judith T. Won Pat, Ed.D.
CHAIR, COMMITTEE ON EDUCATION, PUBLIC LIBRARIES & WOMEN'S AFFAIRS

Ufisinan I Etmås Ge'helo'Gi Liheslaturan Guåhan
32ND Guam Legislature
I Mina' Trentai Dos Na Liheslaturan Guåhan
155 HESLER PLACE HAGÅTÑA, GUAM 96910
TEL 671-472-3586/7 • FAX 671-472-3589
JUDIWONPAT.COM • SPEAKER@JUDIWONPAT.COM

COMMISSIONER

GUAM COMMISSION ON DECOLONIZATION

GUAM FIRST COMMISSION

PRESIDENT

ASSOCIATION OF PACIFIC ISLAND LEGISLATURES (APIL)

BOARD MEMBER

PACIFIC RESOURCES FOR EDUCATION AND LEARNING (PREL)

VICE CHAIR

PACIFIC ISLAND DEVELOPMENT BANK (PIDB)

MEMBER

FESTIVAL OF THE PACIFIC ARTS (FESTPAC)

December 11, 2013

Naval Facilities Engineering Command Pacific
Attention: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

RE: Comments on the Mariana Islands Testing and Training Draft EIS/OEIS

Håfa Adai:

My name is Judith T. Won Pat, Ed. D. and I am the speaker of the 32nd Guam Legislature. I would like to submit the following comments on the Mariana Islands Testing and Training (MITT) Draft EIS/OEIS:

I recommend the "No Action Alternative". The Mariana Islands Range Complex (MIRC) already uses 501,873 nautical miles of ocean and 70,000 nautical miles of airspace for training. The MITT would nearly double DOD's training area to 984,469 square nautical miles. Our islands already provide enough land, air and ocean space for DOD training. It is dangerous to expand this training area without being fully aware of how it will impact our environment and our health. The MITT EIS does not provide important details about when and how often the training and testing exercises will be conducted. It simply states, "number of activities per year", but does not state how long or how often these activities will occur. There are no specific locations or dates of the activities provided, thus, it is difficult to determine exactly what the impacts will be. I suggest that DOD work more closely with the leaders of our islands to assess these impacts and prevent harm. We need to always be aware of the testing that is being done in our islands as it is being done.

The military has been conducting training exercises using "explosives and explosive byproducts, metals, chemicals other than explosives, and other materials" in our islands for decades without transparency. DOD is not forthright about the health impacts on people, who are in such close proximity to the chemicals and explosives being used. For example, DOD still denies having used Agent Orange as an herbicide in the late 1960s, despite the fact that veterans are receiving benefits for Agent Orange exposure on our island. These vets have suffered and many have died from cancer and other terminal illnesses as a result of their exposure to Agent Orange on Guam. Many of our own people suffer from rare diseases and cancers that have been connected to military testing in our region. Thus, as a leader who is very concerned about the health of our people, I urge DOD to work more closely with us so that we are fully aware of the types of training being conducted and the chemicals being used.

We need an honest assessment of the health and environmental risks associated with the testing and training being conducted in the Marianas. The Draft EIS doesn't deeply explore these risks, simply stating, "Impacts on public health and safety would be unlikely because of the Navy's standard operating procedures." I'd like to know more about the Navy's standard operating procedures.

I am also concerned about the impacts of anti-submarine warfare, electronic warfare, sonar use, and ordnance detonation on populations of marine habitats and animals. In an *Earth Island Journal* article, Michal Jasny, senior policy analyst at the Natural Resources Defense Council, made an interesting point. He stated, "The Navy's whole approach to the Marianas is shoot first and ask questions later. We know very little about the populations of whales, dolphins, and other marine life around the Marianas. Yet the navy is proceeding with a massive militarization of the islands and surrounding waters. It is grossly irresponsible to proceed in this way." We need a different approach. The MITT EIS states that there will be adverse impacts on many of the endangered turtles and other sea life in our region. For example, the use of sonar training will result in permanent hearing loss for up to 59 whales and dolphins per year. (MITT, Vol. 1, p. 3.4-114) This is alarming and needs to be prevented. We have an obligation to ensure that these mammals are not further endangered, or worse, made extinct.

The final concern I'd like to raise comes from our island's fishing community. The Guam Fishermen's Cooperative Association prepared compelling comments that urge DOD to work more closely with our community. They are concerned, as am I, that more testing and training activities in our island will hamper the use of our marine resources and could have negative impacts on marine tour operations. We must work hard to prevent negative impacts on our economy as a result of testing activities.

I look forward to strengthening our partnership. We need both Marianas and federal leaders at the table when major decisions like expanding testing and training in our region are being made. All decisions must be win-win, with mutual benefits for both our military and island communities.

Senseramente,

Judith T. Won Pat, Ed. D.
Speaker, 32nd Guam Legislature

OFFICE OF SENATOR

FRANK B. AGUON, JR.

CHAIRMAN, COMMITTEE ON

GUAM U.S. MILITARY RELOCATION | HOMELAND SECURITY | VETERANS' AFFAIRS | JUDICIARY

12 December 2013

Naval Facilities Engineering Command, Pacific
Attention: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Buenas yan Hafa Adai!

Below are my comments regarding the Marianas Islands Training & Testing Environmental Impact Statement / Overseas Environmental Impact Statement.

I understand the need for expanding the military's training ground in support of our Nation's national defense. The concerns I have regarding the MITT (in its current draft state) are primarily the environmental impact – to include the interruption on sea life within the MITT's footprint.

Minimum impact on our environment – to include land, sea, and air – whilst conducting the proposed military exercises, is ideal.

A plan or program that includes monitoring tools must be in place prior to the start of these exercises conducted within the MITT's established footprint. In addition, a mitigation plan and/or program, with regard to both anticipated and un-anticipated impacts to the environment within the MITT's footprint, must also be established and coordinated with the Government of Guam.

Notifications to the general public, the fishing industry, and tourism operations prior to conducting exercises are a necessity for the local population's safety and will be vital to our visiting tourism industry.

The Guam Legislature, Executive Branch, all relevant Government of Guam Agencies and Non-Governmental Organizations -- who are impacted by the MITT -- would highly benefit in receiving copies of all environmental impact assessments conducted within the footprint of the MITT.

Copies of plans for any modifications to Guam land, as a result of the MITT, must be provided to the Government of Guam prior to construction.

We would like to request that the final record of decision include the following requirements:

- Notifications (with reasonable lead time) be given to the general public, fishing industry, tourism operations, and the Government of Guam prior to conducting military exercises (as defined by the final version of the MITT) within the MITT footprint.
- Copies of all environmental impact assessments conducted within the footprint of the MITT be given to the Guam Legislature, the Executive Branch, all relevant Government of Guam Agencies and Non-Governmental Organization (who are impacted by the MITT).

I highly encourage the review and consideration of all comments received as part of the Mariana Islands Training and Testing (MITT) comment period.

Respectfully,

SENATOR FRANK B. AGUON, JR.
Committee Chairman on Guam U.S. Military Relocation, Homeland Security, Veterans' Affairs, and the Judiciary
Mina'Trentai Dos Na Liheslaturan Guåhan | 32nd Guam Legislature

I Mina'Trentai Dos Na Liheslaturan Guåhan
Phone: (671)475-GUM1/2 (4861/2) | Fax: (671)475-GUM3 (4863)
155 Hesler Place Hagatna,Guam 96910 | Email: aguon4guam@gmail.com

www.frankaguonjr.com

Office of
the People

I Mina'trentai Dos na Liheslaturan Guåhan

Senator Vicente (ben) Cabrera Pangelinan (D)

December 12, 2013

Naval Facilities Engineering Command, Pacific
Attention: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Re: Comments on Draft Environmental Impact Statement/Overseas Environmental Impact Statement for Mariana Islands Training and Testing

Hafa adai!

Attached you will find my comments on the Draft Environmental Impact Statement/Overseas Environmental Impact Statement for Mariana Islands Training and Testing. This was submitted via the project website, Comment ID: 18-3335-1.

Should you have any questions or concerns, please feel free to contact me.

Si Yu'os Ma'åse',

Vicente (ben) Cabrera Pangelinan
Senator

cc: All Senators, 32nd Guam Legislature

Chairman
Committee on Appropriations, Public Debt, Legal Affairs, Retirement, Public Parks, Recreation, Historic Preservation and Land

Member
Committee on Education, Public Libraries and Women's Affairs

Member
Committee on General Government Operations and Cultural Affairs

Member
Committee on Municipal Affairs, Tourism, Housing and Hagåtña Restoration and Development Authority

Member
Committee on Health & Human Services, Health Insurance Reform, Economic Development and Senior Citizens

Member
Committee on Aviation, Ground Transportation, Regulatory Concerns and Future Generations

324 W. Soledad Ave. Suite 100, Hagåtña, Guam 96910
Tel: (671) 473-(4BEN) 4236 - Fax: (671) 473-4238 - Email: senbenp@guam.net
Website: http://senbenp.com

From: Senator Vicente (ben) Cabrera Pangelinan
December 12, 2013

Comments on Draft EIS/OEIS for Mariana Islands Training and Testing (MITT)
U.S. Navy/U.S. Pacific Fleet

The Mariana Islands Training and Testing (MITT) Draft Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS) is just one of five other National Environmental Policy Act (NEPA) Actions that the citizens of Guam and the Commonwealth of the Northern Mariana Islands (CNMI) must review and comment on to make sure we protect our cultural and socio-economic values and priorities of our region are voiced and considered, and to ensure that our quality of life is not further compromised by the Department of Defense's (DoD) proposed expanded testing and training range.

As Chairman of the Guam Legislative Committee on Appropriations, Public Debt, Legal Affairs, Retirement, Public Parks, Recreation, Historic Preservation and Land, I am providing comments relevant to the impact on our environment as a whole, including the overall EIS process and the proposed expansion as it affects our economic posture.

1) Format of Public Meetings

Comment: There appears to be no official representatives from the Department of Navy or the cooperating agencies, including the National Marine Fisheries Service, U.S. Air Force and U.S. Coast Guard present at these meetings who are in the capacity to make actual decisions or who are best able to explain the reasoning beyond what is provided in the online documentation.

Initial Draft EIS public meetings held in 2009 on the military relocation allowed for oral testimony before a public audience. This latest meeting eliminated that portion from the agenda. The presentation of oral testimony before a public audience is a critical component for maintaining that the public, the community as a whole, is able to be heard and able to hear the range of perspectives and concerns that are both specific and general with regard to DoD expansion in our region. The Department of Defense has again shown its complete dismissal of the traditional practice of our people, in that the oral traditions of our culture foster participation. This complete lack of cultural sensitivity fundamentally has inhibited the majority of the concerns of our people.

Additionally, the number of days and venues for public meetings has been reduced, with one day each for Guam, Saipan, Tinian, and Rota. While the one-day public meeting may meet the NEPA requirement, the reduced allotment for public meetings thwarts the ability of our citizens to actively engage with the DoD on the issues that adversely impact us as an entire community.

2) Proposed Action Alternatives

Comment: *No Action Alternative* – This alternative continues existing baseline training and testing already in, but not limited to the Mariana Islands Range Complex (MIRC) EIS/OEIS and MIRC Airspace EA/OEA FONSI/FONSH. Essentially, this alternative reauthorizes the continuation of such actions.

To maintain the spirit of No Action, the Navy should consider elimination of the baseline training and testing activities already existing through the MIRC. Until a No Action plan is truly implemented, an analysis or further study should be done to report on the present-day impact of the existing baseline training and testing activities included in MIRC EIS/OEIS ROD and MIRC Airspace.

Alternative 1 (Preferred Alternative) – This would include the No Action Alternative (which is the MIRC) PLUS an increased area for use by DoD, bringing the training range from 500 square miles to nearly one million square miles of the Mariana Islands region. Alternative 1 allows for the training and testing requirements to accommodate force structure changes and the introduction of new vessels, aircraft, and weapons systems; establishment of Title 33 C.F.R Danger Zones; and net explosive weight increases.

The DoD's preferred alternative involves the expansion of an additional 500 square miles of ammunitions testing and warfare training area, for a total of close to one million square miles for the proposed site, which in effect doubles the testing and training area previously disclosed as the Mariana Islands Range Complex (MIRC). This area has been described as the largest training range that DoD has in the world. Guam's ability to comment on an expansion of this magnitude is inadequate at this point. We would need more than a 90-day comment period and additional public meetings.

Alternative 2 – Includes Alternative 1 and MORE, including increased speed and timing of training and testing activities adding three major at-sea training and testing activities and adjustment for NAVAIR and NAVSEA testing activities.

DoD proposes to use Guam and the CNMI land and seas for continued and expanded sonar testing and training, continued and expanded bombing on Farallon de Medinilla, off-shore underwater bomb detonation and to generally increase the frequency and area of testing and training. We do not support further desecration of our lands, our oceans, and the harmful impact of the DoD training and testing on our wildlife and sealife.

When reviewing the current impact on the training area and the accommodations that are touted such as the easing of access restrictions for certain areas on a case by case basis, I proposed that these accommodations be made part of the EIS and that any additional

expansion of the MIRC be off-set by a permanent deletion of the areas with eased restrictions on a case by case basis, on an area for area basis.

3) Economic value of Guam

Comment: While it is often argued that the economic value of Guam is strengthened because of U.S. defense spending, we are seeing this week, Guam's economic predicament steepened further by whether or not the U.S. House of Representatives and the U.S. Senate compromise on the FY2014 National Defense Authorization Act (NDAA).

One main concern as a policy maker is that one of our biggest economic engines is tourism and tourism's economic value is separate and apart from the military, and if we lose that identity, then we lose the value of that economic engine. We can't survive on the whims of the military community because we saw what can happen. Congress can decide again—no more budget, we'll cut the military out and once again, you have a community that has devalued our economic value as a community rich in culture, catering to tourism—we've devalued that to support a military buildup and when Congress decides we're going to cut the budget for the military because we have national priorities, then we have to rebuild that up and support it again, but we've lost the revenue stream that comes from that military that is now cut. It becomes another challenge and another struggle. There's got to be a balance in favor of the local community, the identity of the local community, the exploitation of the economic value of the richness of the culture and the heritage of that local community.

As a final point, the impact of the proposed MITT project is significant. The preferred alternatives outlined in the five NEPA actions all support increased testing and training in our region, which in turn affects the quality of life of our people. Ultimately, these actions not only impede our quality of life but also our rights as indigenous peoples, and our ability to make decisions with regard to indigenous self-determination. Even, the DoD recognizes in previous EIS proceedings that the increase of military personnel plus the increase of a civilian population to support increased military activity on Guam will have a negative impact on the rights of the local people and the ability of the native inhabitants of Guam in the exercise of its self-determination as provided for under the United Nations international treaties and charters.

United States Department of the Interior
OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Pacific Southwest Region
333 Bush Street, Suite 515
San Francisco, CA 94104

IN REPLY REFER:
(ER 13/0616)

Filed Electronically

16 December 2013

Naval Facilities Engineering Command Pacific
Attn: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Subject: Review of the Draft Environmental Impact Statement/Overseas Environmental Impact Statement (DEIS/OEIS), for the Mariana Islands Training and Testing Activities.

The Draft Environmental Impact Statement/Overseas Environmental Impact Statement (DEIS) for the Mariana Islands Training and Testing Study Area was released for public review on September 13, 2013. The lead federal agency for the proposed action is the Department of the Navy (DoN). The proposed action includes the expansion of the study area boundaries and adjustment of the location, type and tempo of military training activities of the Mariana Islands Range Complex, which encompasses land, air, and sea training ranges in Guam and the Commonwealth of the Northern Mariana Islands (CNMI).

This proposed action is intended to fulfill and improve U.S. government national security and alliance requirements in the Western Pacific Region and increase the strategic defense role of Guam and the CNMI.

We reviewed the DEIS pursuant to the National Environmental Policy Act of 1969 [42 U.S.C. 4321 *et seq*.; 83 Stat. 852] (NEPA); and other authorities mandating concern for the environmental resources, including the Fish and Wildlife Coordination Act of 1934 [16 U.S.C. 661 *et seq*.; 48 Stat.401], as amended; the Clean Water Act [33 U.S.C. 1251 *et seq*.; 62 Stat. 1155], as amended; the Endangered Species Act of 1973 [16 U.S.C.1531 *et seq*.; 87 Stat. 884], as amended (ESA); and the Sikes Act of 1960 [16 U.S.C. *et seq*.; 74 stat. 1052], as amended, and the Migratory Bird Treaty Act (16 U.S.C. 703 *et seq*.), as amended (MBTA). We offer the following comments for your consideration.

Federally Listed and Candidate Species

A number of listed and candidate species occur on Guam, Rota, Saipan, Tinian, and Farallon de Medinilla (FDM). We are concerned that the proposed activities would result in adverse impacts to listed and candidate species from habitat loss, degradation, and fragmentation. We also are concerned that the increase in frequency, intensity, or duration of military training activities,

particularly on Tinian and FDM, may significantly increase disturbance to or harm candidate and listed species from current levels of military training activities on these islands.

We understand from the analysis in the DEIS that impacts from activities conducted on the same range are considered the same regardless of their frequency or intensity. We disagree with this conclusion and assert that the increased frequency, intensity, or duration of training and testing exercises would increase the impact (e.g., noise, fire risk) to species. We ask that you revisit this conclusion and disclose the level or severity of impacts to listed and candidate species in the EIS.

In addition, the EIS includes determination of effects to listed species for the No Action Alternative pursuant to section 7 of the ESA and uses these determinations for the Preferred Alternative and Alternative 2 (see Table ES.6-1 and 3.10 in the DEIS). This is inappropriate because it is the action agency's responsibility to describe the effects for the proposed activities on the environment (e.g. listed species) for all alternatives in the EIS, rather than referencing a non-NEPA document on its effects.

It is also pre-decisional and incorrect to include statements of affects to listed species pursuant to section 7 of the ESA in the DEIS because consultation on the Preferred Alternative or Alternative 2 has not been completed. Therefore, we ask that you remove these statements from the EIS.

The EIS should provide a thorough analysis of the impacts to federally-listed and candidate species. Specifically, the EIS should include the amount of habitat for each of the listed and candidate species that would be removed, degraded or fragmented and the resulting effects to populations and individual species. The EIS should include measures to minimize impacts to listed and candidate species. If project impacts to species cannot be avoided, the EIS should include mitigation measures that offset or mitigate the impacts.

We are concerned about the scope of the training activities as they are spread over multiple islands within the Marianas. We recommend, at minimum, the removal of Rota from all proposed activities. Among the islands included in your study area, Rota is the most pristine and provides habitat for some of the most critically endangered species in the Mariana Islands including the Mariana crow (*Corvus kubaryi*) and Mariana fruit bat (*Pteropus mariannus mariannus).* The Rota fruit bat population has become increasingly more important for recovery because of the near extirpation of bats on Guam. Both are extremely sensitive to any type of disturbance events and a single disturbance event for these species would likely negatively impact them at a population level.

In addition, as discussed below, with the proposed increase in military traffic and training on Rota, there is a risk of the accidental introduction of the brown treesnake (*Boiga irregularis*) from aircraft or vessels that originate from Guam. We ask that you avoid this risk all together by removing Rota from all proposed activities in the EIS.

Coastal and Marine Environment

Although the impact analysis covers most areas of potential impact from a diverse set of activities, it is deficient in: (1) assessing potential impacts to the marine and coastal environment from acoustic stressors by underwater demolition, (2) physical disturbance as a result of amphibious landings, and (3) insufficient evaluation of the secondary impacts to coastal and

marine resources associated with the use of land-based explosives. The DEIS is also deficient in describing the marine habitats around the specific areas of planned underwater demolition and amphibious landings.

The analysis of the effects to marine habitat from acoustic stressors by underwater demolition is inadequate in the DEIS. This analysis should be done on a localized level verses a generalized analysis of a large area such as the Western Pacific Ocean. We recommend all the areas that may be subjected to underwater demolition be included in a map with these areas overlaid with detailed habitat maps showing underlying geomorphological structure and biological resources in the EIS. These types of habitat maps will help inform a more robust analysis of impacts to marine resources because the specific areas can be assessed for impacts to individual species present. Maps should be produced for both shallow and deep waters; however, it is understood the amount of detail may be less for deep water habitats but should at least include hard and soft bottom substrates.

If hard bottom is known from the impact area, more detailed optical data should be collected to document the presence of deep water corals.

Amphibious landings are proposed at four locations including Una Babui, Una Chulu, and Unai Dankulo on Tinian and Dry Dock Island in Apra Harbor, Dadi Beach on Guam. The DEIS states that "as is current practice, exposure of coral and other hard bottom habitats would continue to be avoided in the Proposed Action. Prior to any Amphibious Assaults and Amphibious Raids with larger amphibious vehicles, a pre-landing surveillance of the area would be undertaken to identify the best landing route, which would help avoid identified obstacles."

However, there is no explanation how this occurs and there is no data cited or shown to support that non-hard bottom corridors exist in these landing areas. Surveys of marine and coastal resources of Tinian conducted by the U.S. Fish and Wildlife Service (Service) and its partners (Minton et al. 2009) via DoN funding appear not to have been cited in this document. This may be a helpful resource relative to determining and describing landing route sites on Tinian.

The Service recommends that detailed habitat maps be produced for each of the landing beaches and that maps indicate corridors for amphibious landing vehicle use. In addition, the Service recommends that data be shown that indicates that hover craft and other amphibious landing vehicles do not have an impact to the seafloor. The DEIS does not adequately discuss the potential impacts of land-based sediment and rock that may be dislodge during bombing of FDM and its impact on the marine environment. Surveys have been conducted at FDM since 1999, and the DEIS suggest the impacts may be insignificant.

However, these surveys are not designed to statistically measure temporal changes in marine resources. These issues are not discussed as a possible impact to marine habitat, marine vegetation, marine invertebrates, marine fishes, or sea turtles. The Service recommends adding a section in each of marine groups that addresses land-based sediment from terrestrial sources as a secondary stressor.

Migratory Birds

The EIS should provide a more thorough analysis of impacts to seabirds that occur or move through FDM as a result of all the alternatives. The DEIS states that increased bombings will

"not result in a significant adverse effect on populations of the great frigatebird, masked booby or other marine bird species". This conclusion is not adequately supported by the information in the DEIS. At a minimum, the EIS should include a statistical analysis of the 1995 to 2012 booby survey and trend data on FDM, provide long-term monitoring data on seabirds that occur on or near FDM other than the three booby species, and current information on the status of resident seabird populations that occur in the Mariana Islands.

Furthermore, impacts to marine bird populations need to be defined as outlined in 50 C.F.R. Part 21.15 which defines a population "as a group of distinct, coexisting conspecific individuals, whose breeding site fidelity, migration routes, and wintering areas are temporally and spatially stable, sufficiently distinct geographically (at some time of the year), and adequately described so that the population can be effectively monitored to discern changes in is status".

The proposed activities would result in a significant increase in explosions on FDM; therefore the EIS should describe how the increase in the frequency of bombing would impact seabirds on FDM. The EIS also should disclose the extent that shore bombardment causes mass wasting of cliff lines, which may result in the loss of nesting and roosting seabird habitat.

Invasive Species

The accidental introduction of the brown treesnake (BTS) on Guam in the 1940's resulted in the extirpation of most of the native forest bird species in as little as 40 years (Savidge 1986, 1987). The BTS also has been linked to the extirpation of native reptile species on Guam (Fritts and Rodda 1998). This invasive species has become a significant economic, agricultural, and public health concern. The risk of BTS establishment in the CNMI posed by this proposed action, if not properly mitigated, is very high. The EIS should adequately disclose any transport or staging of personnel and equipment/cargo from Guam to Saipan, Tinian, Rota or FDM or other sites within the CNMI, and include BTS interdiction measures to address this concern. The proposed increase in tempo of activities has the potential to overwhelm current interdiction efforts in place on Saipan, Tinian, and Rota.

The EIS should include increased support for BTS interdiction and control. In particular, the EIS should provide measures to decrease the risk of BTS dispersal from Guam by providing support of snake suppression on a landscape level on Guam. The EIS also should include a commitment to maintain efforts to meet the 100 percent inspection goal for all outgoing vessels and aircrafts, carrying goods, personnel, cargo, vehicles, from Guam and to conduct repetitive inspections of all incoming vessels and aircrafts arriving from Guam.

It should be noted that "The National Defense Reauthorization Act of 2009" requires that the Department of Defense "shall establish a comprehensive program to control and, to the extent practicable, eradicate [brown tree snake (BTS)] from military facilities in Guam and to ensure that military activities . . . do not contribute to the spread of BTS."

Readability of the DEIS

As you are aware, the EIS should be a succinct statement of all the effects for proposed activities on the environment. The regulations promulgated by the Council on Environmental Quality (CEQ) in 1978 established a target size for EIS's as "normally not to exceed 150 pages in length and for proposals of unusual scope or complexity 300 pages" (40 CFR 1502.7). In March 2012,

CEQ published guidance on improving the NEPA process and recognized that there would be a range of appropriate lengths of EIS's, however agencies should keep EIS's as concise as possible (77 FR 14473). This DEIS is over 1700 pages in length. The sheer volume of the DEIS is prohibitive because an unreasonably large effort to review the document is needed to understand the information about the proposed activities. Pursuant to the regulation and guidance from CEQ, we recommend that you prepare a more succinct document to improve the readability of the EIS.

Cumulative Effects

The DEIS does not adequately discuss cumulative effects to marine resources, species of concern, listed and candidate species, and migratory birds. The EIS should disclose the cumulative effects to water quality, marine habitats, marine birds, marine vegetation, marine invertebrates and fish. In addition, given that there are proposed future increases in DOD activities on Tinian, including the establishment of a series of live-fire and maneuver Ranges and Training Areas on Tinian, the EIS should provide a robust discussion on the cumulative effects to species of concern and listed and candidate species on Tinian.

In particular, we are concern about cumulative effects to the Tinian monarch, a species of concern. The Tinian monarch is an endemic bird that occurs only on Tinian. This species was delisted in 2004, and the population has declined 38 percent between 1996 and 2008 (Camp et al. 2012). The future increase in military activity and use of Tinian may have significant cumulative impacts to this species. On FDM, we recommend that the EIS disclose the type and degree of cumulative impacts to terrestrial species and migratory birds.

Summary

The Service appreciates the opportunity to comment on the Mariana Islands Training and Testing Study Area DEIS and looks forward to collaborating with the DoN the finalization of this document. Specific comments on various sections in the DEIS are enclosed below.

Specific Comments

Page ES.6.1. Under the cumulative effects section, it states that "although the only significant impacts to terrestrial species and marine birds would occur on FDM, other activities within the Mariana Islands may indirectly impact or benefit species on FDM". We recommend that you provide clarification on how the proposed activities would benefit species on FDM in the EIS.

Page 2-59. Table 2.7-1 should include the approximate depth zones for the various areas of underwater detonations.

Page 2-20, 2.2.2. Amphibious Warfare. Frequency, estimated number of troops and vessels, number of landings are not adequately defined in the DEIS. Because the proposed activities occur on green turtles nesting beaches, a more detailed description of the activity needs to be provided in the EIS. The above information should be included in your analysis of impacts to nesting sea turtles in the EIS.

Page 2-28. Other Acoustic Sensors. It is unclear if the Navy is proposing to use Atlantic bottle-nosed dolphins and California sea lions on Guam or if this is an example of other acoustic sensors used at other facilities. This needs to be clarified in the EIS.

Page 2-45, 2.7. Alternative 1. Expansion of the Overall Study Area. The DEIS states ".. contains analysis where training and testing would continue as in the past, but were not considered in previous environmental analysis." This statement is confusing and needs to be clarified in the EIS.

Page 2-60, 2.7.1.3. Amphibious Warfare. Because of the increase in exercises for amphibious warfare, minimization and mitigation measures for nesting sea turtles need to be included in the EIS.

Page 2-60, 2.7.1.7. Further information needs be included about the shock wave generator to better assess resource impacts.

Page 2-61, 2.7.1.9. Other Training. To ensure better evaluation of impacts greater details needs to be provided regarding the amount, types, and locations of precision anchoring throughout the document.

Page 2-63. Littoral Combat Ship. Please provide greater detail regarding the shallowest depth of proposed operation. Insufficient detail related to this issue makes assessment of potential resource impacts challenging.

Page 2-63. Amphibious Combat Vehicle. Insufficient detail related to this issue makes assessment of potential resource impacts challenging. Specific information regarding the current and proposed type of vehicles and their estimated draft needs to be outlined.

Page 3.3-36, 3.3.4. Summary of Potential Impacts (Combined Impacts of All Stressors) on Marine Habitats. Impacts of stressors to marine resources within the study area are defined as a percentage of the total study area. We recommend addressing impacts within a square kilometer of effected area.

Introduction

Page 3.0-5, 3.0.1.2. Executive Orders. We recommend the addition of Executive Order 13089 Coral Reef Protection.

Marine Habitats

Page 3.3-1, 3.3. Marine Habitats. The summary of the impact from physical disturbance and strike states impacting marine habitats would not be expected due to high-energy surf and shifting sands. This is largely unfounded as there is no habitat data or maps provided to show there are non-hard bottom corridors to the shore. We recommend correcting the summary based on accurate habitat maps.

Page 3.3-2. The DEIS uses the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) to describe habitat types. However, this is not the appropriate classification for coastal and marine habitats. We recommend using the Coastal and Marine Ecological Classification Standard (CMECS) (June 2012). CMECS has been approved by the Marine and Coastal Spatial Data Subcommittee of the Federal Geographic Data Committee

(FGDC) and as a matter of federal policy, all federal agencies should use the guidance set forth from the FGDC.

Page 3.3-2. Table 3.3-1: Habitat Types Within the Open Ocean and Coastal Portions of the Mariana Islands Training and Testing Study Area. The terms used in the habitat type column should be converted into terms congruent with CMECS. If the terms are not converted, then the terms should be "cross walked" per the guidelines set by CMECS.

Page 3.3-3, 3.3.2. Affected Environment. All terms should conform to terminology used in CMECS.

Page 3.3-9-12 and Figures 3.3-1, 3.3-2, 3.3-3, 3.3-4. The maps are of insufficient scale to show meaningful information. Higher resolution maps should be made that target the specific areas of interest. They should also display the geomorphology structure in addition to the biological cover classes.

Page 3.3-20. The area potentially impacted by underwater detonations may be less than one percent of the study area, but this is a mischaracterization of the potential impact. For example, coral reef habitat is a small percentage of the study area, but impact to significant coral reef should not be compared to the entire study area that contains significant open ocean habitat. We recommend correcting this throughout the EIS.

Page 3.3-23. The DEIS states "Some vessels, such as amphibious vehicles, would intentionally contact the seafloor in the surf zone." The term surf zone is not the appropriate terminology. The terms reef crest and reef flat should be used. These terms are significant as the biological communities associate with them can be significant in some situations. The term surf zone is a more general term used and is not meaningful from an impact analysis perspective.

Page 3.3-35, 3.3.4. Summary of Potential Impacts (Combined Impacts of All Stressors) on Marine Habitats. Information and/or data to support habitat utilized by underwater detonation will primarily be soft sediment needs to be added.

Sea Turtles

Page 3.5-1. Amphibious landings which could directly impact turtle nesting areas are not addressed in the sea turtle section and are poorly address throughout the DEIS. We recommend adding a section on amphibious vehicle landing, including the proposed locations of landing, time of year, number of vehicles and any proposed mitigation measures in the EIS.

Marine Birds

Page 3.6-14. Figure 3.6-3: Offshore Seabird Foraging Concentrations, Observed in summer 2008. This figure highlights concentration of foraging area for seabirds around Saipan and Tinian. We recommend you include avoidance and minimization measures for seabirds in known foraging areas in both near shore and off shore waters.

Page 3.6-17. Figure 3.6-4: Known Breeding Locations for Seabirds on Military Lands on Guam. Data reported for the graph is from 2005. Please revise this information with current survey data.

Page 3.6-22. Data indicated a significant reduction in the local population and potentially the extirpation of the great frigatebird colony on FDM. We are concerned about the loss of one of the last breeding colonies of frigatebirds in the Mariana Islands, and recommend the EIS include mitigation measures to offset impacts to this species.

Page 3.6-20. Figure 3.6-6: Seabird Rookery Locations on Farallon de Medinilla. The color coding used for this figure is difficult to read. Based on the current color coding we were unable to adequately tell where the great frigatebird colony occurred on FDM. We recommend using a clearer color coding system to make the rookery areas more visible in relation to the training areas and using a more current data set.

Page 3.6-21. The three figures for the masked booby, red-footed booby and brown booby do not provide adequate information to conclude there are no impacts to these species as a result of military training activities. The raw population data is not adequate to determine if military activities are impacting nesting seabird populations. If possible, we recommend a more thorough analysis be completed for each of these species to determine if there is (or isn't) a relationship between military activity and population trends through time. This analysis should take into account duration, intensity and local of training activities relative to the aforementioned species. An additional analysis of population trends through time needs to be conducted on the raw data to determine if these three species populations have remained stable, increased or decreased through time on FDM.

Page 3.6-52. Under MBTA regulations (50 C.F.R. Part 21) population's impacts must be addressed at the local population level for each alternative. We recommend re-assessment of project impacts to seabird populations based on local level populations and not global population levels.

Page 3.6-62. The stress and disturbance to nesting seabirds caused by the significant increase in frequency of flyover events is not adequately addressed in the DEIS. Disturbance caused by flyovers elicits a short-term behavioral response from nesting birds on FDM. With the increase in frequency in flyovers there will be an increase of behavioral responses which may over the long-term have negative impacts to the overall health of the birds.

Page 3.6-80a. The DEIS does not address the impacts of shore bombardments to rookery areas. Avoidance of rookery areas by establishing designated range area for ordinance is mentioned as a minimization measure. Shore bombardment targets cliff line areas where birds nest. Firing at cliff lines has caused mass wasting on the island and loss of available nesting habitat for birds. If the proposed military training activities result in further wasting of cliff line and cause the subsequent loss of seabird nesting habitat, mitigation for impacts to seabirds should be included in the EIS.

Page 3.6-80b. In the DEIS the Navy has come to the conclusion that the increase of rounds per year is unlikely to endanger breeding activities of the seven MBTA species that occur on FDM. This determination is based on surveys that have been conducted on FDM over a 12-year period and that existing conservation measures and targeting restrictions have been adequate. The Service feels this remark cannot be supported by the data provided in the DEIS. The Service recommends that past DoN seabird survey results for FDM be independently analyzed and reviewed. This effort should be conducted in close coordination with the Service.

Page 3.6 82. Disturbance caused by increasing the frequency of bombing events and the associated impacts to nesting birds and habitat need to be addressed in the EIS.

Page 3.6-83. The DEIS does not provide adequate information to conclude that an increase in training tempo will not have a negative impact nesting seabirds on FDM. A first step to answering this question would be an independent analysis and review of FDM seabird survey results conducted in close coordination with the Service. If this analysis includes an assessment of short and long-term impacts of past training tempo some inference related to impacts could be made As training tempo appears to be increasing significantly, there is a concern that training tempo will reach of threshold where certain seabird species may abandon FDM as a nesting site (e.g. great frigatebird).

Marine Vegetation
Page 3.7-1, 3.7.1. Introduction. We recommend specifically highlighting sea grass instead of simply flowering plants.

Marine Invertebrates
Page 3.8-52. The DEIS should state the number of detonations anticipated that will not be near the surface and may have impacts to benthic resources. The anticipated depth compared to the water depth should also be discussed in greater detail. This will allow better assessment of these impacts.

Page 3.8-54. The detonation sites should be further refined geographically. Stating they can be anywhere in the Mariana littoral zone is rather broad and includes areas where the impact could be significant. We recommend discreet locations of detonations be clearly defined. This information will allow better assessment of impacts.

Page 3.8-55, 3.8.3.1.2.2. Alternative 1, Training Activities. Further analysis should be conducted on the potential impact to deep-water corals. Many deep-water coral species are fragile and may be impacted from military training activities easier than shallow corals. In addition, it is well documented that some deep-water corals (for example, gold corals of the genus Geradia can be 2,000 years old).

Page 3.8-56. Testing Activities. We recommend the EIS state the actual increase of high-explosives of this alternative over the No Action Alternative. This will allow easier comparison of impacts between alternatives.

Page 3.8-57. The DEIS states "However, training activities that include bottom-laid underwater explosions are infrequent (only about 50 explosions per year)…" We recommend this estimation be more clearly defined throughout the EIS. This will allow easier comparison of impacts between alternatives.

Page 3.8-57. Testing Activities. We recommend the EIS state the actual increase of high-explosives of this alternative over the No Action Alternative. This will allow easier comparison of impacts between alternatives.

Terrestrial Species and Habitats
Page 3.10-1. Any activity that involves low-flying (<3000 ft. above sea level) aircraft including unmanned aircraft over Rota may negatively affect nesting Mariana crows and Rota bridled

white-eyes (*Zosterops rotensis*), and Mariana fruit bats as a result of aircraft noise, vibration and fuel exhaust. We recommend these activities be avoided.

Page 3.10-1. In the DEIS critical habitat on Rota has been designated for the Mariana crow but is not recognized in the last bullet on this page.

Page 3.10-2 In the DEIS for the second to last bullet in the blue highlighted area, if air and seaport transportation is increased beyond the current level, the DoD will need to address increase in activities and invasive species interdiction efforts.

Page 3.10-2. Impacts to lands on Rota are poorly defined and vague in the DEIS. We recommend a map laying out all potential areas to be used for military activities on Rota.

Page 3.10-3-4. The table lists eight bird species found within the MITT study area and the text on page 3.10-3 states six species of birds listed in the table. Please correct this error.

Page 3.10-4. Table 3.10-1 Indicates that the Mariana Crow is extirpated from the MITT study area. Please correct this to state that it is present in Rota.

Page 3.10-8. Some species of birds listed in the Birds of Conservation Concern for U.S. Pacific Islands that breed within the study area were left off the list: Bridled white-eye, Micronesian Myzomela, two sub-species of Rufous Fantail (mariae sp. and saipanensis sp.). We recommend they be added and listed into Table 3.10-3. In addition, "none of the birds are known to breed on FDM," is stated in the DEIS. There is a paucity of terrestrial data available for FDM. A 5.5 hour visit to the island in 1996 cannot be used to justify this statement. We recommend DOD conduct a more thorough survey of terrestrial birds in order to determine what species occur there and how they use the island so a more conclusive impact statement can be made.

Page 3.10-9. Table 3.10-3: United States Fish and Wildlife Service Birds of Conservation Concern and Breeding Terrestrial Birds within the Study Area. The table leaves out the Saipan Marpi Maneuver Area for almost all the species in the Breeding locations on DOD Owned or Leased Property column. We recommend adding the Saipan Maneuver area to this table.
Page 3.10-10-11. Table 3.10-4: Major Vertebrate Taxonomic Groups.

a) Some areas proposed for use are not addressed in the Presence in Study Area column such as the Marpi Maneuver Area for the swiftlets and soneyeaters and Rota for the drongo and crows/jays.
b) For the Old World flycatchers, Rota needs to be removed from the Description column.
c) In the white-eyes row the Bridled white-eyes are 2 distinct species, Rota White-eye found on Rota and Bridled White-eye found on Saipan and Tinian.

Page 3.10-19, 3.10.2.1.2. Rota. Please define "other areas in conjunction with local law enforcement" because it is impossible to determine impacts of an area when it is not defined.

Page 3.10-20. The I'Chechon Bird Sanctuary is on the southeastern coastline not the northeastern coastline as stated in the DEIS. The bird sanctuary is now part of the Mariana Crow Conservation Area which runs along the coast from the northeast to the southeast of the island. Please correct this error.

Page 3.10-21. Additional wetlands found in the Mahlang and Bateha areas on Tinian need to be added to the section 3.10.2.1.3.4 Wetlands. This is important for planning necessary mitigation or avoidance measures.

Page 3.10-22, 3.10.2.1.4 Saipan Marpi Maneuver Area. In the DEIS, the Marpi Manuever Area is not adequately described with the justification that the area is rarely used. If use occurs in an area, then an adequate description of flora and fauna needs to be completed. We recommend including a description of Marpi's resources.

Page 3.10-27, 3.10.2.2.2. Rota. In the DEIS areas of use for Rota and not adequately defined. These areas need to be outlined and an adequate description of flora and fauna needs to be completed.

Page 3.10-28. As written, the DEIS describes the delisting of the Tinian Monarch as being done by the CNMI government. Please update with accurate information about federal delisting by the Service.

Page 3.10-29, 3.10.2.2.4. Farallon de Medinilla. In the DEIS most reports for mammals, reptiles, amphibians, and invertebrates are bases on incidental observations. We recommend the DOD conduct complete surveys on FDM to determine species presence, distribution, use of the island in order to determine impacts to these species from military activities.

Page 3.10-30, 3.102.3.1.2. A citation needs to be added to the statement that Rota supports 121 mature trees. According to CNMI Forestry's most current estimate, there are believed to be less that 40 mature trees left.

Page 3.10-30, 3.10.2.3.2.4. Status within the Mariana Islands Training and Testing Study Area. Nesogenes has also been found on As Matmos Cliffs. We recommend you update the information in the EIS.

Page 3.10-31, 3.10.2.3.3.2. Population and Abundance. Add literature citations to this section so that readers and commenters are able to verify information.

Page 3.10-32, 3.10.2.3.4.4. Status within the Mariana Islands Training and Testing Study Area. The DEIS does not adequately address foraging areas for swiftlets in general and specifically within the Saipan Marpi Maneuver Area. We recommend addressing and identifying foraging sites within the study area.

Page 3.10-34, 3.10.2.3.5.1. Status and Management. There are no recent typhoons to account for the "devastated forest habitat". Although there has been some habitat loss due to development, habitat is currently not the limiting factors for crow. There is current literature for this species that would update and more accurately reflect the current situation for this species. We recommend this section be re-written for the portion on Rota.

Page 3.10-36, 3.10.2.3.5.3. Biology, Ecology, and Behavior. Add literature citations for the information used in this section. Clarification also needs to be made when referring to nesting habitats on Guam vs. Rota.

Page 3.10-37, 3.10.2.3.6.4. Status within the Mariana Islands Training and Testing Study Area. Additional wetlands that occur within the Mahlang and Bateha areas need to be added to this section.

Page 3.10-40, 3.10.2.3.8.4. Status within the Mariana Islands Training and Testing Study Area. The Saipan Marpi Maneuver Area needs to be addressed in this section.

Page 3.10-53, 3.10.3.1.1.2. Alternative 1. Training Activities. In the DEIS the expected impacts for all three Alternatives is expected to remain the same. We do not concur with this statement. There will be a significant increase in munitions use proposed, which does not address disturbance created through increased frequency of use. Please include analyses for these additional impact.

Page 3.10-55, 3.10.3.1.2.1. No Action Alternative. Training Activities. In the DEIS, anecdotal evidence of Mariana crow behavior in relation to noise is noted. It is unlikely two male crows would be attending a nest as stated in the document. If two males were attending a nest, then they are unlikely to be a good representation of the wild population and should not be used as an example. In addition, Rota crows are extremely sensitive to noise disturbance as cited by Morton 1996. We recommend anecdotal evidence not be used as justification for the conclusion that there would no impacts to crows from military activities.

Page 3.10-56. In the DEIS it states that low altitude over flights do not occur over critical habitat or conservation areas, however, low altitude flights by military aircraft has been observed over these areas at least twice since 2009. As expressed above, Rota is important for the survival and recovery of fruit bats and crows. We recommend removing Rota as a site for training activity, especially low altitidue flights because of their potential impacts to crows and bats...

Page 3.10-56. In the DEIS, Mariana fruit bats are stated to mainly occur in the Sabana area on Rota. This information needs to be updated as fruit bats occur throughout the island and locations may change through time. Proposed activities for Rota need to address this fact and the EIS needs to be updated to address this issue.

Page 3.10-56&57. We disagree with the statement that adverse impacts to Mariana fruit bat will be insignificant because activities will be infrequent. It only takes as single low flying aircraft over a fruit bat colony to cause a significant disturbance event to result in roost abandonment. Impacts from low flying aircraft could include the following: flushing of the colony resulting in pups being dropped and fetuses miscarried by panicked mothers, high stress loads for fleeing individuals, injury from bats colliding with each other as well as collisions with cliffs and trees, aircraft strikes, and abandonment and subsequent starvation of non-volant young. In addition, the majority of fruit bats occur in only 2-4 colonies so disturbance of a single colony could result in impacts to the overall population. We ask that you revise your analysis on the impacts to the Mariana fruit bat in the EIS.

Page 3.10-57. Due to the high sensitivity to noise, we recommend over flights over Rota be completely avoided. If the DOD continues to consider Rota for military training activities, then the EIS should provide the location of other terrestrial areas that potentially would be used for military training on Rota; identify low-level flight routes and describe the likelihood of aircraft striking fruit bats, and estimate the number of military trainings and low-level flights that would occur on Rota.

Page 3.10-58, 3.10.3.2.1. Impacts from Aircraft and Aerial Target Strikes. Any activity that includes use of helicopters or any other aircraft at low altitudes over land on Guam, Tinian, Saipan, and especially Rota, presents the possibility to aircraft strikes that includes fruit bats. Fruit bats can and do occur over 500ft. We recommend addressing air strikes to include fruit bats in this section and throughout the DEIS.

Page 3.10-64. In the DEIS it states "no terrestrial bird species likely breeds on FDM." Due to limited on-the-ground survey data for FDM this claim cannot be substantiated.

Page 3.10-67&68. No surveys for endangered species of have been conducted in the Saipan Marpi Maneuver Area. In order to understand potential effects to endangered species in relation to military activities, surveys need to be completed to determine their presence, distribution and use of the area.

Page 3.10-69, 3.10.3.2.4. Wildfires. In the DEIS wildfires are only addressed for activities on FDM. Fires can happen from any activity accidentally especially in the dry season. DoD needs to address this in the DEIS for all areas where military activities will occur on land. We recommend a fire plan be in place for the different areas used on Tinian and Saipan.

Page 3.10-72, 3.10.3.3.1.1. No Action Alternative, Alternative 1, and Alternative 2. Training Activities. The DEIS does not address the increase of tempo which will require an increase in inspection for BTS. An increase in temp of activities will require increased inspections which may strain the current inspections for staff based on Saipan, Tinian and Rota. We recommend the DOD address how they will increase the local capacity for inspections due to the increase of the tempo of military exercises.

Page 3.10-78. Table 3.10-7: Summary of Endangered Species Act Effects Determination for Endangered Species Act-Listed Terrestrial Species. We do not concur with the NLAA determination for fruit bats and crow on Rota.

Invasive Species

General (no specific page). The Service recommends that the DoN include the following brown tree snake (BTS) interdiction and control measures in the EIS:

1. The DoN will collaborate with the Service, U.S. Department of Agriculture (USDA) - Wildlife Services and CNMI Department of Land and Natural Resources (DLNR) to develop and implement operating instructions related to BTS interdiction and all proposed DoD operations in the CNMI. These operating instructions would require Service approval and should be completed prior to initiation of the proposed action.

2. The DoN will route inbound personnel and cargo for the proposed military exercises directly to CNMI training locations to avoid Guam seaports and airfields. If Guam cannot be avoided, the USN will implement appropriate interdiction methods that include repetitive inspections (i.e. a second inspection on the receiving island) for all activities. Interdiction methods and protocols would be coordinated with USDA - WS, CNMI - DLNR, and the Service.

3. If cargo and aircraft and vessels leave from Guam and are associated with the proposed project, the DoN will implement 100 percent inspection of all outgoing cargo and aircraft. Inspections will be performed with USDA - WS quarantine officers and dog detection teams to meet 100 percent inspection goals for training activities. The Service and USDA will assist in the development of protocols for implementation of interdiction and control methods aimed at controlling BTS as related to the proposed military training activities.

4. The DoN will establish and use snake-free quarantine areas for cargo and equipment (associated with the proposed military training) traveling from Guam to CNMI. These brown treesnake sterile areas would be subject to: (1) day and night searches with appropriately trained interdiction canine teams that meet performance standards; (2) snake trapping, and (3) visual inspection for snakes. Both temporary and permanent snake barriers would be implemented depending on scale and scope of activities.

5. The DoN will actively support rapid response actions related to BTS in the CNMI in the vicinity of DoD property and training sites by working with U.S. Geological Survey Biological Resources Discipline and the Service to develop technology, procedures, and protocols that will support rapid action for a BTS sighting. Active support will include logistical and financial support for rapid response efforts related to DoD activities.

6. The DoN will provide BTS awareness training for all military and contractor personnel including a mandatory viewing of a brown treesnake educational video, distribution of pocket guides with BTS information and personal inspection guidelines to be carried at all times, and assurance that BTS awareness extends from the chain of command to the individual military service member.

7. Due to limited availability of BTS inspectors, trained dogs, and quarantine facilities and equipment on Guam and the CNMI, the DoN will coordinate closely with the Service, USDA - WS, CNMI - DLNR, and other agencies supporting and implementing BTS control efforts within the Mariana Islands. The DoN should commit to funding any increased military and civilian BTS interdiction needs in the CNMI and Guam that are directly or indirectly related to the proposed action.

8. The DoN should support BTS research that assists in the landscape-level control of BTS on Guam, detection and eradication of BTS that might be found in the CNMI due to DoD activities and refinement of current interdiction efforts.

Cumulative Impacts

Page 4-13, 4.4.1. Resource Areas Dismissed from Current Impacts Analysis. Removal of sediments and water quality, marine habitats, marine birds, marine vegetation, marine invertebrates and fish should not be removed from the cumulative analysis impact. We recommend an analysis be completed for these categories.

Page 4-13, 4.4.2. Sediments and Water Quality. We recommend addressing mass wasting on FDM caused by military activity from shore bombardment and bombing for all alternatives.

Page4-25, 4.4.6.9. Cumulative Impacts on Sea Turtles. Disturbance of nesting beaches and possible trampling of sea turtles nests are not address in the cumulative impacts. We recommend

the impacts from the amphibious landing activities being proposed be addressed in the cumulative impacts.

Page 4-26, 4.4.7. Marine Birds. We recommend address loss of nesting habitat for nesting seabirds on FDM from mass wasting caused by military activities, address the increase level of disturbance from increasing the temp of activities on FDM, address population impacts based on local populations not global population levels.

Page 4-29, 4.4.1.1. Terrestrial Species and Habitats. The DEIS states that cumulative effects from present, past, and future projects are not expected to result in significant impacts on terrestrial species. The DEIS states the only the Micronesian megapode would be significantly impacted as a result of the training and testing activities planned on FDM. The DEIS should disclose and explain what are the significant impacts (e.g. decrease in numbers or range) to megapodes.

Standard Operating Procedures, Mitigation, and Monitoring

Page 5-1, 5.1. Standard Operating Procedures. The mitigation section does not seem to address impacts associated with both amphibious landings and underwater detonations. We recommend developing habitat criteria to avoid areas of significant resources from these impacts. Additional habitat data may need to be collected or analyzed to define areas or general criteria.

Page 5-54, 5.3.4.1.7. Avoiding Location Based on Bathymetry and Environmental Conditions. This section seems to be written from the perspective of sonar activities and other training activities. However, these considerations should not be discounted for all testing and training activities.

Page 5-62. Mitigation will be needed for terrestrial species in the Study Area, particularly on activities proposed for Rota.

Page 5-69. Mariana Fruit Bat strikes need to be added to the strike reporting section.

The significant change of greatly expanding open ocean areas of possible activities may cause increased impacts on some of the pelagic marine resources, especially marine mammals, which occur in waters managed by the National Park Service at Guam. But our major concerns are on changes proposed for training in near-shore waters adjacent to marine waters managed by the National Park Service at Agat Bay and Asan Bay Guam.

The provision in Alternatives 1 and 2 to create an increase in net explosive weight for underwater detonations from 10 pounds to 20 pounds at Agat Bay Mine Neutralization Site and Outer Apra Harbor Underwater Detonation Site is of particular concern. We request further analysis in the EIS of impacts from this proposed increase and consideration of eliminating this increase or improving practices or mitigations to lessen potential damage, even from the current 10 pound charges. We have observed the deaths of numerous fish caused by these detonations carried out in Guam waters as part of the mine detection and detonation exercises. Increased size of charges and increased frequency will add to the losses of fish, which include those harvested for local consumption. It is not known whether the numerous coral species found in Guam that are currently proposed for ESA listing as threatened or endangered occur close enough to detonation sites to suffer impacts from the training. Surveys to determine this should be done and

added to the EIS. Likewise, surveys are recommended to determine whether increased detonation charges may damage submerged prehistoric and historic resources near the training sites.

Although the detonations planned to occur on the seafloor would be located in primarily soft-bottom habitat, such habitats in Agat Bay are known to support populations of the rare garden eels *Heteroconger hassi*. Also these soft bottom areas in Agat Bay are reported as important sites of sting ray foraging and mating. Endangered and threatened hawksbill (*Eretmochelys imbricata*) and green (*Chelonia mydas*) sea turtles are common in Agat Bay and Apra Harbor and are reported to nest on shores close to the Agat Bay mine training site. These issues should be addressed in the EIS. We expect the most damaging impacts of any detonations (even less than 10 lbs of explosives) in Agat Bay are the impacts on the resident pods of spinner dolphins *Stenella longirostris*.

Throughout the year, daily boat tours bring tourists to see the pods of spinner dolphins at Asan Bay and especially Agat Bay. These trips are a popular activity for international visitors who are the largest component of Guam's tourism industry. The presence, health and visibility of dolphins also have traditional cultural value among many Guam residents. These dolphins would suffer adverse effects of vessel passages and sonar use in the proposed training exercises, but their exposure to nearby detonations at the Agat Bay Mine Neutralization Site could be expected to create the most serious harm and cause them to possibly leave their customary range within the War in the Pacific National Historical Park waters of Agat Bay. Simply stopping explosions as mitigation when marine mammals are seen by training lookouts at the detonation sites does not ensure that dolphins are not harassed by the detonations. Dolphins may be affected while out of sight and cumulative impacts of the increased charges and other disturbances may drive them out of the park and diminish their availability for tour observations. This EIS and plans for future training and testing activities by the Department of Defense in Guam waters require more detailed studies of this important discrete population of dolphins, including their census, life histories, movements, and feeding and breeding needs. Agat Bay mine detonations should cease until better knowledge of impacts on these marine mammals is determined.

The NPS acknowledges the DoN proposal to use the Programmatic Agreement (PA) developed for the MIRC EIS/OEIS to satisfy the requirement for consultation under Section 106 of the NHPA on the MITT EIS/OEIS, as stated in Table 3.11-3: *Summary of Section 106 Effects of Training and Testing Activities on Cultural Resources*. We do not agree with the DoN findings as stated in the narrative sections (e.g. 3.11.3.2.1.2 and 3.11.3.2.1.3) that by following established protocols (presumably the MIRC PA stipulations) *"…no National Register of Historic Places-eligible resources would be affected."* Perhaps it was meant to say there would be no *"adverse"* effects? In our comments to the DoN regarding Forager Fury I and II exercises, the NPS has clearly stated our belief that there have been and continue to be adverse effects to the resources.

Given that the nature of the current exercises has changed from those envisioned by the NPS during the MIRC EIS/OEIS consultation, and that the current level of activities will be expanded, the NPS would like to re-open consultation. As stipulated in Section IV.B.4.d of the MIRC PA, Joint Region Marianas prepares annual reports documenting the effects of training activities on the NHL each year. The current series of Forager Fury exercises highlights the need for a comprehensive plan to address the cumulative impacts to the Tinian Landing Beaches, Ushi Point Field, and North Field National Historic Landmark from Department of Defense use and maintenance of the North Field Historic District. The NPS would like to consult with DoN on

development of a long-term management plan for clearing the runways, taxiways and associated roads, using the Tinian North Field Cultural Landscape Report as a guiding document for treatments. This type of plan would clearly outline the process and desired outcomes for the management of the runways and streamline the compliance process for future exercises envisioned in the MITT EIS/OEIS. A management plan could be used as a tool to provide protocols and documentation standards as well as methodology for analyze of the effectiveness of the treatments.

Thank you for the opportunity to participate in this review. The National Park Service is pleased to continue working with DoN to ensure the protection and preservation of resources in the areas proposed for training and testing. Should you have any questions regarding our comments, please contact me at 671-477-7278, extension 1010 or via email (mike_gawel@nps.gov).

Sincerely,

Patricia Sanderson Port
Regional Environmental Officer

Enclosure: FWS References

cc:
Director, OEPC
OEPC Staff Contact: Loretta Sutton
FWS, Earl Campbell
NPS, Barbara Alberti

FWS References

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

December 12, 2013

Naval Facilities Engineering Command, Pacific,
258 Makalapa Drive, Suite 100,
Pearl Harbor, HI 96869-3134,

Attention: MITT EIS/OEIS Project Manager

Subject: The Mariana Islands Training and Testing Environmental Impact Statement / Oversees Environmental Impact Statement, Guam and Mariana Islands (CEQ # 20130266)

The U.S. Environmental Protection Agency (EPA) is providing comments on the Mariana Islands Training and Testing (MITT) Draft Environmental Impact Statement (DEIS) / Oversees Environmental Impact Statement. Our comments are provided pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508) and our NEPA review responsibility under Section 309 of the Clean Air Act.

EPA provided scoping comments for this project in a letter dated November 3, 2011. We support the Navy's goal for this action, to maintain military readiness. We emphasize the importance of the Navy's continued coordination with the National Marine Fisheries Service and the need to use the best available scientific information to assess the impacts of the project. Based on our concerns about alternatives, water resources and standard operating procedures and mitigation measures, we have rated the proposed alternative Environmental Concerns – Insufficient Information (EC-2). The enclosed Detailed Comments elaborate on these concerns and our recommendations.

We appreciate the opportunity to review this DEIS. When the Final EIS is released for public review, please send one hard copy and one electronic copy to the address above (mail code: CED-2). If you have questions, please contact me at (415) 972-3521 or have your staff contact Tom Kelly at kelly.thomasp@epa.gov or (415) 972-3856.

Sincerely,

Kathleen Martyn Goforth, Manager
Environmental Review Office

Enclosures: EPA's Detailed Comments
Summary of EPA's Rating Definitions

cc (via email): Valerie Brown, National Marine Fisheries Service
Anthony Montgomery, U.S. Fish and Wildlife Service

Alternatives

The Mariana Islands Training and Testing Study Area is composed of "at-sea ranges and land based training areas on Guam and CNMI," and "operating areas, and special use airspace in the region of the Mariana Islands that are part of the Mariana Islands Range Complex (MIRC) and its surrounding seas, and includes a transit corridor" (ES-1). Both action alternatives would nearly double the current at-sea training area (from 497,469 nm^2 to 984,601 nm^2, page 1-2). The proposed action, Alternative 1, would support an increase in baseline training, and Alternative 2 would support an even larger increase in training.

The DEIS states that the No Action Alternative, required by CEQ regulations, "would fail to meet the purpose of and need for the Proposed Action" (p. 2-54). EPA acknowledges the Navy's need to train and test to achieve its mission, the stated purpose and need for the action (p. 1-4). The DEIS further clarifies that the action implements the Navy's Fleet Readiness Training Plan, including four component phases (p. 1-5 to 1-8), and emphasizes the strategic importance of the range (p. 1-8 and 1-9). The DEIS does not, however identify the factors that led the Navy to conclude that the current range size is inadequate, or by extension, the factors that led the Navy to propose the expansion of the training area in the proposed action. We note that Alternative 2 also includes additional training beyond the proposed alternative, but does not propose expansion of the training area beyond the proposed alternative.

Recommendation for the FEIS:

- Identify the factors that led the Navy to determine the training area expansion necessary to meet the purpose and need for the Proposed Action.

Water Quality

The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States:2008[1] acknowledges sediment run-off as one of the most serious stressors affecting coral reefs in the Mariana Islands. Sediment impacts coral health by blocking light and inhibiting photosynthesis, directly smothering and abrading coral, and triggering increases in macro algae. Additionally, the Department of Defense has committed "to protect U.S. and International coral reef ecosystems and to avoid impacting coral reefs to the maximum extent feasible".[2]

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[1] Waddell, J.E. and A.M. Clarke (eds.), 2008. The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008. NOAA Technical Memorandum NOS NCCOS 73. NOAA/NCCOS Center for Coastal Monitoring and Assessment's Biogeography Team. Silver Spring, MD.

[2] Department of Defense Policy Statement on Executive Order 13089, see Department of Defense Coral Reef Protection Implementation Plan < http://www.denix.osd.mil/nr/upload/dodbk5.pdf >

We are concerned by the potential for erosion by current activities at Farallon De Medinilla as well as the increased training of the proposed alternative. The 2008 range assessment that includes FDM indicates "a narrow submerged shelf with limited coral communities surrounds the island."[3] Per the Range Sustainability Environmental Program Assessment Manual, the range assessment did not assess the fate and transport of sediment, including munitions constituents, from the island.

Recommendations for the FEIS

- Discuss the impacts of erosion at FDM on near shore habitats;
- Provide maps showing coral reefs throughout the training and testing area (e.g. FDM, Santa Rosa Bank etc.)
- Discuss the results of the 5 year reassessment of Marianas Land-Based operational range complex (if available); and
- Consider the potential for mitigation measures at FDM (e.g. construction of settling basins, or moving range targets) to reduce sediment impacts.

Standard Operating Procedures and Mitigation Measures

The DEIS notes a provision of the 2009 proclamation creating the Marianas Trench National Monument:

> the Armed Forces shall ensure, by the adoption of appropriate measures not impairing operations or operational capabilities, that its vessels and aircraft act in a manner consistent, so far as is reasonable and practicable, with this proclamation. (p. 5-50)

The DEIS does not identify any measures adopted or proposed specifically for the purpose of ensuring that training in the National Monument is consistent with the proclamation.

Recommendation for the FEIS:
Identify the appropriate measures created in response to the presidential proclamation.

[3] Final Range Condition Assessment Marianas Land-Based Operational Range Complex Decision Point 1 Recommendations Report GUAM AND COMMONWEALTH NORTHERN MARIANA ISLANDS, May 2008 < http://www.denix.osd.mil/sri/upload/Final-Marianas-DP1-ES-Official.pdf>

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

Western Pacific Regional Fishery Management Council

November 12, 2013

Naval Facilities Engineering Command, Pacific
Attn. MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
JBPHH, HI 96860-3134

To Whom It May Concern,

Thank you for the opportunity to comment on the Draft Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OES) for the Marianas Islands Training and Testing (MITT) area. The Western Pacific Regional Fishery Management Council (Council) reviewed the draft EIS/OES and acknowledges the actions taken by the Department of Defense (DOD) in putting out public notices of training activities, restricted areas, and leaving areas accessible to fishermen during training activities (e.g. Warning Area-517 offshore of Guam). However, we believe the DOD could be doing more in this regard.

For example, the EIS/OES identifies that the DOD will continue to work with the public on accessibility to areas within the MITT, but does not offer any proposed public activities or mechanisms to facilitate communication. With this mind, we maintain our recommendation identified in our November 2011 letter to Deputy Assistant Secretary of Navy, Donald Schregardus, that the US Navy should establish a Marianas fishing community advisory committee that focuses on issues associated with military activities and fisheries in the Marianas. Clear and consistent communication with the Marianas fishing communities will reduce confusion on where and when fishing is restricted during training activities as well as provide the Navy with information on areas that are important to fishermen.

The Council also believes that the draft EIS/OES could be enhanced by better describing the direct, indirect, and cumulative impacts to fishermen from military training activities. The primary example of impacts is the 0-12 nautical mile danger zone around Farrallon de Medinilla (FDM), whereby access by fishermen is prohibited during training activities. The draft EIS/OES identifies that fishermen were restricted from fishing within 0-12 nm 201 days in 2012, and prohibited from fishing from 0-3 nm around FDM all year around. FDM is a large bank that provides excellent habitat and fishing grounds for bottomfish such as the red-gill emperor. Closure of the FDM fishing grounds forces fishermen to fish in areas around Saipan and Tinian. These areas are subject to higher fishing pressure, thus increasing potential for lower catch rates and local depletion. The cumulative impact analysis should describe the impacts of training activities on fishing communities in regards to reduced fishing areas and timing of training activities with regards to fishing seasons.

The Council also reiterates its previous comments in its July 25, 2013 letter to the Pacific Naval Facilities Engineering Command regarding access and marine transit around Tinian. It is our understanding that the DOD is proposing to designate a safety zone that extends seaward from the shoreline to 3 nautical miles or more around the northern half of the island of Tinian. This area is proposed to be closed during live-firing practices. While the safety zone is described as an integral part of the training range, its proposed location would also include the western side of Tinian, restricting marine activities in that area during those times. The closure would prohibit boat travel during exercises, thus diverting passage from the traditional route, and forcing residents to transit a longer route, resulting in increased fuel costs and travel times. The Council suggests that the eastern side of the island would be a more appropriate place to designate a safety zone for military training activities.

The Council would also like to highlight that fisheries development in Guam and CNMI is important to the local economy and food security, and also serves to perpetuate the cultural fishing traditions of the Marianas. The DOD should be considering the potential impacts of its activities on the development of fisheries, which may include offshore FADs and longline fishing. Planning for compatible future uses of the marine environment should be a conducted in coordination with Guam and CNMI governments and other applicable agencies. Lastly, to potentially mitigate or compensate for the loss of available fishing areas in the Marianas within the MITT, the DOD should be working with Guam and CNMI government agencies to establish funding opportunities that support fisheries development.

Thank you for considering our comments on the draft EIS/OES.

Sincerely,

Kitty Simonds
Executive Director

cc: Honorable Eloy S. Inos, Governor of CNMI
Honorable Gregorio K. C. Sablan, Congressman
Mr. Arnold Palacios, CNMI Secretary of Land and Natural Resources

CENTER for BIOLOGICAL DIVERSITY

December 6, 2013

Naval Facilities Engineering Command, Pacific
Attention: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Online comment form:
http://mitt-eis.com/GetInvolved/HowCanICommentonthisEISOEIS/SubmitAComment.aspx

Re: Mariana Islands Training and Testing Activities ("MITT") Draft Environmental Impact Statement/Overseas Environmental Impact Statement

Dear MITT Project Manager,

Please accept these comments concerning the Mariana Islands Training and Testing Activities ("MITT") Draft Environmental Impact Statement/Overseas Environmental Impact Statement. These comments are submitted on behalf of the Center for Biological Diversity, a nonprofit conservation organization whose mission is to protect and restore endangered species and wild places through science, policy, education, advocacy, and environmental law. The Center has over 625,000 members and online activists, some of whom reside and/or recreate in the Mariana Islands.

The proposed action would result in the continuation and expansion of military training and testing activities that are causing significant adverse impacts to the natural environment of the Mariana Islands, adversely affecting numerous imperiled species and their habitat, and irreversibly impacting the marine environment. The Navy has a mandatory duty under the National Environmental Policy Act (NEPA) to evaluate the direct, indirect, and cumulative impacts of the proposed action and determine whether there will be unavoidable significant impacts. The Navy has failed to meet NEPA's requirements because it improperly limited the scope of the DEIS, failed to properly set forth and analyze the no action alternative and other reasonable alternatives, and failed to adequately assess and disclose the adverse environmental impacts of the proposed activities, and the effectiveness of proposed mitigation measures.

We are also concerned about the impacts of this proposal on marine mammals and threatened and endangered species, and whether this proposal will comply with the Marine Mammal Protection Act (MMPA) and Endangered Species Act (ESA). We request to receive copies of all MMPA and ESA related documents and correspondence with the expert agencies concerning this proposal.

I. The Navy Improperly Limited the Scope of the DEIS

The Council on Environmental Quality ("CEQ") has promulgated regulations to implement NEPA, found at 40 C.F.R. Part 1500. The CEQ NEPA regulations are binding on all federal agencies. 40 C.F.R. § 1507.1. NEPA requires agencies to use the criteria for "scope" that is set forth in the CEQ regulations in order to determine which proposals shall be the subject of a particular EIS. 40 C.F.R. § 1502.4(a). Proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action, must be evaluated together in a single EIS. *Id.*

The CEQ NEPA regulations further define the proper scope of EISs, and mandate that connected, cumulative, and similar actions be assessed together in a single EIS. 40 C.F.R. § 1508.25. Actions are connected if they automatically trigger other actions which may require EISs, they cannot or will not proceed unless other actions are taken previously or simultaneously, or they are interdependent parts of a larger action and depend on the larger action for their justification. 40 C.F.R. § 1508.25(a)(1). Actions are cumulative if they will have cumulatively significant impacts. 40 C.F.R. § 1508.25(a)(2). And actions are similar if they have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography. 40 C.F.R. § 1508.25(a)(3).

The Navy is currently moving forward with two separate proposals, which are being evaluated in two separate EISs that NEPA requires to be analyzed together in a single EIS. The MITT EIS and the Commonwealth of the Northern Mariana Islands (CNMI) Joint Military Training EIS are both assessing military training activities that would occur in the same region at the same time. Both of these proposals are interdependent parts of the Navy's overall military training and testing activities in this region, and are therefore connected actions that must be analyzed together in a single EIS. 40 C.F.R. § 1508.25(a)(1); *see Thomas v. Peterson*, 753 F.2d 754, 759 (9th Cir. 1985).

Moreover, both of these proposals will undoubtedly result in cumulatively significant impacts on numerous resources in the region, again requiring that they be analyzed together in a single EIS. 40 C.F.R. § 1508.25(a)(2); *Thomas v. Peterson*, 753 F.2d at 759 (NEPA requires that "cumulative actions" be "considered together in a single EIS"); *City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1312 (9th Cir. 1990) (where "foreseeable similar projects in a geographic region have a cumulative impact, they should be evaluated in a single EIS"). Additionally, there is no question that both of these proposed actions share common timing and geography, again requiring that they be analyzed together in a single EIS. 40 C.F.R. § 1508.25(a)(3).

The Navy's decision to separate and segment these two closely related proposals into two separate EISs violates NEPA. 40 C.F.R. § 1508.25(a). The Navy must issue a revised DEIS, for additional public and agency comments, in order to properly consider both of the related proposals in a single EIS, including the two proposals' collective impact on the environment.

II. The DEIS' Alternatives Section is Inadequate

An EIS must include alternatives to the proposed action. 42 U.S.C. § 4332(2)(C)(iii); *see also* 42 U.S.C. § 4332(2)(E) (requiring agencies to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources"). The alternatives section is "the heart" of the EIS. 40 C.F.R. § 1502.14. The EIS must "present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public." *Id.*

NEPA requires agencies to "[r]igorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated." 40 C.F.R. § 1502.14(a). The existence of a reasonable but unexamined alternative renders an EIS inadequate. *Center for Biological Diversity v. U.S. Dept. of the Interior*, 623 F.3d 633, 642 (9th Cir. 2010). Moreover, an agency may not define a project so narrowly that it forecloses a reasonable consideration of alternatives.

NEPA also requires agencies to include consideration of a "no action" alternative. 40 C.F.R. 1502.14(d). The no action alternative is required in order to provide a baseline against which the action alternatives are evaluated. *Center for Biological Diversity*, 623 F.3d at 642. A no action alternative must be considered in every EIS. *Id.*

The NEPA alternatives requirements ensure that the decision maker "has before him and takes into proper account all possible approaches to a particular project (including total abandonment of the project) . . . only in that fashion is it likely that the most intelligent, optimally beneficial decision will ultimately be made." *Calvert Cliffs Coordinating Committee v. United States Atomic Energy Commission*, 449 F.2d 1109 (D.C. Cir. 1971).

In the MITT DEIS, the Navy fails to accurately set forth and evaluate the required "no action" alternative. 40 C.F.R. § 1502.14(d). The Navy claims in the DEIS that the no action alternative simply continues the ongoing training and testing activities, as defined in existing environmental planning documents. DEIS at ES-8. However, the Navy acknowledges that a primary purpose of the MITT EIS is to comply with the Marine Mammal Protection Act (MMPA) and Endangered Species Act (ESA), as the Navy's permits and authorizations under these statutes will soon expire. Thus, a true no action alternative would take into account the impending expiration of these permits and authorizations, which would presumably result in scaled back training and testing activities in areas where marine mammals and/or threatened and endangered species are present in order to insure that no illegal takings would occur.

The Navy's assumption that under the no action alternative, the ongoing training and testing activities would continue despite the expiration of permits and authorizations under the MMPA and ESA, is arbitrary and capricious and violates NEPA. See *Center for Biological Diversity*, 623 F.3d at 642-43.

In the MITT Draft EIS, the Navy also fails to rigorously explore and evaluate all reasonable alternatives, and fails to develop and analyze a reasonable range of alternatives. 40 C.F.R. § 1502.14(a). The DEIS, for instance, fails to provide an alternative that would significantly reduce the predicted harm to the marine environment and wildlife in the region, and thus none of the alternatives were selected to "inform decisionmakers and the public" of how it could "avoid or minimize adverse impacts or enhance the quality of the human environment." 40 C.F.R. § 1502.1.

As an example of an action alternative that the DEIS failed to consider, the Navy admits that it "did not identify and carry forward for analysis any separate alternatives with predetermined geographic or temporal restrictions." DEIS at 2-51. The alternatives analysis must include, however, "appropriate mitigation measures." 40 C.F.R. § 1502.14(f). Mitigation measures for the Navy's training and testing activities, especially for marine mammals and threatened and endangered species, should include – or at least consider - geographic restrictions from sensitive areas. By failing to include any consideration of alternatives that impose such restrictions, as a component of the alternative's mitigation measures, the Navy is failing to rigorously explore and evaluate all reasonable alternatives, including appropriate mitigation measures.

In order to engage in an effective, meaningful NEPA process, the Navy must disclose and provide the opportunity for comment on all reasonable alternatives to the proposed project, including mitigation measures. By failing to consider and analyze a range of potential mitigation measures as part of the reasonable range of alternatives to the proposed project, the Navy is failing to disclose to the public and provide the opportunity for comment upon these measures, and failing to present to the decisionmaker the information necessary to make an informed decision.

We request that the Navy prepare a supplemental DEIS that includes a true and accurate no action alternative, and that includes additional action alternatives that would significantly reduce the environmental harm of the proposed activities.

III. The DEIS Failed to Provide Sufficient Information Concerning the Affected Environment and Environmental Consequences

Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA. 40 C.F.R. § 1500.1(b). A primary purpose of NEPA is to "guarantee that the relevant information will be made available to the larger audience that may also play a role in both the decision-making process and implementation of that decision." *Robertson v. Methow Valley Citizens*, 490 U.S. 332, 349 (1989). "[T]he broad dissemination of information mandated by NEPA permits the public and other government agencies to react to the effects of a proposed action at a meaningful time." *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 371 (1989).

A DEIS must fulfill and satisfy to the fullest extent possible all of the requirements established for a final EIS. 40 C.F.R. § 1502.9(a). If a DEIS is so inadequate as to preclude meaningful analysis, the agency must prepare and circulate a revised draft of

the appropriate portion. *Id.* The agency must make every effort to disclose and discuss in the DEIS all major points of view on the environmental impacts of the alternatives, including the proposed action. *Id.*

In addition to describing the environment of the area that would be affected by the proposed action, 40 C.F.R. § 1502.15, an EIS must analyze and disclose the environmental consequences of the proposed action should it be implemented. 40 C.F.R. § 1502.16. The "environmental consequences" section of the EIS "forms the scientific and analytic basis" for the comparison of alternatives. 40 C.F.R. § 1502.16. This discussion must include "the environmental impacts of the alternatives including the proposed action, any adverse environmental effects which cannot be avoided should the proposal be implemented, the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity, and any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented." *Id.* This section must include discussions of both direct and indirect effects and their significance, along with the environmental effects of the alternatives. *Id.*

"Direct effects" are defined as those that "are caused by the action and occur at the same time and place." 40 C.F.R. § 1508.8(a). In this case, the "direct effects" that must be analyzed and disclosed in the EIS include the taking of marine mammals, the taking of threatened and endangered species, the destruction and adverse modification of the designated critical habitat for threatened and endangered species, the disruption of marine systems and the resulting impacts to water quality and corals, and the direct impacts to the affected communities.

"Indirect effects" are defined as those that "are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. § 1508.8(b). For the MITT EIS, "indirect effects" include the long term aversion of marine species from the destructed environment in and around the MITT, the unknown long-term impacts of toxic chemical build-up in the ocean, and the precedent that the continuation of these military training and testing activities sets for future attitudes and activities concerning this valuable marine area and the Mariana Islands.

A. The DEIS Fails to Adequately Address Impacts to Marine Mammals

Accurate scientific analysis is essential to implementing NEPA, 40 C.F.R. § 1500.1(b), and agencies must insure the scientific integrity of the analysis in EISs. 40 C.F.R. § 1502.24. The MITT DEIS needs to be updated to take into account new information concerning impacts to marine mammals, including the EIS for the U.S. Navy Training and Testing Activities in the Hawaii-Southern California Training and Testing (HSTT) Study Area; the 2013 scientific report, "Blue whales respond to simulated mid-frequency military sonar;"[i] and the 2013 scientific report, "First direct measurements of behavioral responses by Cuvier's beaked whales to mid-frequency active sonar."[ii]

The DEIS under-estimates and understates the likely extent of harm and impacts to marine mammals that would result if the proposed action is implemented. The Navy's

conclusion that no long term impacts to individuals or populations of marine mammals are expected as a result of sonar and other testing is not supported by the information presented in the DEIS as well as other scientific research. Models presented in the DEIS predict that each year over 50 marine mammals would be exposed to acoustic stress from sonar training and testing that would cause permanent hearing damage under Alternative 1. DEIS at 3.4-114 – 3.4-116. Moreover, sonar testing and training plus other sources of anthropogenic noise is predicted to cause thousands of cases of Level B and Level A harassment under the MMPA. *Id.*

Additionally, the DEIS understates the severity of behavioral responses on long term health. Dramatic behavioral responses to stressors from naval testing are well documented in the scientific literature.[iii] These responses can limit important activities such as foraging, communication, and predator detection.[iv] Behavioral responses may be temporary, but the long term consequences are not well understood. *See* 40 C.F.R. § 1502.22 (setting forth the NEPA requirements for when information concerning the potential environmental impacts of a proposed action is incomplete or unavailable).

The indirect effects of the Navy's activities on marine mammals are also not adequately considered in the DEIS. Stress is a key component of marine mammal health. A study of North Atlantic right whales indicated that chronic stress in whales may be associated with exposures to even low-frequency ship noise.[v] Stress from ocean noise combined with other factors may weaken a cetacean's immune system, making it more vulnerable to parasite and diseases that normally would not be fatal. It is also reasonable to consider the possibility that marine species may exhibit the same physiological effects as terrestrial species that have been exposed to moderate levels of noise. In those studies, chronic noise has interfered with brain development, increased the risk of myocardial infarctions, depressed reproductive rates, and caused malformations in young.[vi] Other indirect effects may arise from mother-calf separation leading to a decrease in survivability.

B. The DEIS Fails to Adequately Address Impacts to Water Quality, the Marine Environment, and Wildlife

The DEIS is unclear as to how toxic metals and pollution resulting from the continuation and expansion of military training and testing activities in the region will affect water quality, the marine environment, and wildlife. The Navy states that percentage increases for known toxic metals under Alternatives 1 and 2 cannot be evaluated because these proposed testing and training activities are not currently conducted under the No Action Alternative. The Navy also states that impacts on sediments and water quality would be long term, local and negative, but that federal and state guidelines would not be violated. The DEIS fails to provide the public and decisionmaker with enough information and analysis to gain a clear understanding as to how the marine environment and wildlife may be adversely affected by the introduction of more toxic chemicals and metals as result of the proposed project.

C. The DEIS Fails to Adequately Consider and Disclose Cumulative Impacts

In accord with NEPA, the Forest Service must "consider" cumulative impacts. 40 C.F.R. § 1508.25(c); *Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1379 (9th Cir. 1998). "Cumulative impact" is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." 40 C.F.R. § 1508.7. "Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." *Id.*

"To 'consider' cumulative effects, some quantified or detailed information is required." *Neighbors of Cuddy Mountain*, 137 F.3d at 1379. "Without such information, neither the courts nor the public, in reviewing the [agency's] decisions, can be assured that the [agency] provided the hard look that it is required to provide." *Id.* "General statements about 'possible' effects and 'some risk' do not constitute a 'hard look' absent a justification regarding why more definitive information could not be provided." *Id.* at 1380. "Nor is it appropriate to defer consideration of cumulative impacts to a future date," *id.*, as NEPA requires consideration of the potential impact of an action *before* the action takes place. 40 C.F.R. § 1500.1(b).

There is no question that the proposed military training and testing activities will contribute to cumulative impacts on numerous resources within the region when considered together with other past, present, and reasonably foreseeable activities, including the proposed CNMI Joint Military Training activities. The DEIS, however, provides only a general, non-quantified discussion of cumulative impacts, of the same type that the Ninth Circuit has found insufficient under NEPA. *See e.g., Neighbors of Cuddy Mountain*, 137 F.3d at 1379-80. The general statements provided in the DEIS fail to constitute the required hard look, and the Navy fails to provide an adequate justification as to why more definitive information could not be provided. *Id.*

IV. The DEIS Fails to Insure that the Project Will Comply with the ESA

The ESA is "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation." *Tennessee Valley Authority v. Hill*, 437 U.S. 153, 180 (1978). "The plain intent of Congress in enacting this statue was to halt and reverse the trend towards species extinction, whatever the cost." *Id.* at 194. In enacting the ESA, Congress spoke "in the plainest words, making it abundantly clear that the balance has been struck in affording endangered species the highest of priorities, thereby adopting a policy which it described as 'institutionalized caution.'" *Id.* at 194.

"One would be hard pressed to find a statutory provision whose terms were any plainer than those in [Section] 7 of the Endangered Species Act." *Id.* at 173. "Its very words affirmatively command all federal agencies 'to *insure* that actions *authorized, funded*, or *carried out* by them do not *jeopardize* the continued existence' of an endangered species

or *result* in the destruction or modification of habitat of such species . . . This language admits of no exception." *Id.*

Pursuant to Section 7 of the ESA, each federal agency must consult with the United States Fish and Wildlife Service (FWS) and/or National Marine Fisheries Service (NMFS) to insure that its proposed activities are not likely to jeopardize the continued existence of any threatened or endangered species, or result in the destruction or adverse modification of critical habitat. 16 U.S.C. § 1536(a)(2).

Section 9 of the ESA prohibits any person from "taking" a threatened or endangered species. 16 U.S.C. § 1538(a)(1)(B); 50 C.F.R. § 17.31(a). The term "take" is defined broadly to include "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." 16 U.S.C. § 1532(19).

There are numerous threatened and endangered species within the study area that may be adversely affected by the proposed action, including the green sea turtle, hawksbill turtle, a number of endangered bird species, the mariana fruit bat, humpback whale, blue whale, fin whale, sei whale, and sperm whale. DEIS at C-33; 3.4-4 to 3.4-5. In addition, there are a number of candidate species under the ESA, including the Mariana eight-spot butterfly, Mariana wandering butterfly, four species of snails, and the Pacific sheath-tailed bat. DEIS at 3.10-7.

The Navy must formally consult with FWS and NMFS concerning the potential impacts of its proposed continuation and expansion of training and testing activities on all threatened, endangered, and candidate species in the region. The Navy must also not issue its decision concerning the proposed action until after the completion of the Section 7 consultation, and must incorporate into the proposed action all of the reasonable and prudent measures, and terms and conditions, that are set forth in the applicable biological opinions.

A. The Project Will Adversely Affect Coral Species

Currently, 40 species of coral that exist in the study area are proposed for listing as threatened or endangered under the ESA. In the DEIS and in its Section 7 consultation with NMFS, the Navy must address how their proposal would impact these coral species, not only in terms of their listing under the ESA, but also under the assumption that these corals have critical habitat that will be designated within the study area.

Corals are under severe threat all over the world. They are slow to adapt to habitat changes and have a limited ability to reproduce over large distances. 73 Fed. Reg. at 6897. Oceans are already experiencing a drop in pH, and this decreases the calcification of corals. Calcification rates of reef-building corals are expected to decrease 30-40% with a doubling of atmospheric carbon dioxide.[vii] Scientists predict that ocean acidification coupled with increasing ocean temperatures will destroy the world's reefs by mid-century.[viii] The proposed action would increase the number of vessels and activities in and near areas where threatened corals occur. The DEIS must consider and

disclose the combination of the grave threats to corals associated with global climate change and the adverse impacts of the Navy's proposed activities on corals in the region.

V. The DEIS Fails to Insure that the Project Will Comply with the MMPA

Numerous species of whales and dolphins are known or likely to be present in the study area, including five species of whales that are designated as endangered under the ESA and depleted under the MMPA: humpback whale, blue whale, fin whale, sei whale, and sperm whale. DEIS at 3.4-4 to 3.4-5. The Navy acknowledges in the DEIS, however, that despite its decades of conducting activities in the MITT region, there is a "paucity of systematic survey data" and "little is known about the stock structure of the majority of marine mammal species in the region." DEIS at 3.4-2.

The Marine Mammal Protection Act (MMPA), generally prohibits any individual from "taking" a marine mammal, which is broadly defined as harassing, hunting, capturing, or killing it. 16 U.S.C. §§ 1362(13), 1372(a). According to the DEIS, the Navy is seeking a 5-year Letter of Authorization from the NMFS pursuant to the MMPA for certain specified training and testing activities, acknowledging that the use of sonar and other active acoustic sources and explosives may result in Level A harassment and Level B harassment of certain marine mammals, and that the use of vessels may result in Level A harassment, including mortality, of certain marine mammal species. DEIS at 3.4-213. The DEIS fails to address, however, how the Navy would modify its proposed activities to insure no takings of any marine mammals should its request be denied.

According to the DEIS, the proposed training and testing activities that involve weapons firing, launch, and impact noise; vessel noise, aircraft noise; energy emissions; and impulses from swimmer defense airguns, are not expected to result in the harassment of marine mammals. DEIS at 3.4-213. Similarly, the proposed training and testing activities using inwater devices, seafloor devices, fiber optic cables and guidance wires, decelerators/parachutes, nonexplosive practice munitions, and other military expended materials are not expected to result in harassment of marine mammals. *Id.* And, secondary stressors, including the impacts to habitat or prey from explosives and byproducts, metals, chemicals, and transmission of disease and parasites, are also not expected to result in harassment of marine mammals. *Id.* The DEIS lacks sufficient support for these determinations, especially at the level and extent of the activities proposed under Alternative 1, and especially in terms of the synergistic impact of all these activities on marine mammals.

Overall, the Navy greatly underestimates the impacts that their proposed testing and training activities will have on marine mammals in the study area. As acknowledged, the mitigation measures proposed by the Navy will not be sufficient to eliminate "take" of cetaceans. And for some activities, it appears that the Navy proposes to reduce the mitigation that is currently in place in the MITT area while at the same time proposing to increase these potentially harmful training and testing activities under Alternative 1.

VI. Conclusion

The DEIS fails to consider the proper scope of the Navy's proposal, fails to consider and disclose a true no action alternative and assess a full range of reasonable alternatives, and fails to adequately analyze and disclose the environmental consequences of the proposal. The DEIS also fails to demonstrate and insure compliance of the proposed activities with the ESA and MMPA. The Center requests that a supplemental DEIS be prepared, with an additional opportunity for public comment.

Thank you for taking our comments into consideration, and please add me to the mailing list for this proposed action.

Marc Fink
Center for Biological Diversity
209 East 7th St.
Duluth, MN 55805
218-464-0539
mfink@biologicaldiversity.org

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[i] Goldbogen, J.A., Southall, B.L., DeRuiter, S.L., Calambokidis, J., Friedlaender, A.S., Hazen, E.L., Falcone, E.A., Schorr, G.S., Douglas, A., Moretti, D.J., Kyburg, C., McKenna, M.F., Tyack, P.L. Tyack, P. L. 2013. Blue whales respond to simulated mid-frequency military sonar. *Proc. Roy. Soc. B.* 280(1765), 20130657. doi:10.1098/rspb.2013.0657 (Goldbogen 2013).

[ii] DeRuiter, S.L., Southall, B.L., Calambokidis, J., Zimmer, W.M.X., Sadykova, D., Falcone, E.A., Friedlaender, A.S., Joseph, J.E.,Moretti, D., Schorr, G.S.,Thomas, L., Tyack, P. L. 2013. First direct measurements of behavioural responses by Cuvier's beaked whales to mid-frequency active sonar. *Biology Letters* 9(4), 20130223. doi:10.1098/rsbl.2013.0223 (DeRuiter 2013).

[iii] DeRuiter 2013; Goldbogen 2013; Tyack PL, Zimmer WMX, Moretti D, Southall BL, Claridge DE, et al., 2011. Beaked Whales Respond to Simulated and Actual Navy Sonar. PLoS ONE 6(3): e17009. doi:10.1371/journal.pone.0017009 (Tyack 2011).

[iv] DeRuiter 2013; Goldbogen 2013; Tyack 2011.

[v] R. M. Rolland, S. E. Parks, K. E. Hunt, M. Castellote, P. J. Corkeron, D. P. Nowacek, S. K. Wasser, and S. D. Krauss. 2012. "Evidence That Ship Noise Increases Stress in Right Whales." *Proceedings of the Royal Society of Biology*. 10. 1098/rspb.2011.2429.

[vi] *See, e.g.*, E.F. Chang and M.M. Merzenich, Environmental Noise Retards Auditory Cortical Development, 300 Science 498 (2003) (rats); S.N. Willich, K. Wegscheider, M. Stallmann, and T. Keil, Noise Burden and the Risk of Myocardial Infarction, European Heart Journal (2005) (Nov. 24, 2005) (humans); F.H. Harrington and A.M. Veitch, Calving Success of Woodland Caribou Exposed to Low-Level Jet Fighter Overflights, 45 Arctic vol. 213 (1992) (caribou).

[vii] Kleypas, J.A., et al. 2006. Impacts of Ocean Acidification on Coral Reefs and Other Marine Calcifiers; Hoegh-Guldberg, et al. 2007. Coral Reefs Under Rapid Climate Change and Ocean Acidification, Science 318:1737-1742; Guinotte, J.M., Fabry, V.J. 2008. Ocean acidification and its potential effects on marine ecosystems. Ann. N.Y. Acad. Sci. 1134: 320–342.

[viii] Hoegh-Guldberg, et al. 2007. Coral Reefs Under Rapid Climate Change and Ocean Acidification, Science 318:1737-1742.

Prepared by: The Guam Fishermen's Cooperative Association
December 11, 2013

The following is in response to the Mariana Islands Training and Testing (MITT) Draft Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS) and its potential impact to the Guam's Marine Community. We use the word community as all-encompassing as the past and proposed Actions/Designations impacts not just affect fishermen but everyone including tour operators, economic expansion opportunities for the aforementioned and the consumers of the fresh seafood and services provided by such. While we recognize the needs of the military, most especially the necessity of training the basic tenants of the National Environmental Protection Act and other Federal Edicts must not be ignored. Recognize while some of these ranges may have been pre-existing; such may not be the case or applicable today. We certainly feel the continued existence or expansion is certainly not in the best interest of the community. These pre-existing and proposed ranges need greater thought especially as times change and opportunities are recognized by our small fragile Island community and economy. We ask that that your organization continues to work with the community as partners and as adversaries. To this end; we offer our concerns and recommendations which are as follows:

Preamble: Facts about Guam's Marine community:

Fishing community:

Primarily a small boat community with an average vessel size of 22 feet. Fishing duration is usually a day trip (sunrise to sunset) with an extremely small percentage overnight trips (on a given day as many as 40-50 vessels are operating in coastal waters). It is primarily a Subsistence Fishery where the catch is shared or sold to cover fishing cost; not considered a commercial or recreational fishery…"an expense fishery" is far more acceptable but poorly understood even in Western Terms.

This fishery depends highly on seasonal appearances of pelagic, coral reef and bottom fish species. Majority (70%) of the fishing trips are coastal, primarily within 5 miles but no further than 10-15 miles from the nearest coastline except for trips to nearby seamounts. During summer months where the waters are calmest these small boats may venture to these nearby seamounts to do some shallow bottom or fish for resident pelagic fish. Guam's community depends highly on these small fishing vessels for fresh local fish. Recognize that unlike Hawaii there are no Industrialized Fishing Vessels on Guam. Fishing on Guam is a four thousand year old tradition…a way of life for the fishermen and most especially in meeting the fresh fish needs of the community.

Recognize that the multitude of existing activities and designations already hampers the uses of Guam's Marine Resources. These existing areas are: The two large Marine Protected Areas hosted by the Government of Guam on the Western seaboard, the Military Firing Range Danger Zone near Orote, in addition the Safety and Security Zone Designation of Apra Harbor. There are Marine Conservation Areas to the Northwest sector (USFWS) with a soon to be designated Ritidian Firing Range for the Marine Corps Contingent. At the end, nearly 30 to 40 percent of

the Fishable Areas are either have or will have fishing access restrictions. Again, the western seaboard is where more than 80% of the marine community activities occur.

Lastly, realize that the Military for the most part does not allow fishing activities to occur in or around its shoreline. This poses a dilemma as an active contingent of military personnel are engaged in fishing as well as other marine activities (hence the 20 million dollar improvements to Sumay Cove Marina, certainly not for military vessels) placing additional pressure on an ever shrinking area. In addition, the US negotiated Compact Agreement with the Freely Associated Island States primarily for military access to their respective Zones has provided for these citizens to freely travel to the US. As a result, these FAS Citizens are now impacting Guam's marine resources on a near daily basis. At the end, the cumulative burden to support the needs of the military should not be placed on the shoulders of this small Island Fishing Community.

Others in the Marine community:
Marine Tour Operators service nearly three thousand tourists a day. These vessels like fishing ones operate with limited range and time with customer satisfaction its goal in order to ensure continued patronage. Majority of these vessel offer coastal dolphin viewing, diving, fishing and so forth. These vessels (at least 30 vessels on a given day) operate out of Hagatna Marina, Apra Harbor and Agat Marina on a daily basis. Conducting Military exercises in or adjacent waters limits the range or the activities of these vessels. Lastly, these vessels are too limited in range and duration and any impediments to their operation is a significant drawback to an already fragile operation.

One needs to understand the meaning of a "fragile operation" in order to fully understand marine operations both in fishing and other marine entities. Fragile, since all are subject weather (Guam averages 10 small craft warnings a month…tours do not like seasick passengers). Second, is visitor arrival as in the case of fishing…fish seasonality and duration which could be good or for the most part bad. High fuel cost especially higher than military fuel consumers giving military owned fishing vessels a higher economic advantage.

Vessel Operations:
The local boating community operates from boats with limited range and duration while the military has ships with a far greater range and duration not to mention funding. Therefore special it is far more conceivable that these military vessels should have operational ranges beyond the scope of the local small vessels.

1. Firing Ranges in General:

Land and Sea Firing Ranges should be conducted in areas where there is less intrusion on community activities.

a. Land Based Firing Ranges should be limited to small arms live-fire. Weapons such hand guns, shot guns and low-load munitions for rifles. The effective range of these types of fire arms would decrease the need for the extended Ocean Surface Danger or Danger Zone. Recognize that the Island of Tinian has already been designated as a Firing Range for all personnel weapons training. All military personnel in need of the higher caliber weapons training could either jump on a Military Aircraft (travel time 30 min.) or one of the new Hydro-Foil Deployment Watercraft (travel time 1hr. 30min.) just after a hearty breakfast. Landing in Tinian before the food is digested then conduct weapons training and be back on Guam for a

nice hot supper. Recognizing that it is a Joint Marianas Region under one supposedly Command (Navy).

b. Ocean Ranges (Mines and Live-fire) either should be limited to existing designated Ocean Training Areas (i.e. W517) or Ocean areas beyond fifty (50) miles of the Island of Guam or seamounts (reefs). The fifty mile zone is a commonly used buffer for both fishery management and conservation strategies in order to lessen Impacts to both pelagic and reef like species. Impacts by such proposed military activities largely remain unknown (especially during seasonal appearances) and not likely to be analyzed. However, it has been noted by fishermen that where there is active military training occurring fishing seems to be poor even in fishing "Hot Spots".

2. The Orote Pt. Danger Zone:

Historical usage: The Orote Point Area:

This area has been used for trolling pelagic fish as it is a natural aggregation area and a natural protected area where boaters can safely operate especially during rough sea conditions (4-5 months a year). It is an area almost equal-distant to the two busiest and only civilian marinas on the western seaboard (Hagatna and Agat). There are good bottom fishing areas (seamount) within the Danger Zone and since stopping is not allowed thus rendering these areas as inaccessible to fishermen.

In order for one to truly analyze the impacts by the Action, one must first understand the seasonality of fish; bottom fish, reef fish and pelagic fish and their range. By and large nearly all aggregate around Points where the Island extrudes out. These areas are ***Cocos Pt. Facpi Pt., Orote Pt., Hospital Pt., Two Lovers Pt., Haputo Pt., Ritidian Pt. and Pati Pt.*** These extrusions serve as the fishing "Hot Spots" for fishermen and with Cocos, Orote Tip and Ritidian primarily closed about 4 months in a given year; the inner areas such as the Orote Pt. Danger Zone lessens the already limited fishing grounds.

The following factors must also be considered in any designation: The area encompassed by the Orote Danger Zone is also an area of safe refuge similar to Double Reef as water conditions too often change in a moment. In addition, Fishermen transiting the DZ will be running surface lures but will have to stop or slow down to land the fish which is contrary to current edicts.

Recommendations:

A.The range should be over-looking the entrance to Apra Harbor and designated as a Small Arms Range (pistols only) or designated Orote Pt. Range could be shifted 90 degrees to the North and the "Danger Zone" limited to land areas. This shift would not impact the land area as it is already part of the "Ammo Wharf Danger Zone".

b. The range could be easily converted to an indoor range; recognizing that the range is on a Naval Base and Naval Personnel have a much lesser weapons familiarization requirement than the Marine Corps or Army Service Branches; also recognizing that the Marines are planning their own range at Ritidian and the Air Force operates a Firing Range with minimal impact to the marine community. These segregated Service Branch Ranges makes one wonder if there is truly

a single military command or that effective use of limited US financial resources is being realized. We feel that with proper planning and funding the placement of an indoor firing range would more than meet the US Navy Training requirements. It is our understanding that 20 million dollar Marina and an 18 million dollar dog kennel received full funding; another 20 million dollars for an indoor range would be far more appropriate use of DOD Funds.

I. In-door Firing Range: such a facility could have the following features: Weather controlled environment (wind, rain and other conditions), controlled lighting (day and night simulations) and lastly an environmentally friendly range where projectiles, casings and gases do not impact the land, air and sea; most especially the boating community.

c. In the event the aforementioned recommendations are unsuitable we offer the following enhancement programs:

I. Marker Buoys set up ½ to one mile from the outer boundaries as designated as the Danger Zone for the Orote Range. Kindly recognize that many coastal boaters do not have a GPS. The placement of these Marker Buoys may compensate for the loss of pelagic fishing opportunities but more so alleviates encursions.
II. Signage at both Marinas for notification that Range is Hot.
III. Suggest working with NOAA Weather to include the Range "in-use" notices.
IV. Suggest the Orote Danger Zone be changed to a Surface Danger Zone.

3. Proposed Ocean Small Arms Firing Range:

Historical Usage:

The area encompassed by the Proposed Range included traditional fishing grounds. Schooling fish have been frequently found in this area. The Department of Agriculture Fish Aggregating Devices (FADs) is in close proximity to the proposed range. The Proposed Range is also located just outside the largest Marina on the western seaboard and would limit resource access by the boaters as normal range is 12-15 miles from the Marina. This area is also host to a variety of "protected" marine mammals; whales and dolphins that visit the area frequently (most important for the array of Tourism vessels).

Recommendation:

Relocate the Proposed Ocean Firing Range within or to closer the Ocean Dredge Material Disposal Site as designated by the US EPA. This area is already designated and therefore additional exclusion areas unnecessary. Naval Vessels will need to take a direct heading out of Apra Harbor and designated Shipping Lanes without interacting with local vessels (note that there a safety buffer area requirement around all Naval Vessels).

Note: In the event the aforementioned recommendation is unsuitable or acceptable relocation we offer the following enhancement programs:

I. Marker Buoys set up 1/2 mile from the outer boundaries as designated as the Danger Zone for the Ocean Firing Range. Kindly recognize that many coastal boaters do not have a GPS and if they do the markings would clutter the screen.
II. Signage at both Marinas for notification that Range is Hot.
III. Suggest working with NOAA Weather to include the Range info.

4. Agat Bay Mine Neutralization Site and Piti Floating Mine Neutralization Site:

Historic Usage:

These areas are frequently used by all boaters from fishermen to Tourism engaged vessels. The latter is also located in close proximity to a Local Fishing Preserve where is has been scientifically documented that the coral fish larvae disperse into the Piti Zone. Tourism dive boats also frequent the area either for transit or an expedition where the latter occurs several times daily.

Recommendation:

Relocate the Proposed Mine Neutralization Sites is relocated within or to closer the Ocean Dredge Material Disposal Site as designated by the US EPA. Again, this area is already designated and therefore additional exclusion areas unnecessary. Naval Vessels will need to take a direct heading out of Apra Harbor and designated Shipping Lanes without interacting with local vessels (note that there a safety buffer area requirement around all Naval Vessels (500 yds.). Recently, the number of Military vessels operating within the 15 miles of Guam is ever increasing. This increased presence also adds to the reduction of fishing grounds not to mention the aerial exercises which causes seabirds to dissipate. Note that seabird aggregation is a tell-tale sign that pelagic schools of fish are in the area…aiding fishermen in the hunt.

Note: In the event the aforementioned recommendation is unsuitable or acceptable relocation we offer the following enhancement programs:

I. Marker Buoys set up ½ to one mile at 1 mile intervals from the outer boundaries as designated as the Danger Zone for the Mine Neutralization Sites. Kindly recognize that many coastal boaters do not have a GPS and if they do the latitude/longitude markings would clutter the screen.

II. Signage at both Marinas for notification that Range is Hot.

III. Suggest working with NOAA Weather to include the Range info.

In closing, while in full support of the US Military Training needs we feel there is a need to establish a cooperative balance between the needs of the military and the community. We have presented to you our limitations and graciously forgo the areas beyond such limits. We feel the recommendations aforementioned to be reasonable and should be considered in the Site selection and Environmental Impact Assessment.

Respectfully submitted on behalf of the Guam Fishermen's Cooperative Association,

Manuel P. Duenas II
President

Guardians of GANI
PO BOX 500370
SAIPAN, MP 96950
guradiansofgani@gmail.com

December 12, 2013

Naval Facilities Engineering Command Pacific
Attention: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Mariana Islands Range Complex EA/OEA
Project Manager, Code EV21
Naval Facilities Engineering Command, Pacific
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96869-3134
Phone: 808-472-1402

Dear Sir or Madam:

I write on behalf of our local grassroots organization named GUATDIA'N GANI - LEGHLIGHIIL GANI (GUARDIANS OF GANI).

First of all, we would like to thank you for the opportunity to submit our comments. The local people and residents of the Northern Mariana Islands (NMI) have made it abundantly clear that we have been ignored for so long when it comes to soliciting comments from our local community. We have long felt that the outreach efforts of the military have been largely lacking and meaningless.

Secondly, we would like to extend our untiring support for our troops serving the armed forces of the United States of America, most especially, to our Chamorro and Carolinian brothers and sisters who are sons and daughters of our spectacular Northern Mariana Islands. We also give our love and support to their spouses and children for making their own sacrifices at home while they await for their loved ones to return from tour duty and/or training abroad.

In response to the proposed expansion of the danger zone on Farallon de Medinilla (FDM), GUARDIANS OF GANI is unequivocally opposed to such. We respond as so mainly because the Commonwealth of the Northern Mariana Islands (CNMI), in our view, has made significant and long standing impacts since the signing of the Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America. Since 1976, the year the covenant was enacted, the people of the CNMI have sacrificed not only our lands and resources, but also our Carolinian and Chamorro brothers and sisters who have paid the ultimate price in serving our country and the nation's security.

Three alternatives were analyzed in your draft EIS/OEIS:

• The No Action Alternative represents those training and testing activities as set forth in previously completed environmental planning documentation.

• Alternative 1 consists of the No Action Alternative, plus the expansion of Study Area boundaries and adjustments to location, type, and tempo of training and testing activities, which includes the addition of platforms and systems.

• Alternative 2 consists of all activities that would occur under Alternative 1 plus adjustments to the type and tempo of training and testing activities.

We submit that you adopt the NO ACTION ALTERNATIVE.

On June 15, 2013, the U.S. Navy issued its Environmental Assessment/Overseas Environmental Assessment (EA/OEA) Finding of No significant Impact/Finding of No Significant Harm (FONSI/FONSH) with regard to its proposed Mariana Islands Range Complex Airspace Modification. Although this document stipulates "adherence to the July 2010 Record of Decision (ROD) with respect to considered and approved military training activities," and that this EA/OEA is in "compliance with the National Environmental Protection Act (NEPA)" we find that compliance with Section 106 requirements under NEPA is lacking on several key points:

- The EA/OEA involved only two other consulting parties, the U.S. Air Force and the Federal Aviation Administration (FAA). There is no mention in this document as to consultation with or by the Commonwealth of the Northern Mariana Island (CNMI), nor more importantly, with or by its public. Holding public meetings over the course of one or two evenings for a two to three hour period does not constitute consultation.

- The National Environmental Policy Act (NEPA) and the regulation of the Council on Environmental Quality (CEQ) requires that agencies consider the effects of their actions on the HUMAN ENVIRONMENT in all its aspects, including its cultural qualities. With respect to its proposed undertaking and prior "approved" activities on FDM, the U.S. Navy has chosen to disregard this requirement by "not pursuing further analysis of Geology, Soils, Water Quality, Air Quality, Fish, Marine Mammals, Sea Turtles, Seabirds, Terrestrial Species and Habitats, Socioeconomics, Cultural Resources, and Environmental Justice."

- Pursuant to Section 800.4 through 800.5 of Section 106 Review under the National Historic Preservation Act (NHPA), "the agency has to identify historic properties and assess the effects" that the undertaking has on said properties in a manner commensurate with the assessment of environmental factors.

- Moreover, Executive Order 12898 requires that agencies pay special attention to disproportionate and adverse environmental impacts on low income and minority populations; such impacts may be cultural in nature. The native Chamorro and Carolinian

communities of the Northern Mariana Islands appear on numerous federal reports as "low income, underserved, minority groups" and in its FONSI/FONSH, it is clear that the U.S. Navy did not address any such disproportionate and adverse environmental impacts on the Chamorro and Carolinian communities of the Northern Mariana Islands who have called the Marianas Archipelago their island home for millennia and for whom the islands and the ocean that connects them are one and the same and not distinct nor disparate entities.

From a compliance standpoint, we find that the EA/OEA FONSI/FONSH is not only inaccurate, but negligent in its exclusivity with regard to the adverse impact that past military activity has had on FDM and its immediate and surrounding environs, and under which the current proposed MIRC Airspace Modification anticipates to do the same.

The many effects of the continued bombing on FDM, for example, cause erosion. Bombing decimates vegetation, thereby exposing the soil, which in turn end up in near shore waters as a result of runoff. Additionally, any chemicals in the bombs themselves end up in the nearshore waters, either directly or indirectly by leaching into the ground.

"The nearshore is defined as an indefinite zone extending seaward from the shoreline well beyond the breaker zone. It defines the area where the current system is caused primarily by wave action." Nearshore waters "provide a unique habitat for a variety of plants and animals. Sea grasses and other aquatic plants living in the nearshore waters provide food and shelter for many species of fish and shellfish. Many marine organisms, including most commercially valuable fish species, depend on nearshore waters at some point during their development." [1]

"*Sediment* and other suspended solids can wash off when it rains. As these sediments enter coastal waters, fish respiration is impaired, plant productivity and water depth are reduced, aquatic organisms and their habitats are smothered, and the aesthetic enjoyment of the water is diminished." "*Toxic substances*, such as metals (e.g., mercury and lead) and toxic organic chemicals (e.g., PCBs and dioxin), which may originate from" bombing the island, "can severely disrupt the nearshore waters habitat. These toxic substances can cause death or reproductive failure in the fish, shellfish, and wildlife that use the habitat. In addition, they can accumulate in animal and fish tissue (leading to fish consumption advisories), become attached to sediments, posing long-term health risks to humans." [1]

"*Habitat modification* results from activities like development, channelization, dam construction, impacts from storms, and dredging," and bombing the island. Typical examples of the effects of habitat modification include loss of vegetation, siltation, smothering of bottom-dwelling organisms, and increased water temperatures. The modification of surrounding lands causes water quality problems that can decrease the number of species capable of living and reproducing in the nearshore waters." [1]

Current bombing and the proposed increased bombing activities at FDM WILL HAVE A SIGNIFICANT IMPACT on near shore water habitat.

At the scoping meeting held on Saipan at the Multipurpose Building on November 13, 2013, we asked if there were any baseline testing of near shore waters at FDM, and we were told "no". And that water sampling of near shore waters had not been conducted in the past. It would appear that monitoring of near shore waters has never been done. Therefore, the statement of No Significant Impact is not accurate. Until data is provided, one cannot and must not assume that there will be No Significant Impact.

Section 802 of the Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America states in part and relative to the lease on FDM:

> (a) The following property will be made available to the Government of the United States by lease to enable it to carry out its defense responsibilities:
> (b) (3) on Farallon de Medinilla Island, approximately 206 acres (83 hectares) encompassing the entire island, and the waters immediately adjacent thereto.
>
> Section 803.
>
> (a) The Government of the Northern Mariana Islands will lease the property described in Subsection 802(a) to the Government of the United States for a term of fifty years, and the Government of the United States will have the option of renewing this lease for all or part of such property for an additional term of fifty years if it so desires at the end of the first term.
> (b) The Government of the United States will pay to the Government of the Northern Mariana Islands in full settlement of this lease, including the second fifty year term of the lease if extended under the renewal option, the total sum of $19,520,600, determined as follows:
>
> (1) for that property on Tinian Island, $17.5 million;
> (2) for that property at Tanapag Harbor on Saipan Island, $2 million; and
> **(3) for that property known as Farallon de Medinilla, $20,600. The sum stated in this Subsection will be adjusted by a percentage which will be the same as the percentage change in the United States Department of Commerce composite price index from the date of signing the Covenant.**

To the best of our understanding, your report states that there is no significant impact on the island of FDM with your proposed expansion of the danger zone; in other words, increased bombs, mortars, missiles and toxins dropped on FDM are without further annihilation of the island or the people of the Northern Mariana Islands. By our sense of logic, we find this very difficult to assimilate or even understand. We request, therefore, that the U.S. military, specifically the Navy, conduct a new environmental and socio-economic evaluation so that a proper appraisal of FDM could be made available. This reassessment has been long overdue. We also feel that to indicate that our beautiful FDM was "uninhabited" or is "uninhabitable" and that a mere $20,600.00 to lease it for "purposes" not detrimental to its environs (and to those of her sister islands to its north and south), is not only grossly inaccurate, but expressly and unconscionably negligent.

FDM has the largest reef mass in all of Micronesia. FDM is a very special place for NMI fishermen because of its proximity to Saipan, additionally; the depth of its reef mass is rich in mafuti (emperor)

and atulai (big eye scad), for example. Mafuti and atulai are readily recognized and very much loved by the people of the Marianas most especially during the season of Lent.

Moreover, there are three sea mounds immediately north of FDM where fishermen have had and should continue to have the greatest potential for harvest. Expanding the danger zone clearly has a significant impact on the livelihood of our fishermen which in turn will decrease their catch affecting our local market by lowering the availability of fish for purchase and ultimately increasing the price of fish. In the end, our diet will be affected because these increased prices on local fisheries will force our local community to purchase cheaper foods such as canned foods which have been scientifically proven to be an unhealthy diet.

The Avifauna of Farallon de Medinilla, Mariana Islands (La Avifauna del Farallón Medinilla, Islas Marianas), Michael R. Lusk, Phillip Bruner and Curt Kessler, Journal of Field Ornithology Vol. 71, No. 1 (Winter, 2000), pp. 22-33, discusses the impacts of military training on FDM:

> **FDM's vegetation appears to have undergone significant changes since the island has been used as an impact area for military training. At the height of the Vietnam era, as much as 22 tons of ordnance per month were delivered to the island (USDN 1975). Over a three year period that began in May 1988, ordnance delivered to the island includes up to: (1) 5 to 612 live/inert bombs per month from bombers, (2) 920 missiles and 1,825 kg of bombs annually from fighter aircraft, (3) 1,440 rounds from naval gunfire annually, and (4) 50,600 rounds of small caliber ammunition and 2,600 grenade rounds annually (USFWS 1998a). The potential for this level of military training to alter drastically the vegetation of FDM was apparent in August 1997 when post-bombardment surveys of FDM revealed 45-50 fresh bomb craters and a large section of the island burned to bare earth (USFWS 1998A). It is likely that this type of damage is representative of vegetative change that can occur during military training and demonstrates its potential to alter the vegetative structure of FDM from one of a medium-height, relatively closed canopy forest, to one dominated by open areas with intermittent patches of low forest.**
>
> **Despite continuing impacts from military training, FDM remains a valuable seabird nesting resource in the Marianas and deserves protection. It is particularly valuable because it possesses important breeding populations of Masked Boobies and Great Frigatebirds. In order to properly assess the impacts of military training on resident land and seabirds, we recommend that the Navy permit frequent, on-the-ground surveys by qualified biologists. This is the only method by which changes in densities, distribution, and species composition can be adequately monitored over time. Studies of nest success on**

FDM compared to other islands would also help to determine affects of military training on resident seabirds.

Although the Migratory Bird Treaty Act regulations were amended in 2007 to allow for the incidental taking of migratory birds during military readiness activities (50 C.F.R. §21.15), it is worth mentioning that impacts on FDM as mentioned above are significant to the health of our land in relation to its resident birds and its surrounding waters. Furthermore, we are not asking to cease current military practices, rather, to simply stay the course and not pursue the proposed increase of the danger zone.

The Commonwealth of the Northern Mariana Islands is a fishing community.

The legal concept of a fishing community comes from the Magnuson Fishery Conservation and Management Act, reauthorized in 1996 and amended by enactment of the Sustainable Fisheries Act (SFA), which also renamed it the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The MSA requires Fishery Management Councils to amend existing fishery management plans and, among other things, pay more attention to human fishing communities.
MSA National Standard 8 (NS8) specifies that:

> **Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and the rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities (MSA Section 301(a)(8)).**

The amendments also defined fishing community:

> **The term "fishing community" means a community which is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community. (MSA Section 3(16))**

The National Standard Guidelines (50 CFR 600.345(b)(3)) provided additional definition of fishing communities:

> **A fishing community is a social or economic group whose members reside in a specific location and share a common dependency on commercial, recreational, or subsistence fishing**

or on directly related fisheries-dependent services and industries (for example, boatyards, ice suppliers, tackle shops).

In response to the mandate of MSA to identify and describe fishing communities, the Western Pacific Regional Fishery Management Council (Council) proposed that each of the major island areas (Hawaii, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands) be identified as a fishing community, because

In contrast to most U.S. mainland residents, who have little contact with the marine environment, a large proportion of the people living in the western pacific region observe and interact daily with the ocean for food, income and recreation...fishing also continues to contribute to the cultural integrity and social cohesion of island communities...In each island area within the region the residential distribution of individuals who are substantially dependent on or substantially engaged in the harvest or processing of fishery resources approximates the total population distribution. These individuals are not set apart...from island populations as a whole (September 1998, p. 52-53).

On April 19, 1999, the National Marine Fisheries Service (NMFS) approved identification of American Samoa, the Northern Mariana Islands, and Guam as fishing communities (64 FR 19067).

FDM is rich in fisheries for our people. Please allow us more access to our birthrights at our FDM. The waters surrounding our islands have been recently returned to us, rightfully. On September 18, 2013, 48 U.S.C. § 1705 was amended and now reads, in part:

Subject to valid existing rights, all right, title, and interest of the United States in lands permanently or periodically covered by tidal waters up to but not above the line of mean high tide and seaward to a line three geographical miles distant from the coastlines of the territories of Guam, the Commonwealth of the Northern Mariana Islands, the Virgin Islands, and American Samoa, as heretofore or hereafter modified by accretion, erosion, and reliction, and in artificially made, filled in, or reclaimed lands which were formerly permanently or periodically covered by tidal waters, are hereby conveyed to the governments of Guam, the Commonwealth of the Northern Mariana Islands, the Virgin Islands, and American Samoa, as the case may be, to be administered in trust for the benefit of the people thereof.

Prior to September 18, 2013, we did not have our submerged lands. The U.S. government has finally recognized that we have been neglected for many decades past and has begun remedies by

enacting U.S. Public Law 113-34. We are asking that the Navy do the same. Please respond favorably to our requests:

1. Adopt the No Alternative;
2. Allow our fishermen more time to harvest from the rich waters of FDM;
3. Conduct a complete reassessment of the impacts on FDM thus far; and
4. Allow for on-site studies of our wildlife on FDM by non-military personnel.

Should you still find it necessary to pursue Alternative1 or Alternative2, we strongly suggest renegotiating the technical agreement executed on January 6, 1983 by and between the Commonwealth of the Northern Mariana Islands and the United States of America.

We are undoubtedly part of the fabric of our nation's security and we share those same concerns as any other citizen within the 50 states. However, what sets us apart from the rest of the nation is the fact that we are a small chain of islands living off of our lands and waters. FDM has been, and always will be, an important and living component of our NATIVE MARITIME HERITAGE.

Thank you for your time and meaningful consideration of our submission.

Respectfully,

Keli A. Tenorio
President
Guatdia'a Gani
Guardians of Gani

REFERENCES

[1] Coastal Watershed Factsheets - Nearshore Waters and Your Coastal Watershed http://water.epa.gov/type/oceb/fact3.cfm

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2000. The Avifauna of Farallon de Medinilla, Mariana Islands (La Avifauna del Farallón Medinilla, Islas Marianas), , Journal of Field Ornithology Vol. 71, No. 1 (Winter), pp. 22-33.

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Draft EIS/OEIS Comment Form

Mariana Islands Training and Testing Environmental Impact Statement / Overseas Environmental Impact Statement

Please use this form to record your comments on the Mariana Islands Training and Testing Draft Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS).

All comments must be received no later than Dec. 12, 2013, Chamorro Standard Time (ChST), to ensure they become part of the official record. All timely comments will be responded to in the Final EIS/OEIS.

You may submit your comments by:
1) Depositing this form in the comment envelope before you leave tonight
2) Mailing this form to:

Naval Facilities Engineering Command Pacific
Attention: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

3) Completing the online comment form at **www.MITT-EIS.com**.

4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [ ] NO [ ] YES

Name: [redacted]

Organization/Affiliation: [redacted]

Address:* [redacted]

City, State, Zip Code: [redacted]

Comments: As a Civilian, I am neither for nor against the Military in General. However, if the trainings and testing is sure to not harm both marine land and human life then I will give my support.

Visit **www.MITT-EIS.com** for project information.

*Provide your mailing address to receive future notices about the Mariana Islands Training and Testing EIS/OEIS.

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Address:* [redacted]

City, State, Zip Code: [redacted]

Comments:

The commenting & public hearing process was not very open or accessible. The website was not very user friendly also. In regards to marine life, threatened speeics should also be in consideration of monitoring & study. We should not wait til they are endangered to protect them. Training should not happen at the expense of important cultural resources.

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Attention: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

3) Completing the online comment form at **www.MITT-EIS.com**.

4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [ ] NO [X] YES

Name: [redacted]

Organization/Affiliation: [redacted]

Address:* [redacted]

City, State, Zip Code: [redacted]

Comments: NO ACTION ~~BY~~ ALTERNATIVE :

Because many of these military ordinances are still presently around the Marianas today, there is no telling that during training & military excercise, some of these explosive materials might be around for many years within our lands & sea. who knows, some may be carrying poisonous & radioactive elements.

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Name: [redacted]

Organization/Affiliation: _____

Address:* _____

City, State, Zip Code: _____

Comments: I believe the training activities currently taking place on island are already a threat to the people and environment. Our island is considered sacred among the natives and it would be great for visitors, and people not local to the place, to grasp this. However, training activities may continue to happen. We are thankful to the military for what they have and are doing to improve and protect us. We are not resentful towards the military's actions. We just want a little acknowledgement and respect towards our culture and beliefs. Being a small island located in the pacific, we have a lot of issues to worry about already, mostly dealing with the environment

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Name: [redacted]

Organization/Affiliation: [redacted]

Address:*

City, State, Zip Code:

Comments: "I do not support the proposed Mariana Islands Training & Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training & testing activities pose severe threats to our Islands."

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Name: [redacted]

Organization/Affiliation:

Address:* [redacted]

City, State, Zip Code: [redacted]

Comments: I do not support the actions of the U.S. military using any Mariana Island for aggresive and violent training. Thank you for educating the local people on their brother/sister islands.

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Name: [redacted]

Organization/Affiliation:

Address: [redacted]

City, State, Zip Code: [redacted]

Comments:

People need to see more beauty to appreciate the beauty and resources that these islands contain. Military has bit off more than it can chew

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Name: [redacted]

Organization/Affiliation:

Address:* [redacted]

City, State, Zip Code: [redacted]

Comments: I propose that the MITT activities implement a 'NO Action Alternative'. In such, this recommendation does not mean that I support the on going activities already occurring in the Marianas Islands. Such Training Activities and Testing poses an extreme threat to our islands, people and our Marine & land resources.

STOP Militarization In the Marianas Islands!!!

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Name: [redacted]

Organization/Affiliation: [redacted]

Address:* [redacted]

City, State, Zip Code: [redacted]

Comments: I do not support the proposed MITT activites. I recommend the NO Action Alternative. However, my recommendation of this alternative does not mean I support the ongoing training activites already occuring in the Marana Islands. The Navy's training & testing activites pose severe threats to our islands.

I am against the destruction of my islands & the negative impacts it has on our marine life.

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Name: [redacted]

Organization/Affiliation:

Address:* [redacted]

City, State, Zip Code: [redacted]

Comments: the testing that is about to happen on our island is not safe for the environment. Even though they say it won't harm the environment, the training they do will affect the wildlife that's been living in the area. Also it's an ancestry ground. We keep our island as beautiful as it can get. The training will just alter some of the species' living habit.

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Name: [redacted]

Organization/Affiliation: [redacted]

Address:* _____

City, State, Zip Code: _____

Comments: _____

Est 2000 is a possible alternative

- theres only so much land that can be taken before there is nothing left

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Name: _____

Organization/Affiliation: _____

Address:* _____

City, State, Zip Code: _____

Comments: I do not support the proposed Mariana Islands Training and Testing activities. I recommend the "No Action Alternative". However, my recommendation of this alternative does not mean I support the ongoing training activities already occuring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands

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Anonymous Anonymous	Submitted via Website	DO NOT BOMB FDM! DO NOT INCREASE TRAINING IN THE MARIANA ISLANDS. OKINAWAN CITIZENS HAVE PROTESTED AN INCREASED MILITARY PRESENCE AND SO ARE THE PEOPLE OF THE MARIANAS. THERE HAS BEEN WIDESPREAD DISSATISFACTION WITH THE MILITARY IN THE MARIANAS AND THIS REACTION SHOULD BE TAKEN SERIOUSLY BY THE U.S. MILITARY. AN INCREASED PRESENCE WILL NOT PRODUCE LONG-TERM ECONOMIC EQUALITY THROUGHOUT THE MARIANAS AND WILL ONLY SERVE TO INCREASE THE CNMI GOVERNMENT'S DEPENDENCE ON THE MILITARY. THERE IS NO AMOUNT OF MONEY THAT THE MILITARY CLAIMS IT WILL BRING TO THE ISLANDS THAT WILL REVERSE THE NEGATIVE IMPACTS THAT THE USE OF WEAPONS WILL HAVE ON THE LAND AND THE PEOPLE OF THE MARIANAS.

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Name: [redacted]

Organization/Affiliation: _____

Address:* _____

City, State, Zip Code: _____

Comments: There are good things and bad things to the testing. The good things are at least they do have a place to test our and find out the effects. It is also okay since they do notify people and make it safe. However it is bad because our islands are sacred and we should aim to protect it. This is harmful with the radiation and harmful to the animals around it. I think they should stop the testing and find a new way to test

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Name: [redacted]

Organization/Affiliation: _____

Address:* _____

City, State, Zip Code: _____

Comments: I think that it is good that they have a place to test bombs and their other services. but there are consequences. Although they do warn fishermen, they are still harming the sea animals with that. they should be careful. In the room, they did say that they are expanding their area but that also means they are expanding the harm towards sea animals.

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Name: _____

Organization/Affiliation: _____

Address:* _____

City, State, Zip Code: _____

Comments: I feel that you are gradually setting up the destruction of the mariana islands with your trainings and testings. As I continued down the line of posters, your justification for your action showed to be hollow. They did not give me the assurance of "safety" that was constantly stressed. Most of your reasons were vague and lacked a clear description & benefit of how your actions could affect us positively. This is our island! Please respect it.

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Name: _____

Organization/Affiliation: [redacted]

Address:* [redacted]

City, State, Zip Code: [redacted]

Comments: The formal open-house event for the EIS is nice, but an actual conference where interested individuals can listen on to speakers about the various components in the EIS and ask questions would be best for this purpose. Allows everyone to share and gain more detailed information for those that do not have time to read the entire EIS.

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Name: _____

Organization/Affiliation: _____

Address:* _____

City, State, Zip Code: _____

Comments: I choose the no action Alternative, fishing in the NMC Islands has been a way of life for my family. & ~~has~~ we have seen drastic changes in the population of wild life in our ocean, I do not support the training currently taking place. I believe the live ammunition in this area disturbs the ~~deep~~ matured fishes habbits scaring them & preventing them from spawning in shore.

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Name: [redacted]

Organization/Affiliation: [redacted]

Address:* [redacted]

City, State, Zip Code [redacted]

Comments: In sum, the Mariana Islands training & testing of the use of vessels, sonar, & explosives will indeed take impact on the marine habitat, marine birds, vegetation, invertebrates, fish, & cultural resources. It does not matter whether the tests affect a small or big fraction. It still does not change the fact that these species will be harmed during the duration of this period.

Sonar waves can be compared with a faulty sound wave. Just imagine experiencing excruciating sound waves on a daily basis. It is like ~~a~~ giving permission for our dolphins & whales to suffer all for the sake of surveying & "protecting" this island that is not being threatened in the waters.

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Name: [redacted]

Organization/Affiliation: [redacted]

Address:* [redacted]

City, State, Zip Code: [redacted]

Comments: Stop supporting the destruction of marine life and land life. Please stop telling the public that the benefits outweigh the consequences. If you are going to destroy our island for military purposes, at least be honest about it. Although the military might think your reasons to bomb and attack the Mariana Islands are valid, the people of Guam do not. The military does not have the consent of Guamanians to destroy our island. Also, the ends do not justify the means.

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Name: _____

Organization/Affiliation: [redacted]

Address:* [redacted]

City, State, Zip Code: [redacted]

Comments: I do not support the sonar training. It may benefit the U.S., but there are no benefits for our ocean lives. You may turn the waves off when you see oncoming creatures but that is not 100% guaranteed. There are many undiscovered sea creatures in the Mariana Islands, so I do not support sonar training.

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3) Completing the online comment form at **www.MITT-EIS.com**.

4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [ ] NO [✓] YES

Name: _____

Organization/Affiliation: [redacted]

Address:* [redacted]

City, State, Zip Code: [redacted]

Comments: I do not fully agree with the bombing on the marana islands. even though it may benefit the military ~~because~~ they are destroying what is left of the mariana islands. I also disapprove because it harms the animals and enviroment.

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Draft EIS/OEIS Comment Form

Mariana Islands Training and Testing Environmental Impact Statement / Overseas Environmental Impact Statement

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Name: [redacted]

Organization/Affiliation: [redacted]

Address:* [redacted]

City, State, Zip Code: [redacted]

Comments: The sonar presentation did not deny the fact that the sonar was a contribution to the death of whales. Although the sonar is a way to defend their navy sailors from warfare, it still has negative effects on the natural habitats. The whole MITT presentation is a bit overwhelming for those who want to keep the islands safe. It is a sensitive case for islanders because it is our home and we should not be marginalized. I agree, however that it is for the overall protection for the island.

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Name: [redacted]

Organization/Affiliation: [redacted]

Address:* [redacted]

City, State, Zip Code: [redacted]

Comments: Although these environmental impact statements lists down ideas of the good it may contribute for the military, I feel as though some of these factors have been a threat to the Mariana Islands in terms of their use in the technologies produced. ## I am aware that the intentions of these trainings are for preparation for the worst, but are they really that valuable to sacrifice our natural habitat & without the consent of the people of Guam! Hear our voice!

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Name: [redacted]

Organization/Affiliation: [redacted]

Address:* _____

City, State, Zip Code: [redacted]

Comments: I wasn't able to go through all the booths, but I was able to go to 2. I went to one about sonar and FDM I mentioned radar and how it contributes to the death of whales. She went on with how its not the only contributing source and she does deeply care of them. Her stance was that its for our defense, our protection. Sonar is used to detect mine. I thought this was really interesting. I knew they kept away enemy ships but wasn't aware of its lookout for bombs and mines. I really dislike the bombing of outer islands. However because our safety is also important. I can't be against it. We need to train in order to be safe. I understand the ~~Guams~~ people of Guams point of view, but I wish they provided more compelling evidences ~~instead~~ so the people

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Name: [redacted]

Organization/Affiliation: [redacted]

Address:* [redacted]

City, State, Zip Code: [redacted]

Comments: I do not support the proposed Mariana Islands Training and Testing Activities. I recommend the "No Action Alternative." However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Marianas. The Navy's training and testing activities pose severe threats to our islands and its people.

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Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

A A	Submitted via Website	The proposed bolstering of military planning and activities throughout the Mariana Islands will not doubt have tremendously negative impacts on the physical environment in the region, as well as on social, cultural and political arenas. As a citizen of the CNMI, I simply do not support any and all actions that the military has always had, and continues to have in this area. The islands are essentially being used by the U.S. military and government as the expense of the lives of those in the Marianas, all in the name of a convoluted notion of "security," that misleads the American public into believing it is truly becoming a safer nation. All the while, the people who have always suffered and continue to suffer form this belief, are the people of the Marianas who's lands need to be bombed and trained on in order to maintain the "security" of mainland America. This growing militarism must stop now.
P. A	Submitted via Website	Is it really necessary? How will doing this benefit us in any way? All of this just entails destruction. Destruction to land and all of its inhabitants. More thought and research should be done about how this would affect the wildlife. It affects people too! We care about our islands. It takes billions of years for one island to emerge and to destroy it doesn't make sense at all. Then it becomes a home to many species of all animals and plants. It only makes the matters worse for this to affect species of the land and sea! It's slaughter! Are we trying to lead these creatures into extinction? Our environment is everything and we should only treat it with the utmost respect. While recycling is being strongly encouraged to save the environment of an island, another island is being bombed and destroyed. Something needs to change! Changes in the environment affects all creatures! It is like a domino effect. It may not be soon but in the long run. This madness needs to stop.
Y. Acfalle	Submitted via Website	I have a BIG feeling that the department of defence has planned this all along. If we go way back in history, it is evident to see that they're trying to take over our islands as their training site-- it is even evident today. If you compare our islands to other islands such as the Federated States of Micronesia, Hawaii, Puerto Rico, they all have bases but they don't take up most of their islands. They still speak their native language even though they are part of the US. That's the sad thing, we are an UNINCORPORATED territory of the US. They are trying to get rid of us, they are trying to push us out of our islands. I feel they chose our islands because of our Marianas Trench. --This is why they had that rule of absolutely NO speaking our native language in schools back then (to weaken our culture). --This is why whenever a person from here goes to the states, they (a US citizen) say they're not allowed to speak of our citizenship or they don't accept our ID's. --This is why I want to fight it. This isn't right! Us Chamorus have to end this now before it's too late. We need to spread the word! We need to take action NOW because right now, the way I see it, in probably 50 years or less, our islands will be 100% military bases. #SMH

Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

R. Ady	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. It puts our sacred and takes away our land.the land of the people
L. Aguilera	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.
M. Aguon	Submitted via Website	I am against the DOD proposal to use the Northern Mariana Islands as a training and bombing site. This area MUST be preserved and NOT used for the proposed destructive training.

Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

T. Ahana	Submitted via Website	Me and my constituents here at the University of Washington do not support the US military occupation of any islands in the Pacific. Please stop the occupation!
T. Akerele	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.
S. Alberts	Submitted via Website	It is wrong to take peoples land. This land is sacred, and it does not belong to the US! Stop colonization, and gentrification, and exploitation of these people, and of all people. This is threatening something beautiful, and important.
D. Alcantara-Camacho	Submitted via Website	I oppose the current training and testing in the Marianas and select the No Action Alternative. We don't need no war. We need Love a whole lot more.

Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

R. Alexander	Submitted via Website	I understand that from a military point of view, a training area in this region might be necessary, although personally I believe that the ocean should be used for peaceful purposes only. With regard to the EIS, however, I have several concerns. 1. Although the EIS process itself allows community participation, the people of Guam, in spite of being US citizens, are not able to participate in the formulation of US military policy itself, because, for example, they cannot vote for president or have a voting say in Congress. It seems to me that until the people of Guam can participate from the begining in policy formulation, aggressive plans such as this have no place here. 2. Sonar has been proven to adversely affect hearing and perhaps other functions in dolphins and whales. There are also possibilities that it will affect other sea life. The EIS itself states that it will permanently affect hearing in whales and dolphins. If this is known in advance, then according to the precautionary princile, it seems that until this problem is solved sonar training should not be conducted in the area. 3. The proposed training area contains vasts areas of ocean, islands, and air. We know that in recent years, global warming and atmospheric changes have brought a serious of disasters of unimaginable proportions. What guarantees are in place to ensure that extensive sonar use and underwater explosions will not affect the geo-thermic balance and/or the ability of sea life to sense and protect themselves from changes in their environment? Are there guarantees to protect the ocean, sea life, and surrounding island communities in the event of such a disaster during training exercises?

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Name: Alyssa Attiola

Organization/Affiliation: AOLG

Address:* PO BOX 3331 ~~Hagatna GU.~~

City, State, Zip Code: Hagatna GU 96932

Comments: It was good to learn more about what the US is trying to do and how in some ways it could play a role in our protection since we are a US territory. However, I was questionable if they knew the harmful effects that could happen to surrounding islands, such as Guam. I did learn that they advise fisherman before they start testing, which I thought was very considerate, but I also wish they could reconsider the harmful effects that could happen. I'm stuck in between & could only hope for the best for our island.

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Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

K. Asuncion	Submitted via Website	I think that these training and test should be contained to the Islands of the Mariana's that are already being used for trainings, the islands that are uninhabited. Why are is the military trying to take more lands? There is more than enough lands for real life trainings in the islands that are already being used!
M. Atoigue	Submitted via Website	Why doesn't the United States just give us our Constitutional Rights?
M. Atoigue	Submitted via Website	Why does the United States have to use our Islands for testing? Aren't there plenty of unused lands in the United States that can be test on?

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Name: Gabrielle Avilla

Organization/Affiliation: Academy of Our Lady of Guam

Address:*

City, State, Zip Code:

Comments: I spoke to the speaker who is a part of the Coast Guard, who practices the transmission of awareness and information to the island of Tinian. He spoke about how the Navy and Coast Guard practice the safety of warning the people of the island when they are prepared to release bombs and any release of materials dropped by the military. I believe that the speaker enlightened me about the whole idea of awareness and protection of people. Even if the profession of awareness is provided, the effects still will conquer the life on the island of the inhabitants.

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Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

L. Axelrod	Submitted via Website	I write this as a lawyer who practiced environmental law. There is no environmental mitigation that can make up for the injuries and death this "training" has inflicted and will in the future. This project is an environmental disaster without proportionate redeeming value. It's the ultimate hubris to destroy innocent life by bombing the hell out of this area in the name of preserving life. Has the military learned nothing about species being pushed further and further into small pockets of survival and about the injuries inflicted by sonar? Or, at the most 'practical' level, about the benefits flora and fauna wildlife provide humans by way of medicine, etc.? This is a form of destroying a village to save it, writ large. The lessons of Vietnam have been forgotten if, in this age of declining natural resources and species going extinct from various forces, including climate change, the military thinks that eradicating a rich area of species population can do anything but contribute to killing off human life since we're dependent on the chain of life, not outside it. Kill this program, please.
V. Balajadia	Submitted via Website	To whom it may concern: I am commenting on your proposals concerning our "beloved" island home "the Mariana Islands"and surrounding ocean-the blue pacific! I strongly believe that the outcome of your proposal will destroy our environment and our care of the earth and our future as an island nation. I urge you to listen to our island leaders and indigenous people's concerns in your deliberations as you move forward with your plans. KUDOS and blessings to Julian Aguon and those working to preserve our "small" island! Thank you , Sister Vincent Marie Balajadia
V. Balajadia	Submitted via Website	To whom it may concern: I am commenting on your proposals concerning our "beloved" island home "the Mariana Islands"and surrounding ocean-the blue pacific! I strongly believe that the outcome of your proposal will destroy our environment and our care of the earth and our future as an island nation. I urge you to listen to our island leaders and indigenous people's concerns in your deliberations as you move forward with your plans. KUDOS and blessings to Julian Aguon and those working to preserve our "small" island! Thank you , Sister Vincent Marie Balajadia

Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

C. Barretto	Submitted via Website	The People of Guam appreciate the freedom we live under, but in this day and age I am not sure that the price we have to pay if it's worth it. imagine these facts below: 1.The MIRC is the largest DOD range in the world. It spans 501,873 nautical miles of ocean and is 3 times larger than California. 2.The MIRC also includes 70,000 nautical miles of airspace for training. This is the size of the state of Washington. 3.The MITT would nearly double the ocean covered under the MIRC, expanding the range of DOD training to 984,469 square nautical miles. The MITT would be larger than the states of Washington, Oregon, California, Idaho, Nevada, Arizona, Montana, and New Mexico combined. 4.Under the MIRC/MITT, DOD will bomb Farallon de Medinilla, blow up mines under water and perform sonar training. 5.The use of sonar training will result in permanent hearing loss for up to 59 whales and dolphins per year. (MITT, Vol. 1, p. 3.4-114) This will kill off our natural resources and environment and will have a large impact on our island community and the rest of the world.
J. Bartlett (Main Street Moms)	Submitted via Website	The U.S. Military plans to occupy ALL of Pagan Island for live- fire training and military exercises, ignoring the indigenous rights of Pagan Islanders, and the devastating environmental impacts that such activity will certainly cause. Please do not let this happen to such a precious biological treasure
T. Benavente	Submitted via Website	Leave our Island and waters alone, Guam is our home.
P. Blair	Submitted via Website	No to the Navy conducting live rounds training in the Mariana's Pagan Island. Clean up of one of the Hawaiian Islands used for such training is not complete. Navy nuclear testing in the Marshall Islands without ESA continues to cause long standing environment and human health problems for the Marshallese.

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Name: Michelle Mays

Organization/Affiliation: UOG

Address:* Mangilao

City, State, Zip Code: 96923

Comments:

I do not support the proposed Mariana Islands Training + Testing actions. I support the No Action Alternative. It is obvious that using that area for these actions POSE severe threats to our islands, and beyond that it is selfish.

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Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

M. Blas	Submitted via Website	Permanent hearing loss of 59 dolphins and whales???? That's just like murdering them! Hearing is their most important sense and without it, they have little chance of surviving. Their echolocation is how they survive and how they escape predators... Is this really necessary? Does it have to be done here? And can it be tested in a laboratory and not in our waters killing real animals? In this day and age, simulations are very realistic and would result in NO animals killed... This past year, we have seen one giant dead sperm whale wash up on Guam's waters and one dolphin. It was very sad to see this, but with your proposed MITT site, we will see 59 of these a year? That's deplorable. What happened to the Marine Mammal Protection Act? And what happened to the Marianas Trench marine National Monument that President George Bush created? I'm truly disgusted by this decision to practice active sonar in the Marianas and by the lack of concern for our fellow mammals and these beautiful creatures that have been on this earth millions of years longer than we have, yet we humans (our US Navy mostly) are so insensitive and horrible to them...
M. Blas	Submitted via Website	Protection of Wildlife and Habitat??? How can you say that you are doing ANY of this if you are going to be dropping bombs in our waters? Our fish live in these waters. Our turtles live in these waters. Turtles that are federally protected in the USA... Our whales and dolphins live in these waters... Our food live in these waters. We only have ONE ocean... with many parts near many different countries... By bombing in OUR backyard, you are poisoning our waters, OUR food, OUR people... There has got to be another way... There just has to be... And with technology and our ingenuity... We need to find those ways... If you REALLY want to PROTECT WILDLIFE AND HABITAT.. If you REALLY want to PROTECT OUR CULTURAL RESOURCES AND HISTORIC PROPERTIES... Unless it's just talk and you are just saying those words to pretend you do...

Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

M. Blas	Submitted via Website	Here's what I want to know... When our Navy is out there bombing and testing bombs on the whales and dolphins' homes, who is out there checking to make sure that they are ceasing their activity "until the animal exits the zone"? So they will just be patrolling and policing themselves... We will just have to take "their word" that they are honoring the marine Mammal protection act and the Endangered Species Act? I hardly qualify that as "The Navy protects marine species and reduces its effects on the marine environment when training and testing at sea." It's like saying you don't need principals at a school because we just trust that the students will do what is right... And like saying that the police are not necessary because everyone is going to do what they are supposed to do... And how can you say that they are reducing the effects on the marine environment? You are BOMBING THEIR HOME!!! You are bombing our food source! You are bombing and putting tons of chemicals into the water that we swim in, the water that we fish from, the water that we invite tourists to visit and stimulate our economy. THE OCEAN IS THEIR HOME!! THE OCEAN IS OUR FOOD SOURCE!! IT WILL GREATLY IMPACT AND HARM US FOR YOU TO BE BOMBING IN AN AREA THREE TIMES THE SIZE OF CALIFORNIA! THIS IS UNACCEPTABLE AND JUST PLAIN WRONG! Please do something REAL to protect our Marine animals.. Here's a suggestion: DON'T BOMB OUR OCEAN. DON'T PLAY WITH BOMBS FOR PRACTICE. DON'T KILL OUR ANIMALS. DON'T POISON OUR PEOPLE. FIND ANOTHER WAY. IF YOU REALLY WANT TO PROTECT MARINE SPECIES.. IF YOU REALLY WANT TO REDUCE THE EFFECT ON THE MARINE ENVIRONMENT.
J. Blume	Submitted via Website	The USA has done enough harm in Guam. It is home to great natural beauty and magnificent creatures, a number of whom are endangered.

Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

J. Borja (Electronic)	I do not support the Mariana Islands Training and Testing. The Chamorro people have suffered enough. Our island has very little cultural insignias that remain in tact and not destroyed by people. These islands above Guam May be nearly impossible to occupy, but it is still sacred land. In Guam we have almost no wildlife, birds killed by snakes brought to the island by ships. Insects, rodents, and disease have become normal to our once sacred land. Much like the Native Americans we lived off the land, prayed to spirit, honored our surroundings, respected what and who came before. We didn't have a say when they suppressed our language and culture hundreds of years ago, now we do. Please do not destroy our sacred lands. One day when land shifts beyond human control it may one day become home to many Chamorros. Our reefs of Guam almost extinct still suffering and diminishing slowly yet surely. It is time to stand against destroying and stand for preserving Mother Natures beautiful bounty. Our islands are not up for grabs. Let our land be free from western development and high profit gaining, power struggle, and the need to control all beings on earth, including animals and plants. Stop destroying the earth
G. Borrini-Feyerabend (Electronic)	Unique biodiversity on the scale of the foreseen range in the Mariana Islands should NOT be destoyed or kept hostage to military exercises. Doing so would be nothing short of an environmental crime.
H. Bowen (Electronic)	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats the wellbeing of the people and animals that live there. Why continue seeing the people of these islands and their lands as expendable? The expansion would be irresponsible and very detrimental.
E. Bowman (Electronic)	I am opposed to the Department of Defense's plans for the Marianas Islands Range Complex (MIRC) and the Marianas Islands Training and Testing (MITT). In light of the calamity that occurred in the Marshalls and the continuing threats to Pagat and the entire Marianas as well as this region, it is time to step back and rethink an increase in destruction of the irreplaceable natural environment. I stand with the people of Guam and the CNMI who do not support increased destructive foreign military presence here.
C. Brands (Electronic)	I request that you NOT allow the bombing and otherwise destructive "training" exercises on the Mariana Islands. There are valuable and diverse, terrestrial and marine animals and fragile ecosystems, that, if destroyed, will never recover. Do Not allow the bombing of the Mairana Islands.
B. Bukikosa (Simon Sanchez High School) (Electronic)	Instead of using live ammunition, use blanks. Also cut down the amount of training days and exercises to prevent a large amount of marine life casualties. Or concentrate training site in a less inhabited area

Written Comment(s) on MITT Draft Environmental Impact Statement
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Name: M.C.

Organization/Affiliation:

Address:*

City, State, Zip Code: Guam

Comments: This question was asked to a six-year old "What do you like about Guam? How would you try to keep it? I want to protect my family. I would like families to give comfood to the Philippines. Guam. I think about the flowers. I care about the animals

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Pearl Harbor, HI 96860-3134

3) Completing the online comment form at **www.MITT-EIS.com**.

4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [ ] NO [ ] YES

Name: Herman Cabrera

Organization/Affiliation: Resident of Saipan

Address:* P.O. Box 501421

City, State, Zip Code: Saipan MP 96950

Comments: See attached

Visit **www.MITT-EIS.com** for project information.

*Provide your mailing address to receive future notices about the Mariana Islands Training and Testing EIS/OEIS.

Mariana Islands
Training and Testing EIS/OEIS
Public Meeting
Speaker Request Card

Name: Herman B. Cabrera

Organization/Constituency Represented (if any): _____

Supplied written & spoken comment

Date: 11.13.13

My name is Herman B. Cabrera and I am a resident of Saipan. I am in opposed to the proposed military firing and bombing activities on and underwater of the Commonwealth of the Northern Mariana Islands (CNMI).

Let me start by saying that our ancestors survived for centuries here in the Mariana Islands and lived to tell their children the tale of our natural healthy ocean environment and the abundance of marine recourses in the ocean that they used as their main food source. The vast blue water of this part of the Pacific Ocean still has lots of different kind of marine life living in it particularly those around our islands in the CNMI from Rota, the island on the south end of the CNMI, to Farallon De Pajaros, the northern end of the CNMI. Fish was and still is part of our healthy natural diet. Therefore, besides land, the ocean is the only other lively hood we have from the beginning to the present.

After World War II, the military left us with military junk such as unexploded ordinance, filled and empty oil (as well as tar, petroleum and other type of fuel) drums, Polychlorinated biphenyl (better known as **PCBs**) and other poisonous and toxic pollutants, and even the million gallon fuel tanks all over the south western part of Saipan without any mitigation plans for proper disposal. Not to forget to mention, this junk was left here on the island without warning to the local residents of the dangers when someone touches or gets near them. Another example, Puerto Rico dump was the military's disposal area for some of this junk and the area has become a public health dilemma as the situation within and around it still contains lots of impurities that even the military themselves now do not know what toxin materials are in there. We, the local people, do not want to fish around that area because we are afraid of what impurities those fish may have been exposed to. The white sand beach to the south of Puerto Rico dump changed over time to purple black like color and the place now smells horrible. Since the time the military left Saipan, Puerto Rico dump remains as it was, as a toxic dump. It still contains the harmful waste materials and worst of all we never hear from the military as to when they will come and properly clean up and dispose of this toxic waste.

The reasons why I am opposed to these military activities in the Mariana waters are:

1. These activities if allow will gradually contaminate our water around our islands and eventually will have strong negative environmental impact on all sea life in the CNMI waters.

rwl
S Scott 11/13/12

2. Bombing activities, when exploded on or in the waters, will have a significant and harmful impact to our marine life such as the fragile plankton. Plankton is a microscopic animal that live on the surface and underwater which can easily be destroyed. Plankton is an important part of the marine life in the ocean. Once these microscopic animals are destroyed Pelagic and all other fish in the CNMI waters will be greatly diminished.
3. Bombing activities along the Mariana Islands will stop us from being able to enter within 12 miles from the firing and bombing zone. We will be forbidden to go to our northern fishing grounds. This will limit my communities fishing capability and will have a significant impact on our fishing industry which will limit the economic growth within the CNMI.
4. My travel industry group in collaboration with Guam tourist industry is now promoting an international cruise ship for the Mariana Islands. The proposed military firing and bombing in the Mariana waters will definitely impacted our tourism economic growth.
5. Farallon De Medenilla (FDM) is an island just about 45 miles north of Saipan. The island is surrounded by a coral reef and it is in its birth stage. The military love to bomb this fragile and god given island. The island has been bombarded for decades and the middle part of the island is almost gone. The destruction is far too great and the water around the island is contaminated. According to one of the scientists from NOAA, who gave a presentation about dolphins, stated that Guam waters is contaminated 20% more than the water in Saipan. I believe that the water around FDM is by far more contaminated than Guam. The pelagic fish that travel thru FDM waters are contaminated. We catch and eat these contaminated fish. Based on CHC record people of the Marianas are dying of cancer practically every week. This is an alarming rate and most evidence points to this being caused by these contaminates left here by the military. Many of my people are dying of cancer and this military venture will only cause more pain and more suffering. My people deserve more than this.

Herman B. Cabrera

My name is Herman B. Cabrera and I am a resident of Saipan. I am in opposed to the proposed military firing and bombing activities on and underwater of the Commonwealth of the Northern Mariana Islands (CNMI).

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Herman B. Cabrera

Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

R. Cage	Submitted via Website	The U.S. military continue to destroy the Earth and the natural world. Please stop and get some help concerning your day to day mundane life style.
C. Calvo	Submitted via Website	I believe it should be in everyone's best interest to take every precaution there is to prevent any disturbance of marine life to their highest extent.
C. Calvo	Submitted via Website	I believe it should be in everybody's best interest to prevent as much harm from being caused to marine life. Absolutely all precautions should be thoroughly considered.
L. Camacho (We Are Guahan)	Submitted via Website	The Draft EIS fails to evaluate all reasonable alternatives. Three alternatives are considered in the Draft EIS, the "no action" alternative, DOD's preferred alternative, and a third alternative that adds 3 major training exercises and adjusts the preferred alternative for air and sea systems command. The Purpose and Need portion of the Draft EIS speaks generally about the importance of testing and training. It also provides an overview of the importance of the existing range. The Drat EIS, however, does not explain why DOD needs to nearly double the size of the existing range. It also does not explore any other configurations that have the potential for fewer environmental impacts. The no action alternative itself is misleading. DOD has presented the no action alternative as a continuation of the MIRC. This process is required for DOD's continued use of the MIRC area for testing and training. There is a significant difference between the status quo, which was addressed in the previous MIRC EIS, and a true no action alternative. The MIRC itself should be considered and evaluated as a separate alternative rather than being presented as a "no action" alternative. DOD is preparing several environmental impact statements covering actions in this region. Several of these are connected. DOD does not appear to have do an cumulative impacts assessment on these proposed actions. DOD should prepare a SEIS that properly complies with all of NEPA's requirements

S. Camacho (Univeristy of Guam)	Submitted via Website	The military build up has its pros and cons, however there are more cons that weighs out the pros. The information that I have searched for through the Internet and from my professors plays a big role here towards this plan for the military build up. Even when looking at a few pictures about the plan and what they plan on occupying and changing will be a huge drastic change for everything on the island and the people living on it throughout the Mariana Islands. I was reading through a news article in the Internet and how there are different opinions within the people living in the island of Saipan. They mainly focus on the economy and the environment towards the island. There are some people who have agreed and want the military build up to happen due to the fact that they think it will boost up the economy, because there many people leaving the island to seek for jobs and better opportunities. The people like for example former Rep. Manny Tenorio is siding the military build up due to the economy and the lack of job opportunities, where he thinks the build up will provide for jobs for the local people and will help the island. However, there are also some people who do not agree with the build up like for example Victoria-Lola Leon Guerrero of the Guam-based We Are Graham, is against the build up, because she is concern for the environment and remembers a past incident within the island due to the military build up. Some people think that there will still be no job opportunities and it will go to off-island workers instead of the local residents. When I was reading another article as well through the internet and where my previous professor of Marine Biology has discussed before dealing with the military build up that the military plans on taking out a huge amount of coral reef habitat on the island of Guam in the Apra Harbor area. The island of Guam's economy mainly depends on the tourism as to what attracts the tourists are the coral reefs habitats, the beaches, and other sites that deals with the environment. There were also other issues that are being concerned like the taxation issue, the issues with water supply, sewage treatment, electricity, and roadways. The surge in wastewater discharge to coastal waters, runoff from construction activities, and the population having to be increased could have damaging consequences for the near shore reefs if proper wastewater treatment systems and erosion-control techniques are not put in place. When looking at a map of the site for the military build up towards the entire region of the Mariana Islands, it was a complete shock towards myself due to the fact that the military will be occupying the whole entire region and it leads the local people to wonder on what will happen to them. The build up is not an easy thing to do let alone it also comes with different types of trainings, testing's, and all sorts of heavy equipment that can affect the people and the island. It can also lead the people to leave the island for good like previous islands from World War II. Anything is possible at this point, so in my view and my opinion. I am deeply concern for all of the islands within the Mariana Islands and Im also against the military build up.

Draft EIS/OEIS Comment Form

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Name: Reina Lynn Capati

Organization/Affiliation: AOLG

Address:* PB

City, State, Zip Code: 96931

Comments: What I learned from the questions we've asked about the FDM during the Mariana Islands Training and testing was really convincing and it may be helpful although in the end I know it may destroy the islands especially the fishes, and species here on island. The guy also mentioned that he would alert the fishermens about the training and testing and it'll also be announced before they do the testing. It was good to learn something new tonight. I kind of have mixed emotions about this though.

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Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

J. Capitulo	Submitted via Website	Testing in the Marianas Trench is a bad idea. The Marianas Trench is like one of the greatest monuments in the world that must be kept and not be tampered by using bombs. There are also hundreds of marine life that reside in the Marianas Trench. Thousands of fishes will die which the nearby islanders depend on. Nearby natives will be agitated if not angered if their source of food is gone. Fishing is also a culture to them. Also the testing of the active sonars could disrupts the natural sonars that dolphins and whales have. It will cause them to be confused that they cannot navigate properly. Many of them could die and would ruin the island's source of tourism which could be terrible since some islands only depend on their source of tourism for a source of funds. Training and testing on the Marianas Island is bad idea overall since it will disrupt lives and not just the marine life but the islands as well since it is their home.
M. Caringal	Submitted via Website	Although I am originally from the island of Saipan, I treasure the island of Guam because it is my current home. I can see that the people of Guam are really concern about what may happen to their island. I hear a lot of Chamorros asking "Out of all the islands, why Guam?" And I, too, ask that question. How much more acres of land are going to be taken away just for the testing? Yes, I have heard that the testings will be conducted on the lands already occupied, but what if one day, more land needs to be taken? The Chamorros of Guam may not have any more land to pass down from generation to generation. I understand both sides of the situation, and as long as the testings do not burden the citizens of Guam, then the testings can proceed.
I. Carrera	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.
G. Carter	Submitted via Website	To whom it may concern, Im Glenda Carter and currently a student of University of Guam major in Social work. I would like to express my concern regarding to Marianas Training and Testing(MITT) in my island as well as the neighboring island such as the Commonwealth of Northern Mariana Island (CNMI). I understand that the US Navy is preparing for readiness, development, and research to expand the military capability however, I believe that these training and testing will only deteriorates the island natural resources. The marine species will be endangered, and the safety of community will be at risk. Please take any consideration and evaluate carefully on what is the major possible impact of these training and testing to the island of Guam as well as the CNMI. I think every living things deserves to live. Thank you.

Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

G. Carter	Submitted via Website	To whom it may concern, I'm Glenda and currently a student from University of Guam. I would like to voice out my concern regarding to Marianas Training and Testing (MITT) in Guam as well as my neighboring island such as the Commonwealth of Northern Mariana Island (CNMI). I understand that the US Navy is preparing for readiness, development and research to expand the military however, I believe that these training and testing will only endangering our marine species and the possible health risk to the people in the community. According to Natural Resources and Defense Council, they stated that the increase of training exercises will "harm marine mammals and disrupt their migration, nursing, breeding, or feeding, primarily as a result of harassment through exposure to the use of sonar". They also added that although the "sonar use does not result in these or other kinds of physical injury, it can disrupt feeding, migration, and breeding or drive whales from areas vital to their survival". In the article called Sonar* An Effective Herbicide that Poses Negligible Risk to Human Health and the Environment,by www.sepro.com, "Sonar is absorbed through the leaves, shoots, and roots of susceptible plants, and destroys the plant by interfering with its ability to make and use food", which can be harmful to the environment and any thing that is in contact with this hazardous military devices. additionally, the explosive testing is also harmful to humans because of the chemicals such as "combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive), or water-reactive" can cause chronic health effects,health toxins, irritants, damage of mocous membranes, and lungs, skin, and eyes damages. Please take any consideration of these negative factors that very detrimental not only to our environment but also to the lives of billions of people. Please think about the health of your children, grandchildren, and your great-grandchildren and try to understand how they are going to live in this earth with full of hazardous chemicals that you will left behind. :(

Draft EIS/OEIS Comment Form

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Name: Angelin Castro

Organization/Affiliation: CMTOI

Address:* PO BOX 3746

City, State, Zip Code: Hagatna, GU 96932

Comments: I do not support the military taking Pagan because it is home to many indigineous chamorro people

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F. Cepeda	Submitted via Website	Mariana's islands our sacred and I'm here to defend it our ancestor found the islands for the future of the chamoru people not a testing ground for bombs or for your strategic plans I plan on visiting all the the islands north of Saipan in the future I wanna see the islands the way my ancestor found it so have some respect Uncle Sam you don't see us chamoru people going to the United States of America taking land or bombing any of your lands
F. Charfauros	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.
R. Charfauros	Submitted via Website	Please take into consideration the neighboring islands that consist of many diverse populations that call these islands their home.
D. Choi	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands. People have a right to their land—these rights are the founding principles of the united states. The hypocrisy of these policies are outrageous and ignore the fundamental principles of equality and justice. Please stop the exploitation and invest into areas that do not destroy or exploit people. There is a way to find win-win situations and with the innovation of technology, ideas and globalization, there is a better way.
C. Christensen	Submitted via Website	The Draft EIS (DEIS) fails to address the possibility that partulid snail species (members of the genera Partula and Samoana) may occur on Farallon de Medinilla. In Table 3.10-2 (Species Considered as Candidates for Endangered Species Act Listing) the DEIS notes that four species of the land snail family Partulidae occur in the project area. It also states that one of them, the humped tree snail (Partula gibba) is known to occur, or to have occurred, on Guam, Rota, Aguiguan, Tinian, Saipan, Anatahan, Sarigan, Alamagan, and Pagan. No mention is made of the occurrence (or verified ABSENCE) of this species on Farallon de Medinilla. The discussion of the terrestrial environment of Farallon de Medinilla (section 3.10.2.1.5, pp. 3.10-22 to 3.10-23) states that a survey of the vegetation of that island has been undertaken, but makes no mention of a survey of terrestrial invertebrates or, specifically, of a survey the island's land snails. In the absence of survey data verifying that no partulid species inhabit Farallon de Medinilla, it cannot be assumed that these

		species are absent. Although in Table 3.10-2 it is stated that partulid snails inhabit "[s]ub-canopy vegetation in lower strata of intact limestone forests forested and river corridors," the presence (or former presence) of P. gibba on the volcanic islands of Anatahan and Pagan indicates that the presence of (at least) this species on Farallon de Medinilla cannot be excluded on the basis of the information provided in the DEIS.
J. Citizen	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands. The people of the Mariana Islands do not enjoy the privlege of citizenship and do not even get to vote on their own future.
A. Coolidge	Submitted via Website	Please stop destroying our precious cetaceans and ocean environment for the sake of preparing for war. When will the truth be accepted by the military that violence does not keep us safe and that the greed of the military complex is such a large part of the force behind it all? The mentality of war is so retro, i.e. from early Greek and Roman times, somehow continuing in the mentality. Time for transformation. Instead of testing war machines, what about getting into non-lethal games, or music, or challenges that amp up the adrenaline without harming anyone. Why not take some time to simply sit down and listen and talk with "the enemy?" We are all people with feelings and thoughts and beliefs. And the world is abundant enough for all of us. Please -- drop the need to overpower and destroy and instead create a better world -- truly.
P. Crispell	Submitted via Website	I cant imagine a justification for bombing yet another island in the Pacific. Pagan is an inhabitable island and land owners still desire to live there. There are endangered species that will be disrupted by bombing and live fire practices let alone the vehicles and personnel traffic. Including Pagan in a training area will render the island unusable for its native inhabitants and the land owners with rightful claims. The US has destroyed enough natural habitat for its war machine. I realize it wont stop until we have destroyed everything beautiful in the world but it would be nice to leave this one island alone as long as we can.
J. Crump	Submitted via Website	The Navy should not do SONAR testing near Guam or the Commonwealth of the Northern Mariana Islands. The Natural Resources Defense Council (NRDC) is the nation's most effective environmental action group and they state that manmade sound waves, which we know as SONARs drown out the noises that marine mammals rely on for their survival, cause them injuries and death. "Nature," the international weekly journal of science published an article confirming the military's knowledge of their SONAR testing on marine mammal life, in particular the effects it has on whales. So, I plead with the Navy wanting to test around our waters to test elsewhere! Guam and the CNMI are surrounded by marine mammal life. The release of their SONARS will kill almost all of them. There

		are several solutions to prevent injuries and death, but those options cannot be explored near Guam or the CNMI because of our high marine mammal life. There are other water grounds where marine mammal migration isn't as high where SONAR testing can be an option. Let the Navy use other devices to check if marine mammals are nearby before releasing their SONARs. Let us research more about SONAR testing and the effects it has on marine mammal life and until then, let us limit the SONAR intensity until we discover how to avoid serious injuries and death to our marine mammals. Let us meet our military's need for testing and keeping our nation safe without killing a big part of our nations marine life.
A. Cruz	Submitted via Website	I do NOT support the current or proposed Marianas Training & testing activities and recommend the "No Action" alternative. Based on the current geopolitical climate in the region, and on the historical track record in the Marianas, as well as American treatment of Natives in the U.S., it would only serve to further tarnish the American reputation. In would be prudent to encourage and settle first the issue of self determination, particularly in Guam, before mass migration and further land takings occur. It would only serve to affirm America's role as a Democratic and just nation, rather than make it out to be imperialist and a military colonizer.

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Name: Ariana Cruz

Organization/Affiliation: Academy of our Lady, Guam

Address:* [redacted]

City, State, Zip Code: Mangilao,

Comments: My main concern is about the marine life. The water around FDM would be "dried off" at certain times just for the testing of bombs and different weapons. When I had questioned about the safety of the creatures that lived in the water, few of the people had said answers. I strongly believe that these testings will have nothing but a negative affect on the animals. The Koko bird and some other animals that are close to extinction inhabit that land as well.

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Name: ARIKA CRUZ

Organization/Affiliation: UNIVERSITY OF GUAM

Address:* PO BOX 5426

City, State, Zip Code: HAGATNA, GU. 96932

Comments: I DO NOT SUPPORT THE PROPOSED MARIANA ISLANDS TRAINING AND TESTING ACTIVITIES. I RECOMMEND THE 'NO ACTION ALTERNATIVE'. HOWEVER, MY RECOMMENDATION OF THIS ALTERNATIVE DOES NOT MEAN I SUPPORT THE ONGOING TRAINING ACTIVITIES ALREADY OCCURRING IN THE MARIANAS ISLANDS. THE NAVY'S TRAINING AND TESTING ACTIVITIES POSE SEVERE THREATS TO OUR ISLANDS. I WILL NOT ALLOW OUR PEOPLES CUSTOM OF HOSPITALITY BE TAKEN ADVANTAGE OF. I WILL NOT ALLOW OUR HOME TO BE DESICRATED AND LEFT TO TROUBLE MY CHILDREN.

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Naval Facilities Engineering Command Pacific
Attention: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

3) Completing the online comment form at **www.MITT-EIS.com**.

4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [ ] NO [ ] YES

Name: Ivan A Cruz

Organization/Affiliation: Our Islands Are Sacred

Address:*

City, State, Zip Code:

Comments: We can no longer continue to allow you to devalue the very islands that we have inherited from our ancestors. NO ACTION ALTERNATIVE! But we do not support the activities already in place.

PEACE IN THE PACIFIC

Visit **www.MITT-EIS.com** for project information.

*Provide your mailing address to receive future notices about the Mariana Islands Training and Testing EIS/OEIS.

Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

M. Cruz	Submitted via Website	What exactly are the military's plans for the region?
M. Cruz	Submitted via Website	Although the Mariana Islands Training and Testing (MITT) Environmental Impact Statement (EIS) provides information to the public regarding the proposed action that will be taken by the United States Navy, from the perspective of certain sects of the general community on the island of Guam, the EIS fails to provide information specific and concrete enough to assure the community of its safety. This comment will focus on the effects that the U.S. Navy's proposed actions may have on the sea life in the region. Although the EIS, along with the website that is provided for it to inform the public, states that "[p]rotecting the marine environment of the Mariana Islands is an important goal for the Navy," the supporting documentation provided fail to justify this claim. The importance of this goal comes to question when one reads he Department of Defense's "Marine Mammal Stranding Report," which reports that despite the presence of "… marine mammal mortalities associated with Navy activities, the root causes are not clear in most cases. (42)" Reports such as these, along with the MITT/EIS website, which is riddled with generalities and vague statements regarding the "strict guidelines and … measures" employed by the U.S. Navy do little to assure the public and concerned communities that the Navy is indeed taking measures to ensure the safety and welfare of sea life in the region. Further, these reports are contradicted by sources like Peter Eisler, whose article implies that the Navy is doing very little to understand what wildlife may be affected by their training activities. The purpose of this comment is not necessarily to state that the U.S. Navy is explicitly participating in activities that will be harmful to the community (or to accuse them of doing so); it is to question and examine the specifics of the information that the U.S. Navy is providing for the general public. The resources discussed in this comment contain so many general statements and lack so many specifics that it would be difficult for any concerned individual of the community to truly absorb and believe that the U.S. Navy is indeed concerned about the welfare and safety of sea life in the region, and that the same train of thought can easily be extended to the Navy's concern for the people of these regions.
S. Cucinotti	Submitted via Website	It would serve us all well if we protect the environment!

G. Dahtah	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.

Draft EIS/OEIS Comment Form

Mariana Islands Training and Testing
Environmental Impact Statement /
Overseas Environmental Impact Statement

Please use this form to record your comments on the Mariana Islands Training and Testing Draft Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS).

All comments must be received no later than Dec. 12, 2013, Chamorro Standard Time (ChST), to ensure they become part of the official record. All timely comments will be responded to in the Final EIS/OEIS.

You may submit your comments by:
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2) Mailing this form to:

Naval Facilities Engineering Command Pacific
Attention: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

3) Completing the online comment form at **www.MITT-EIS.com**.

4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [ ] NO [ ] YES

Name: Geraldine Dalton

Organization/Affiliation: Student - UOG

Address:* 783 L Carnation Ave Latte Hts. Gu. 96921

City, State, Zip Code:

Comments: I do not support the proposed Mariana Islands Training & Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training & testing activities pose severe threats to our islands"

Visit **www.MITT-EIS.com** for project information.

*Provide your mailing address to receive future notices about the Mariana Islands Training and Testing EIS/OEIS.

10 December 2013

Dr. Justine B. de Cruz
5 Osgood Ave.
New Britain, CT 06053

Naval Facilities Engineering Command Pacific
Attention MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100 Pearl Harbor, HI 96860-3134

To the Project Manager MITT EIS/OEIS:

Thank you for the opportunity to comment on the Draft Mariana Island Training and Testing EIS/OEIS. Generally, I believe the document covers the effects of the proposed actions in detail and is well written. Sections 2 and 3 that detailed how the analysis was carried out, what other alternatives were considered (and why they were omitted from further consideration), and the extensive information on explosives, weaponry, and proposed activities written for those with non-military backgrounds were especially appreciated.

Exceptions to the general high quality of the document are the sections on terrestrial species. These sections seem to have more errors of fact, often struggle with grammar or are awkwardly worded, and lack coverage or data for the Marpi Maneuver Area on Saipan. Therefore, most of my comments and suggestions will focus on sections 3.10, 4.3, 4.4, and 5, with specifics given below:

Section 3.10.2.3.4.2 Population and Abundance [of swiftlets] states that there are 10 known nesting caves on Saipan but there is a discrepancy with Figure 3.10-7 that lists only eight.

Section 3.10.2.3.6.4 Status within the MITT Study Area [of common moorhen] does not give any information on the status of moorhen in the Marpi Maneuver Area on Saipan.

Section 3.10.2.3.8.4 Status within the MITT Study Area [of megapodes] does not give the status of megapodes on either Rota or Saipan. As this is one of the endangered species that is found to be adversely affected by several of the proposed actions it might be a good idea to improve the information in this section. The species is not known to be present on Rota (and this should be stated), but the megapode has been documented by surveys in the Marpi Mitigation Bank and the Bird Island Conservation Area that are both in close proximity to the Marpi Maneuver Area on Saipan. More information would be helpful here.

Section 3.10.2.3.9.8 3.10.2.3.9.8 Status within the MITT Study Area [of reed-warblers] cites a 1992 paper by Craig which indicates that reed-warblers exist in Saipan's proposed Marpi Maneuver Area. This is not very exact information on the bird's status in the area and is also based on surveys conducted over 20 years ago. Camp, et al. (2009), which is a paper cited in your references, analyze more recent survey data. Perhaps the information in this paragraph could be updated.

Section 3.10.2.3.11.3 Status within the MITT Study Area [of fruit bats] gives the status of this threatened species in all the other areas where activities are proposed except for the Marpi Maneuver Area. Fruit bats are sighted on Saipan with some frequency, often in the northern areas of the island including Marpi. Surely their status in this region should be given here, and if unknown, surveys should be conducted.

Section 3.10.2.4.1 Partulid Snails and Section 3.10.2.4.2 Mariana Eight-Spot Butterfly (*Hypolimnas octocula mariannensi*) and Mariana Wandering Butterfly (*Vagrans egistina*) include no information on the status of either

snails or butterflies in Saipan's proposed Marpi Maneuver Area. It seems that surveys have recently been conducted in the other proposed areas for these species, but not in the Marpi area where karst limestone, abundant host plants, and limestone forest co-occur. Why hasn't this been done?

Section 3.10.3.1.1.1 No Action Alternative box states that "Explosions on FDM may affect, but not likely adversely affect, the Mariana fruit bat," followed by "Explosions on FDM may affect, and are likely to adversely affect, the Micronesian megapode and Mariana fruit bat." Mariana fruit bats can't have it both ways; which is it?

Section 3.10.3.2.1.1 No Action Alternative[with respect to low level helicopter training at Fena Reservoir] about the middle of the fourth paragraph states that "Mariana swiftlets leave caves located on the facility primarily at dusk and return at night. Some swiftlets, however, may leave caves during nesting periods to incubate eggs and to feed hatchlings. Most of the swiftlet activity outside of caves does not occur during helicopter flight times." These three statements are inaccurate. Swiftlets leave their nesting caves during the day to forage and return to them at dusk. During nesting periods, birds are present in the caves during the day while incubating eggs but frequently fly in and out of the caves during the day when feeding nestlings. Most swiftlet activity outside of the caves occurs during daylight hours (whether nesting or not) so that they would be active during helicopter flight times. The errors of fact need to be corrected.

Same section, paragraph five states: "There is an elevated risk for night exercises for the Mariana fruit bats [sic]....". Does the writer mean that there is an elevated risk to bats *during* night exercises? The paragraph goes on to state in an awkward way that night dispersing bats may co-occur with night time training in open areas, but rates the likelihood of injury or mortality as "discountable". Would that be a 30% or 40% discount? Or is the risk of contact low? The conclusion box following the paragraph states that: "Aircraft and aerial target strikes during training activities under the No Action Alternative may affect, but not likely adversely affect the Mariana fruit bat or the Micronesian megapode." This conclusion is confusing after having just read that the risk to night foraging fruit bats is elevated. Also, the Micronesian megapode was not discussed in this section at all and if it is likely to be affected, then the reason should be stated. It also seems likely that the swiftlet might be impacted. These paragraphs deserve some additional attention.

Section 3.10.3.2.1.2 Alternative 1 and Alternative 2 Training Activities [for fixed- and rotary-wing aircraft overflights] conclusion box indicates that Mariana fruit bats and Micronesian megapodes might be impacted without a discussion of how that might happen. This is confusing given the conflicting statement that most flights would be at "high altitudes where wildlife species, including ESA-listed species, would not co-occur with aircraft." Clarification is needed.

Section 3.10.3.2.2 Impacts from Military Expended Materials Including Explosive Munitions Fragments. The sentence in the first paragraph, "Munitions are only dropped on FDM; therefore, only activities that expend munitions that occur at FDM are included for analysis" should be moved to the end of the paragraph for clarity. Also, the second paragraph concludes with some oddly structured sentences: "On FDM, the range area where ordnance is restricted to inert munitions, vegetation is recovering in vertical structure and surface cover, relative to range areas where high explosive ordnance is permitted (U.S. Department of the Navy 2008c, 2012). Micronesian megapodes have been observed —within this area, although in apparent lower densities relative to areas north of the "special use area" where no live-fire training occurs (U.S. Department of the Navy 2008c)." Because the 'special use area' of FDM *is* the north of the island (Fig. 2.1-10) it might be less awkward to say: "In the range area on FDM where ordnance is restricted to inert munitions, vertical vegetation structure and surface cover is greater than in range areas where high explosive ordnance is permitted (U.S. Department of the Navy 2008c, 2012). Micronesian megapodes have been observed within the inert munitions area, although at a lower

density than in the northern area of the island where no live-fire training occurs (U.S. Department of the Navy 2008c)."

Section 3.10.3.2.2.1 No Action Alternative Training Activities [use of explosives on FDM] contains several awkward phrases at the end of the first paragraph. I suggest re-wording the last two sentences to read: Mariana fruit bats are not likely to be struck by munitions because bats are expected to occur only in the relatively closed-canopy forests in the "special use area" where ordnance is not used. Also FDM is believed to be little used by foraging bats transiting between islands (U.S. Fish and Wildlife Service 2010a). The possibility of injury to or mortality of individual transient fruit bats may be low, but is not negligible.

Section 3.10.3.2.2.2 Alternative 1 Training Activities [number of bombs, projectiles, missiles, and rockets that may be dropped on FDM]. It is difficult to see how exponentially increasing the amount of ordnance dropped on FDM (an increase from 2,900 small caliber rounds to 42,000 under Alternative 1, for example) would have the same impact on terrestrial species as the No Action Alternative. It seems unlikely that megapodes and fruit bats would recognize that there is a "No Fire" safety zone set aside on the island (based on the Navy's surveys of seabirds that continue to nest in no fire, no live fire, and live fire zones despite repeated bombardment). The conclusion that the impacts on species under Alternatives 1 and 2 would be the same as under the current or No Action Alternative, given the increases in explosive ordnance use, is unjustified.

Section 3.10.3.2.4.1 No Action Alternative, Alternative 1, and Alternative 2 Training Activities [that involve high explosive detonations on FDM]. Do the terms "No Drop Zone", "No Fire Line", and "No Fire Zone", all used in this section, refer to the 'special use area' of FDM? Can a consistent reference to this area be adopted?

Section 3.10.3.3.1 Impacts from Invasive Species Introductions. This section describes various pathways, pertinent to the military, by which a species may spread from a point of origin. I suggest that the first three paragraphs be edited closely for verb/noun agreement, errors in the use of parentheses and other typos, grammar, and clarity. In paragraph four, the first sentence maintains that the Navy inspects 100% of outgoing vessels and aircraft, which conflicts with the second sentence that states what the Navy does when it misses inspections; I'm sure 100% inspection is the goal, but what is the actual percentage inspected? And last but not least, the final two paragraphs of the section do not describe invasive species impacts but rather the actions taken by the Navy to avoid new introductions and to mitigate for an introduction to Guam that had disastrous consequences. Glaringly, this section does not either define what an invasive species is, does not describe the impact of an invasive species on insular organisms, and only tangentially refers to the brown tree snake, the organism that is at the root of the large containment effort. I urge that this section be re-written to focus less on generalizations and more on why the brown tree snake's introduction had such a devastating impact on Guam, as well as the potential risk for its introduction to new areas by the various pathways described.

Section 3.10.3.3.1.1 No Action Alternative, Alternative 1, and Alternative 2 Training Activities [with regard to invasive species impacts] concludes that the No Action Alternative, Alternative 1, and Alternative 2 would not increase risks to wildlife resources, species or habitats within the Study Area. While it is true that the kinds of pathways invasive species make use of to enter, establish, and spread from DoD installations may not change among alternatives, it is false to say that the risk of introduction does not increase with an increase in number of vehicles/personnel/food/landings, etc., that might transport an organism from an area where it is established to an area where it is not. Using humans as a disease vector for an example, a factor from those listed in Figure 3.10-10, it is easy to see that the more frequently a person infected with a virulent disease comes into contact with an uninfected population, the more likely the infection rate in that population is to rise (virulence x number of contacts = infection rate). An 'infection', or the introduction and spread of an invasive organism (say seeds of a weedy plant or tree snakes), has often followed a similar pattern. If the number of urban warfare training missions on Tinian and Rota increase from 17 (the No Action Alternative) to 36 (Alternative 1) and personnel and

equipment will be transported from Guam, the chances of stow-away introductions increases. If helicopter landings during direct action trainings as described in 3.10.3.2.3.2 are increased from 3 to 18 under Alternative 1, the number of contacts between potentially 'infected' aircraft or personal and an uninfected environment also increases exponentially resulting in increased risk of 'infection' (or invasive species introduction). So the conclusion that Alternative 1 and Alternative 2 do not increase the risk of secondary stressors to vegetation communities and wildlife resources is faulty.

Section 3.10.3.3.2.1 No Action Alternative, Alternative 1, and Alternative 2 Training Activities [with respect to stressors associated with impacts to water and air quality] does not discuss the impacts on Micronesian megapodes on FDM. However, the conclusions in the box following the text state that secondary stressors may affect and are likely to adversely affect megapodes on FDM. The discussion of these issues has been omitted....it would be good to include further discussion of those impacts here.

Section 3.10.4.2.2 Summary of Endangered Species Act Effects Determinations. The word "to" has been omitted between 'likely' and 'adversely affect' in the third sentence of the first paragraph.

Section 4.3.3.1 Army and Air Force Exchange Service on Saipan lists the new shopping complex at Andersen Air Force Base on Guam but nothing for Saipan. Is there a new building on Saipan as well?

Section 4.4.6.9 Cumulative Impacts on Sea Turtles states that: "The Preferred Alternative could also result in injury and mortality to individual sea turtles from underwater explosions, sonar, and vessel strikes." This doesn't jive with the paragraph's last sentence: "No sea turtle mortalities are estimated for Alternatives 1 and 2", the estimate coming from the model outlined in the previous volume of the EIS for sonar and non-impulse acoustical events. This seems to be misleading because explosions clearly produce an impulse, making the application of the model suspect. Or does this mean that the level of sea turtle mortality from underwater explosions proposed under the Preferred Alternative cannot be estimated?

Section 4.4.7 Marine Birds states that: "Potential responses would include a startle response, which includes short-term behavioral (e.g., movement) and physiological components (e.g., increased heart rate)." I believe that this belittles the potential impacts of mortality from air strikes, live gun fire, and underwater explosions on seabird populations. Mortality of breeding adults, especially for long-lived seabirds, can have a huge impact not only upon individuals, but also on population structure and population genetics; that impact would be quite a bit more long-term than a startle response.

This section goes on to state that the "incremental contribution of Alternatives 1 and 2 to cumulative impacts on birds would be low" for several reasons including that "Alternatives 1 and 2 would not result in destruction or loss of nesting habitat". Given the large increase in training and testing activities planned for FDM under the Preferred Alternative and given that seabirds nest all over the island, including the active strike zones, this statement is unlikely to be true.

This section also states that: "For most stressors, impacts would be short term and localized, and recovery would occur quickly", and that "While a limited amount of mortality could occur, no population-level impacts would be expected." I don't think that either of these statements is true given the plentiful studies of the impacts of multiple stressors (such as mortality due to predation, trampling, and grazing) repeated over many years that have limited many long-lived seabird populations to the point where they have dwindled to endangerment if not extinction. Hawaiian seabird populations are a good example of such cumulative, long-term, but not negligible, impacts. How many impacts, assessed as making a relatively low contribution to the cumulative impact of man plus nature, does it take to push a population, incrementally, into serious decline?

Section 4.4.11 Terrestrial Species and Habitats reiterates the same kind of misleading statements as found in the section above (e.g., "Potential responses would include a startle response" and "Recovery from the impacts of most stressor exposures would occur quickly"). As pointed out earlier, there would be no recovery from fatal stressor exposures.

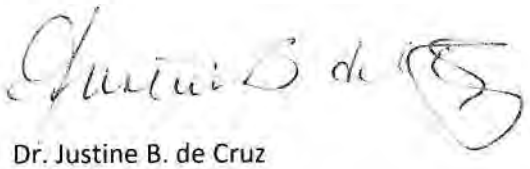
Section 4.4.11.2 Summary of Endangered Species Act Effects Determinations mentions only the cumulative impacts of the proposed actions affecting Micronesian megapodes on FDM. The summary fails to mention the other species that are earlier listed in this EIS as likely to be adversely affected by various proposed activities. The omissions include the common moorhen on Tinian, the nightingale reed-warbler on Saipan, the Micronesian megapode on Tinian and Saipan, and the Mariana fruit bat on islands throughout the MITT Study Area. Does this section need to be expanded?

Section 5.3.1.1.1.1 United States Navy Afloat Environmental Compliance Training Series sounds like an excellent training tool, especially for Lookouts. It meets military effectiveness and readiness policies, provides a level of expertise for constantly changing personnel, and presumably helps to reduce the impact of military activities on marine organisms. It is a great idea. Although the EIS avows that the "Marine Species Awareness Training is an effective tool for improving the potential for Lookouts to detect marine species while on duty, " I wonder how the effectiveness was evaluated. Is there a cipher that can be cited as to the difference in number of sightings by trained vs. untrained Lookouts? or perhaps the difference in sightings between Lookouts not undergoing the same training as those undergoing the Series?

And lastly, a general question about mitigation measures in Section 5. I note that the mitigation measures for Section 5.3.2.1.2.4 Mine Countermeasure and Neutralization Activities Using Positive Control Firing Devices and for Section 5.3.2.1.2.5 Mine Neutralization Diver-Placed Mines Using Time-Delay Firing Device include ceasing detonations if seabirds are sighted within the mitigation zone. This is laudable. My question is why do the rest of the activities (gunnery exercises, missile explosions, etc.) halt detonations only if marine mammals and sea turtles (but not seabirds) are spotted? Can seabirds be reasonably added to the 'cease detonations' list for activities such as anti-swimmer grenades and sonoboy detonations, for example?

Again, thank you for the opportunity to comment on the Draft MITT EIS/OEIS.

Sincerely,



Dr. Justine B. de Cruz
Beach Biology
former CNM-DFWI Wildlife Division Supervisor

K. De Leon (Electronic)	I fully support the military and their endeavors to help protect the Mariana Islands. However, there is a thought as to how this would affect us. With all your testing, will you at least notify the people as to when the testing will happen, and what kind of testing you will do?
M. De Oro (Electronic)	I do not support the current, or on going or future actions in regard to military testing and training in the Mariana Islands. The comment period was inadequate and access to this document was limited. The language used was also above the level of understanding for most residents in the Marianas.

Draft EIS/OEIS Comment Form

Mariana Islands Training and Testing
Environmental Impact Statement /
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Pearl Harbor, HI 96860-3134

3) Completing the online comment form at **www.MITT-EIS.com**.

4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [ ] NO [ ] YES

Name: DelaCruz. Whisperingwillow

Organization/Affiliation: University of Guam

Address:* P.O. Box 622

City, State, Zip Code: Hagatña, Guam, 96932

Comments: I do not support the proposed Marian Island training and testing activities. I recommend the 'No Action Alternatwe'. However my recommendation of this alternative does not mean I ~~dont~~ support the ongoing training activities already occurring in the marian Islands. The Navys traing and testing pose severe theats to our Islands!!

Visit **www.MITT-EIS.com** for project information.

*Provide your mailing address to receive future notices about the Mariana Islands Training and Testing EIS/OEIS.

C. Delacruz (Electronic)	Our island is sacred and our ocean is magnificent, don't add to what has been already threaten and taken away from us by the military. "I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Marianas Islands. The Navy's training and testing activities pose severe threats to our islands."	Thank you for participating in the NEPA process. As per CEQ interpretation on the "No Action Alternative," the "no action" is "no change" from the current direction or level of intensity; therefore, the "no action" alternative is continuing with the present course of action until the action is changed. At the conclusion of the Final EIS/OEIS, the Navy will determine whether the alternatives provide enough training and testing to meet the purpose and need. The DoD, as much as is practicable, will reduce/minimize potential impacts when conducting military training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
S. Demapan (Electronic)	It is understandable that our geographic isolation combined with our proximity to a major military outpost on Guam would make Pagan a very appealing site for military training and testing. The trouble is less about relocation and more about preservation of our already limited resources and land. Monetary compensation cannot replace the legacy of a habitable island that holds roots to indigenous past.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities. Military activities proposed on Pagan are addressed in the CJMT EIS/OEIS. Information regarding the CJMT EIS/OEIS can be found at: http://www.cnmijointmilitarytrainingeis.com.
N. Desai (Electronic)	I oppose the American military's expansion on Guam. The islands have suffered enough under American rule and deserve the rights of citizens, not an even larger military presence.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
A. Diaz (Electronic)	As a former member of the US Navy, I am aware of the trash that is dumped overboard of the ships while underway, among other things. I have personally seen it. Though there are regulations and scheduled times of trash collecting, I also know that trash is illegally thrown overboard, to include hazmat when facilities on the ship are closed, or because XO Happy Hour has ended and the trash needs to disappear, or a Sailor is too lazy to stand in line. When darkness falls, anything goes and who knows what is thrown overboard when no one	Thank you for participating in the NEPA process. The U.S. Navy complies fully with the requirements of Annex V of the MARPOL Convention as directed by the Act to Prevent Pollution from Ships (33 U.S.C. 1902) and modified by the National Defense Authorization Act for Fiscal Year 1994. The Navy expanded the geographic scope of this EIS/OEIS to analyze the potential environmental impacts of training and testing activities in areas (not covered in previous NEPA documents) where training and testing activities historically occur. The military is committed to

	can see. If ships are to be used in conjunction with these exercises or have more presence in the area, I do not want that trash to be anywhere near my island. The MARPOL annex outlines what may or may not be thrown overboard from a ship http://ocean.floridamarine.org/efh_coral/pdfs/Habitat_Plan/HabitatPlanAppL.pdf Most ships honor this, what makes the Navy so special or unique? Another issue I have is the US amassing more area to conduct training. An area the size of Washington state? First the US and the military take control of over 30% of my island of Guams total land area, then the military wants to seize and use more islands in the Mariana archipelago, and now the US military wants to extend the zone of which they currently use for military exercises? Why cant all the training be conducted stateside off the coasts of the US before pilots and service members PCS? Or sent to Hawaii for that matter? Is it because US soil is more valuable than my island and the rest of Micronesia. Every time the US military tests and explodes something in or from Micronesia, it is a catastrophe more or less. I do not want my people to experience anything close to what the people of the Marshall Islands like Bikini Atoll did. http://www.nuclearclaimstribunal.com/biksum.htm The Mariana Islands and the reset of the islands in Micronesia are sacred. Stop using and exploiting our lands to promote and further US agendas and policies.	protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
J. Diaz (Electronic)	My dear friends, please do not do anymore harm to our homelands on Guam. While I totally understand the objectives of the Nixon Doctrine, we need to look at better ways to work in collaboration with our neighbors to the East, North, South, and West. Please consider the situation and look at other viable options. I want to thank you for looking within your	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

	own footprint, but I'm not sure if this is the best option. What I would like for the Department to consider as well as the Pentagon, is to look at what our boys and gals really need and that's family and friends in the towns that they grew up in, to be the local hero's and heroines. This is the reason why I support the total withdrawal of our troops and to work in collaboration with other nations. I don't know about you, but I sure am tired of war and death and destruction and all of that nonsense. While Freedom is never free and while I absolutely support our U.S. troops in the line of duty and in harm's way, what I don't understand is "tearing down paradise to build a parking lot." We have done a wonderful job, but I hope that we can look at all the altervatives of how to best us resources in a time of huge crunches. Please remember that U.S. Congress has much on its plate this coming January 2014 when they go back for rounds of talk to avert another government closure. It makes sense to bring back the troops and have them employed on the local side. We need to think about the better ways in which we can foster peace within the region - the main reason why Guam was created the Tip of the Spear, but I believe that TOGETHER with the local community and backed by the expressed opinions of the troops themselves, why not consider some of the alternatives of our young people at We Are Guahan. And lastly, we need to look at first creating a better and lasting legacy of Freedom in this region and to look see Guam's Decolonization effort a noble endeavor indelible to U.S Democracy and Values. Please give the Chamorro People of Guam as chance to determine their future and with the help of the members of the United Nations, especially those who sit on Global security, we can find sustainable ways to promote those values that most Americans enjoy. Why can't we give the Chamorro people their chance to vote for their determination. Please. It is	

	already late and I just want the U.S. Government to finally recognize us as their Warriors who are in harmony with their roots, their human dignity and their full human right. While I recognize that there are many who are against such as plan of decolonization, this is the first step that needs to be done before you decide to use any more "space" on a very contaminated island. We need to focus clearly on achieving World Renowned healthcare on Guam. If we begin there, then we can achieve perhaps what the U.S. Marines were set out to do in the first place! I love all members of the U.S. Military and especially to all our Veterans. What we advocate for is not anti military, but just saying that the whole world deserves to see Pagan too. Don't you think? And so now you understand Paradise - the Garden of Eden - that's the Marianas my friends. While there are breathtaking places all over the world that are far superior than mine, I like to think that its "ours" and for "all generations." Please don't take anymore than we have already chewed. I love the United States of America and I sure love the country and the lands that I was born and hope that you can see that there is love deep down from all these comments and I hope that we can look at bringing in more troops, especially for rest and relaxation after training. I totally "get it" and why all of this is necessary, but I just hope that we can move forward, together as one people that want one thing - PEACE! Happy Feast of Our Lady of Guadalupe - the Feast of the Virgin of the America's who appeared to many "indigenous peoples" and who we hail as the Mother of the Savior of the World! May this Holiday season never be forgotten and that the love of a mother to a son who was the world to her, is akin to the love that we have for the islands named after Mary - Marianas! I hope that we can look at these archipelego islands as absolutely Sacred! The world needs the Marianas and we need the World! Here's to a	

	United Marianas effort honoring the human right to be part of that table with all the nations of good will! May God who is the Almighty and the Awesome One be at the center of this sacredness as this Creator created us and our islands for a reason! Please give us a chance to join forces with the rest of the world! Long Live the United States of America, it's Armed Forces - connected to families that we are all a part of, and May God Bless Guam, Rota, Tinian, Saipan and all the Mariana Islands. Please end all wars and let us begin with the ones that start within us all. Remember, we are ONE WORLD, ONE NATION, ONE HUMAN RACE! Saina Ma'ase, jon	
J. Digno (Electronic)	I know it is in the military's best interest that the people of the Mariana Islands and military forces get along during this process of amalgamation. Hopefully through the open house discussions, everyone will get along.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
J. Drake (Electronic)	Western Pacific marine life and oceanic territories are gravely threatened by the US Navy's military operations and exercises in that region. The USN's own continued surveillance and research of the impact of these operations exposes a troubling reality which indicates that there are few measures that can protect the region from future harm if they continue. Therefore I urge they be abandoned, or greatly modified if not completly ended.	Thank you for participating in the NEPA process. The Navy shares your concern for marine life. Potential effects from military training and testing activities were analyzed in Chapter 3 (Affected Environment and Environmental Consequences) of the EIS/OEIS. Also, as described in Chapter 5 (Standard Operating Procedures, Mitigation, and Monitoring) of the EIS/OEIS, the Navy implements, to the maximum extent possible, mitigation measures during its training and testing activities. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.
J. Duenas (Electronic)	another pre-empt for the navy.do it in malibu beach,calfornia. not in the mariana islands.	Thank you for participating in the NEPA process. The military is committed to protecting the terrestrial and marine environment during the conduct of its military training and testing activities.

Draft EIS/OEIS Comment Form

Mariana Islands Training and Testing
Environmental Impact Statement /
Overseas Environmental Impact Statement

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Naval Facilities Engineering Command Pacific
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3) Completing the online comment form at **www.MITT-EIS.com**.

4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [ ] NO [ ] YES

Name: Ivan Catlidy

Organization/Affiliation: Inalahen Lidy'La Kattural Chamorn

Address:*

City, State, Zip Code:

Comments: Any Soverein Nation would receive Monetary compensation For the use of their territorial space For another governments military training. there is no reciprocity here, just a blatant use of eminent domain.

In terms of Mitigation, 12 surveys spanning over 35,000 kilometers of track line covered and requiring over 3,000 hrs of visual and sound recording, yet there is no demonstration For understanding the migration patterns of marine Life. If you're looking to dissolve any issues between Fishing Boats and military training Boats, then place the training Boats in areas...

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(continued from front)

... that are proved to receive little or no migratory traffic. The Fishermen Follow the Fish. If you're trawling where there is reportedly no migratory marine traffic, that you won't have a problem with the Fishermen

H. Elias	Submitted via Website	As islanders, we know that land and sea is a crucial factor for survival. The least we can do is to create an awareness regarding this situation so that most island resident can work together in protecting our land and sea from destruction. Our islands are sacred, be sustained for the generation of tomorrow. Lets maintained the beauty of our islands as it is right now, cause most of it was being used for the benefit of civilizing our people during the first colonization till now.
S. Elias	Submitted via Website	As a concerned islander and student, I strongly uphold the importance of our islands because our islands are sacred and deserve to be taken cared of not be destroyed. For instance, Guam is already known as the hottest in the region and I can't imagine when the military finally really moved to Guam. Besides destroying the land and the sacred of our islands, my other biggest concern is the Marine Biodiversity in Apra Harbor. Our islands value the ocean so much and we cannot just let it be destroyed and taken away from us. "This operation (CNMI Military Relocation, or military buildup) could be one of the largest peacetime military buildups in U.S. history. Underwater tests close to the surface can disperse large amounts of radioactive particles in water and steam, contaminating nearby ships or structures." (Marler and Moore 2011). As I did my research, I come to a point where I know that our ocean especially the Coral Reef is going to be affected as much as our lands. I also know that most concerned citizens will be voicing out the importance of our lands so I chose Apra Harbor as a case to support this relocation of the Military bases to our Marianas Islands. "Apra Harbor is the largest deep-water port in the Western Pacific and the busiest in Micronesia. Within this port are over 70 acres of coral reefs that will be destroyed in the process. The port is of vital importance not only for the U.S. Navy but also as a tourist attraction for its wealth of marine life—its unique habitats host many species not found elsewhere in the archipelago, as well as some of the highest coral covered." (Paulay 2003). Finally, I am also a strong-minded islander and I strongly believe that the relocation of the military bases will not only affect our lands and ocean but most importantly our people. Because the land, the ocean, and the people together is what makes it sacred, the more we destroy one of these aspects of our cultural being, the less sacred we are. Knowing the consequences and what our islands would be like if the relocation is passed really saddened my heart. I honestly cannot handle the pressure and the kind of communities we will become. Most especially, our children or the future generation, they will grow up without knowing that our islands were once sacred or our home islands and the culture where we value family and society so much. It would be really hard because the influence and the environment our children will grow up and see will be different than what we see now.

D. Erway	Submitted via Website	We need pristine islands and their surroundings, much more than we need military practice fields. Just say no to this whole idea! We need a much smaller military over all, to be MORE secure, by scaring the rest of the world less. Please stop to travesty! Don
D. Ezekiel	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to a population with insufficient oversight and say in the matter.
F. Famalao'an	Submitted via Website	As women of Guam, we, the members of Fuetsan Famalao'an (Strength of Women), submit the following comments. First, we have submitted comments for previous Environmental Impact Statements (EIS), and for each, we have been concerned about the short timeframe for comment. For an extensive action such as the Mariana Islands Testing and Training (MITT), we object to a restricted comment period such as this, and request that an extension for comments be allowed until after the holidays. Based on previous EIS comments we have submitted, we find that many of the issues we were concerned about then are still those we are concerned about today with the MITT EIS. One such concern is that this EIS process has not allowed the local community or local officials any interim access to findings of the off-island consultants hired by the Department of Defense (DoD) to assess the impacts to us. Similarly, as with the 2009 Draft EIS for the Mariana Islands Range Complex (MIRC), DoD disregarded our concern about continued degradation of our lands and waters, and the continued risks to our health and safety. Further disregard is evidenced today in the preferred alternative option to expand the existing testing and training area to accommodate the MITT. Based on the alternative options described in the MITT, an increase of firing ranges and warfare training on our lands and waters may be imminent. This includes Pagan, and Guam, and other lands, oceans and skies within the Marianas. We object to any DoD claims that there is minimal or no negative impact because the testing and training already taking place. In fact, we insist that further analysis be conducted to guarantee that the existing training and testing is not in violation of our rights as indigenous women to protect and defend our families and our environment. Our everyday efforts to sustain our families and our environment are at risk if we allow for the operation of live firing ranges and warfare training on Guam or any of the Marianas Islands. Thus, as our policy, we advocate for an environment free of warfare and munitions testing and training, and we object to DoD's preferred alternative (including Pagan) to expand the existing MIRC and double the size of the testing and training range. Based on these few comments and our

		previous experience with the EIS, we have little to no confidence at all in this process. In spite of that, we register our objection to the continuation and expansion of such actions in our region, and insist that the involvement of the women of our islands continually be sought to ensure a balanced position is included in this process.
M. Flores	Submitted via Website	I am writing to OPPOSE the expansion of the Marianas Islands Training and Testing site. The expansion would not only cause further degredation in our delicate ecosystems, negatively impacting our nearby waters and skies, harming whales, dolphins, and corals, it would also reflect a continued expansion of American imperialism and colonialism, and more so environmental racism against the people of the Marianas. Beyond being a US territory, the people of the Marianas are part of an oceanic community, having knowledge of ocean highways and a deep understanding of sustainable resource management. Much of this has been drastically altered throughout our colonial history, bringing a loss of sacred knowledge and language. Great work has been done to reconstruct these lost narratives for the survivorship of Chamoru people. But even more so, the decision to expand the site emphasizes the continued objectification of native communities carried on by the United States. We are not separate from our environment - we are the earth, we are the oceans. The harm we do to our planet manifests in our bodies and in our cultures.
L. Galindo	Submitted via Website	I am horrified that our nation would even consider funding a proposal to destroy pristine islands in the Pacific. i witnessed the horror of the bombing on Kahoolawe in Hawaii. Not only is it immoral, the MITT would violate the National Environmental Policy Act and other environmental laws passed by Congress. On behalf of the people, the marine mammals and the endangered plants & animals of these sacred lands, I beg you to halt this proposal now! Thank you. Sincerely, Lauryn A Galindo
F. Garcia	Submitted via Website	1. The Draft EIS states training activities will be limited to Rota International Airport but it does not describe what type of activities will happen on the airport or if there will be any construction needed at the airport to support training activities. The EIS should determine what are the potential effects on airport operations and environ. 2. Any proposal to use Rota International Airport (or any airport within CNMI) must be coordinated with the airport sponsor - Commonwealth Ports Authority (CPA). Has this been coordinated with CPA? 3. CPA will require execution of a Ground Operations Plan and SOP.

Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

J. Garrido	Submitted via Website	The MITT EIS/OEIS for the Mariana Islands, including Guam, is too hugh a proposal and too much of a sacrifice to impose on the Chamorro people who have already given away much of their island and lost more of their history and culture than most nation of people could bare. MITT proposal is an action that would adversely affect the the life and territory of the Chamorro people. It is also a violation of their human right that would further erode and undermind their right to exercise their right of self-determination, as setforth in the United Nation decolonization process for non-self-governing peoples and territories. Under Free Association, there is recognition of mutual sovereignty and mutual respect. The United States has much to learn about true democracy, a terrible stigma on a Nation that created it. jose ulloa garrido, Chairman Task Force on Free Association
A. Gill	Submitted via Website	The island of Guam and all the Marianas Islands as well as surrounding continents are inhabited. The consequences of the MITT operation to these lands and their people need to be clearly posted and noted to the people before any such operation. We can appreciate the need to be prepared for any such tactical defenses that this operation may be training for, but at what cost? Clearly our government has no concerns of the little people on any side of the line, be it training or actual conflict. Are the islands and their people to be a collateral damage to this operation?
C. Graham	Submitted via Website	Clark Graham OK, we are having a meeting to discuss the Environmental Impact Statement... We are going to blow things up, probably on land and underwater, and we will use sonar that we know is harmful to marine mammals (our brothers). What are the results of these actions? We will alter the natural land and marine environment negatively, we will kill and maim animals including birds, fish, mammals... Conclusion: It is HORRIBLE for,the environment. Testing at an uninhibited island in the state of HI. Result: destructive to land and sea. Testing at Bikini, RMI. Result: Island blown off the face of the Earth, radioactivity caused heartache, illness, untold suffering for people, animals, earth, sky and water! Testing in USA: Similar to Bikini There should be NO testing in CNMI! The islands, marine and animal life are sacred!
A. Grajek	Submitted via Website	The people of the Marianas have lost enough land and ocean access to the military complex. They have both given and in many cases had it taken. For people who have limited natural resources every drop of ocean and every blade of grass is sacred. While the military sees our resources as training ground we see it as a life source. Please respect that.

Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

S. Greenway	Submitted via Website	Pagan Island is home to many, many species of animals and plants, surrounded by beautiful corals, not to mention is inhabited by many people who will all be put at risk if the U.S. military uses this island for bombing practice. The U.S. military has a long history of treating people of color around the world like second class citizens on this planet and I for one believe the time to stop that is now. In addition, the U.S. military has plenty of training sites already in existence and should continue using the places they have already destroyed, not expanding. Also, the economic deficit of our country is still incredibly high and the military should be trying harder to be reduce their budget, not frivolously spending money on things they don't actually need. America is already viewed very unfavorably around the world for its war with Iraq to find "Weapons of mass destruction", which didn't actually exist and disregard for yet more human life isn't helping that image at all.
H. Groot	Submitted via Website	We should stop American imperialism. We have no business making bases, interfering all over the world. We are making things worse doing that! Let us take care of internal problems in the US, and most importantly: work on climate change as we are the big polluters!
C. Guerrero	Submitted via Website	I don't believe bombing Farallon de Medinilla, blowing up mines underwater and performing sonar training is such a good idea. There will be devastation for many, many years. Also, the sonar training will result in permanent hearing loss for dolphins and whales.
J. Guerrero	Submitted via Website	Due to the recent nuclear catastrophe in Japan our region is experiencing a disregard from the united nations about the long term effect that Pacific Islanders will have to burden. The health problems that the next generation will develop is being over looked once again! Our people have suffered the nuclear bomb testing in the 50s and till present day. Considered to have the highest rate of cancer per capita by health officials is evident of the consequence that the past is still present today. Only recently has pacific pigeons been reestablishing a flock on our island. With the continue destruction of their habitat the people of the Mariana's will not be able to enjoy its natural birds, it is unfair that the u.s.a get to establish a reservation in america where it's citizens can enjoy recreation our hunting and the Pacific Islander is forced by the powers of a nation to adhere as the experiment to military live fire excercise.

Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

K. Guerrero	Submitted via Website	Thank you for presenting at UOG, However, I'm concerned about the land on my island of Guam, why use more land there when you have Hawaii and other places to train.
G. Guile	Submitted via Website	Stop thinking about destroying nature and driving people nuts on island by making this the biggest military exercising spot in the States.

Draft EIS/OEIS Comment Form

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3) Completing the online comment form at **www.MITT-EIS.com.**

4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [X] NO [ ] YES

Name: Alison Hadley

Organization/Affiliation: UOG, Northern Guam Soil/Water Conservation District

Address:*

City, State, Zip Code:

Comments:

Thank you for being honest about effects on animals.

But this is still not a military play ground.

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Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

M. Hardman	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.
L. Harris	Submitted via Website	We have no business bombing anything in the ocean or islands any more. Time to give up the concept of thinking we can save anything by destroying! These islands are part of the earth and should not be bombed!!!
K. Hartman	Submitted via Website	The history of American imperialism in the Northern Mariana Island is a shameful one. I find it unconscionable that our government is continuing with the exploitation, cultural destruction and environmental destruction that has long characterized our relationship with the people of the Marianas. I oppose the expansion of American military use of the Northern Marianas Islands, which has already made several islands uninhabitable.
G. Herron-Coward	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands."
A. Iriarte	Submitted via Website	First of all, cannot even believe Guam isn't even an option in the state menu. AT LEAST put a divider separating the states and territories. I'm sure everyone here is tired of hearing us reiterate over again that "all lands are sacred". Does not seem to me that the American government understands this despite centuries of indigenous protests on federal government intrusion. If you take more land, then let's trade and give us Yellowstone, the Sierras, and all of Rhode Island while we're at it then we can be even. Probably never going to happen since everyone in the "mainland" would oppose it. If we are truly U.S citizens, what makes us different? Publicly, the feds would deny this, but truly, they know we are. What a sad reality and a sad state we have come to from the day this nation was founded by a truly amazing group of gentlemen.

Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

N. Jain	Submitted via Website	I am extremely concerned that Pagan may be destroyed as an effect of military exercises conducted there. Pagan is home to endangered species and remnants of indigenous Chamorro villages from as long as 3,000 years ago. Please do not destroy these living beings, and the artifacts of culture and human history.
H. Johnson	Submitted via Website	Department of Defense: I urge you to cease the military build-up in the Marianas Islands. This build-up threatens biodiversity in these areas and will likely extinct several rare species of birds in the area. These species cannot be recovered. This in turn threatens the livelihood of the people who call these islands home. As a US citizen, I am concerned by the precedent that this action sets for the rest of the world, and I demand that you cease immediately. Sincerely, Hannah Johnson
A. Kaipat	Submitted via Website	I live in the Marianas. My family live here. My friends live here. I want the Guam and CNMI government, and especially DOD and the US Military, to know that I do not want our air, garden and fishing grounds poisoned. I repeat, I DO NOT WANT SONAR & BOMBING EXERCISES in the Marianas. Our islands have been bombed and polluted enough so many times over. Our people are dying from your activities! The US Military plans need to STOP! Utilize our islands for R&R or leave them BE! www.chamorro.com
C. Kaipat	Submitted via Website	CNMI is my home. Its natural resources are so delicate to its people and neighboring islands. We must keep our islands safe and free from dangerous chemicals and activities.

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Name: Cinta M. Kaipat

Organization/Affiliation: PaganWatch

Address:* P.O. Box 502914

City, State, Zip Code: Saipan, MP 96950

Comments: ① We would like to see a joint presentation of all the EIS (Divert, MITT, MIRC, JGPO & CJMT) presentations so we all can see the "Big Picture."
② We would like an opportunity to have a DTA session
③ We would like responses to our Questions published to educate others
④ How does this training in Pagan waters relate to the Marine Monument Covering these Waters near Pagan?

Visit **www.MITT-EIS.com** for project information.

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Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

A. Kerr	Submitted via Website	I do not support expansion of the MIRC complex. I am concerned about the use of the island of Farallon de Medinilla for bombing when it is nesting site for ocean birds. Specifically, the EIS reports that FDM is an "important" nesting site for two birds, but then also says that one of these birds, the great Frigate bird, "may occasionally" nest on FDM. So what does "may occasionally" mean? five or ten birds a mating season? Or one or two every 5 years? Also, if it is an "important" nesting site for the Frigate bird, how can the EIS then say that it only "may occasionally" nest on FDM? I find this wording ambiguous, vague and unsatisfactory for fully understanding possible effects on the great frigate bird. On a separate matter, I am concerned that there could be an increase in flight activity to and from the Air Force base on Guam. Military planes regularly fly over residential civilian areas. The planes often fly at a height where the noise they generate is often disrupting to certain daily activities. It may seems like a small thing, but this noise level can temporarily disrupt the quality of conversations (in person or on the phone) as well as cause a little stress to inhabitants, from enduring the loud to deafening noise of the plane flying overhead. If military flights are to increase over civilian residential areas on any or all islands, by how much? Can you point to any studies about the well being of inhabitants subject to regular noise disruption from aircraft? Again, I oppose expansion of MIRC/MITT and remain critical of continued use of FDM for military training purposes.
J. Kerr (Guam Community College ecoWARRIORS)	Submitted via Website	The Guam Community College ecoWARRIORs, a student organization that raises awareness of environmental issues, vehemently opposes and protests the proposed expansion of the military training area. This is not only a prime example of a colonial power attempting to exert its authority, but it is also a blatant disregard for the natural resources and people of the Mariana Islands. Doubling the size of the current MIRC will increase injuries to cetaceans that live in or frequent these waters. Bombing exercises will destroy the landscape of Farallon de Medenilla. Furthermore, residents of more populated islands will be subjected to increased levels of aerial noise. If the military insists on bombing our islands and destroying our resources, soon they won't have much real estate to protect. Doubling the size of the training area is yet another example of military overkill, and no sensible reasons exist to justify this proposal. We strongly support retraction of the plans for the MITT.
S. Kessler	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to the islands, as well as the ocean and its animals, and it must stop.

S. Kim	Submitted via Website	"I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands."

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Name: ANDRE KOZIJ

Organization/Affiliation: ASIA PACIFIC ACADEMY OF SCIENCE, EDUCATION AND ENVIRONMENTAL MANAGEMENT

Address:* P.O. BOX 7527

City, State, Zip Code: SAIPAN, MP, 96950

Comments:

I WOULD LIKE TO ENQUIRE ABOUT THE POSSIBLE USE OF DEPLETED URANIUM MUNITIONS WITH RESPECT TO THE NAVAL RANGE AT FARALLON DE MEDINILLA EITHER NOW OR IN THE PAST. I CAN ALSO BE REACHED AT E-MAIL : akaspn@hotmail.com.

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K. Kuper	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose a severe threats to our islands.

Draft EIS/OEIS Comment Form

Mariana Islands Training and Testing Environmental Impact Statement / Overseas Environmental Impact Statement

Please use this form to record your comments on the Mariana Islands Training and Testing Draft Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS).

All comments must be received no later than Dec. 12, 2013, Chamorro Standard Time (ChST), to ensure they become part of the official record. All timely comments will be responded to in the Final EIS/OEIS.

You may submit your comments by:
1) Depositing this form in the comment envelope before you leave tonight
2) Mailing this form to:

Naval Facilities Engineering Command Pacific
Attention: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

3) Completing the online comment form at **www.MITT-EIS.com.**

4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [✓] NO [ ] YES

Name: Tumona Laqstan

Organization/Affiliation: Academy Our Lady Guam

Address:* 119 Lilac CT Latte Heights

City, State, Zip Code: Mangilao, GU 96913

Comments: I do not support the sonar b/c although it helps detect enemy ships, it affects the animals within the Marianas in a harmful way. I consider it unethical. The sound waves would cause the death of sea life such as whales.

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B. Laxon	Submitted via Website	The time and money being considered to be spent on actions that will partly or entirely destroy the ecosystem and local human environment, of these islands, would be much better spent on education, healthcare, infrastructure, etc. at home or abroad. We already have a greater military than the rest of the world combined. We do not need to test more weapons of war. Who do we need to protect ourselves against? If we can spent this money to turn our so called enemies into allies and friends no more people need to die or suffer needlessly.
J. Lee	Submitted via Website	Comment to MITT As a person that has been living on Guam for the last 20 years, I have a lot of fond memories on this island and this island has become my home for many years. I am one of many inhabitants on this island. Although I may not be Chamorro, Guam is home. I love this island and the people of Guam. Therefore, I believe that this military project will impact me because I am now part of this community. The Solar activity will not only affect me but it will affect the many inhabitants on and around this island. MITT will destroy the sea life and there is a possibility of the community being diagnosis with cancer. Like the Marshall Islands, they have been greatly impacted by the radiation from nuclear testing in the past and many individuals have been diagnosis with cancer. According to Health and Human Consequences article, it states “Cancer rates and incidence of birth defects are greatly increased in areas exposed in the radiation fallout. According to the National Cancer Institute, exposure to radiation during the atmospheric testing era resulted in an estimated 120,000 extra cases of thyroid cancer and 6,000 deaths.” Therefore, individuals will be impacted by the testing physically, psychologically, and their health will be impacted. Testing has been conducted in the past and individuals have been greatly impacted by the testing. Secondly, MITT will affect the sea life tremendously. The Earth Is being greatly impacted now compared to before, especially with Global Warming. There has been rising of sea levels, coral bleaching, and many other effects are occurring to the sea life. According to what’s The Damage, it states “The production of nuclear weapons has polluted vast amounts of soil and water at hundreds of nuclear weapons facilities all over the world. Many of the substances released, including plutonium, uranium, strontium, caesium, benzene, polychlorinated biphenyls, mercury and cyanide, are carcinogenic and/or mutagenic and remain hazardous for thousands, some for hundreds of thousands, of years.” Therefore, polluting the soil and water will greatly impact the sea life. There are more cons that can be listed but my two points are simply the major points that concern me as an individual that has made Guam her home. Reference Page "Green Peace International." Green Peace. N.p., 26 Apr 2006. Web. 18 Nov 2013. <http://www.greenpeace.org/international/en/campaigns/peace/abolish-nuclear- weapons/the-damage/>. "Nevada Desert Experience." . N.p.. Web. 18 Nov 2013. <http://www.nevadadesertexperience.org/issues/consequences.htm>.

V. Leeds	Submitted via Website	To whom it may concern, My understanding is that the Mariana Islands Training and Testing program (MITT) violates the National Environmental Policy Act and other environmental laws which have been passed by Congress. These laws are in place for a very good reason. This pristine area was once home to rare migratory birds and a plethora of sea life, now there is next to nothing able to survive there, nor will anything be able to for the foreseeable future. In addition, “Full-spectrum live-fire military exercises means year-round amphibious attacks, bombing, torpedoes, underwater mines and other detonations from the air, from the sea, and from the ground, as well as sonar training that will result in permanent hearing loss for up to 59 whales and dolphins per year, according to the Pentagon's own estimates." Please start taking better care of our planet and its inhabitants.

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Name: Victoria-Lola M. Leon Guerrero

Organization/Affiliation: Guahan Coalition for Peace and Justice / Our Islands Are Sacred

Address:*

City, State, Zip Code: Toto, Guahan

Comments: I do not support the proposed Mariana Islands Training and Testing activities. I recommend the "No Action Alternative." However, my recommendation of this alternative does not mean I support the ongoing training activities already occuring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands. I did not support the MIRC when you released that EIS, and I do not support the use of our islands for war games.

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Name: Rmiyaa Li

Organization/Affiliation: Academy of Our Lady of Guam

Address:*

City, State, Zip Code: ~~Tamuning~~ Tuming , Guam 96913

Comments: ~~Those~~ Sonar : -turned down when ~~the~~ Marine creat ~~is~~ was ~~near~~ come close ~~to~~ to the vessel
-turned off when they are really close
-for the safety of the citizens ~~as~~ as being part of the navy.
Mariana Islands on the playground for ~~the~~ testing these military equipments.

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Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

S. Linford	Submitted via Website	Please cut back on Navy training and especially weapons testing!
L. Loe	Submitted via Website	HOW CAN THIS TRAINING AND TESTING BE PATRIOTIC? IT WILL INJURE/KILL OUR FELLOW CREATURES OF THE SEA, POLLUTE OUR AIR AND WATER, AND THE US IS NOT IN DANGER AT ALL FROM ANY OTHER ARMY OR NAVY. END THESE 'PRACTICE SESSIONS' NOW.
E. Lord	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.
G. Lujan	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands and ocean; over time, threatening humanity as a whole.

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4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [ ] NO [ ] YES

Name: Malaya

Organization/Affiliation: Our Islands Are Sacred

Address:*

City, State, Zip Code:

Comments: I do not support the proposed Mariana Islands Training & Testing activities. I recommend the No Action Alternative. However, my recommendation of this alternative does not mean I support the ongoing training activities already occuring in the Mariana Islands. The Navy's training & testing activities pose severe threats to our islands.

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Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

T. Maxedon	Submitted via Website	Sadly, DOD's proposed expansion of MIRC represents a harmful impact to the ecosystem of the Pacific Ocean, especially in the Marianas. It is just another proposal that has fallen on deaf ears with respect to DOD's ongoing military build-up mentality in that region at all costs. Moreover, DOD's resources could be far better spent working to eliminate the various "garbage islands" floating in the Pacific and work to contain radioactive debris currently heading for US coastal regions that represents a far greater impact to the safety of US citizens. I am against any expansion of MIRC. Tom Maxedon Louisville, KY
N. Mayers	Submitted via Website	i oppose the expansion at mariana island for the ecological and environmental harm it will cause, for the buildup of yet more military threat against China, for the waste of US resources devoted to waging war. I visited Jeju Island, So.Korea, where the village culture is being destroyed and the oceans are being polluted by the construction of a US/So.Korean navy base. The pink dolphins will never more return there.
R. Medina	Submitted via Website	Please learn the history about how the natives on Guam have been impacted; they had bombs, contaminated water, loss of land and many deaths and still births, please let them be and live their natural and cultural way
J. Mendiola	Submitted via Website	PLEASE LEAVE OUR ISLAND AND OCEANS ALONE!
L. Meo	Submitted via Website	“I do not support the proposed Mariana Islands Training and Testing activities. I recommend the ‘No Action Alternative.’ However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy’s training and testing activities pose severe threats to our islands.”

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4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [ ] NO [ ] YES

Name: Ysa Mercado

Organization/Affiliation: Pearl 9 Productions

Address:* P.O. BOX 2035

City, State, Zip Code: Hagatña, GU, 96932

Comments: I feel like the testing is necessary to keep us safe, but if there is an even safer way to do it without causing any harm to our land & water that would be much appreciated. Of course there will be casualties but if it could be in a more controlled, safe environment it would make Guam clean. & ultimately (mostly) everyone would be happy.

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R. Miller	Submitted via Website	ES.5.2. In the EIS, it states that, "Alternative 1 reflects adjustments to the baseline activities which are necessary to support all current and proposed training and testing activities through 2020." This suggests that another EIS may have to be submitted at that time. Is there any possibility that as these EIS's continue to be submitted and the military continues to use land and sea areas that anything may be returned to the public or jurisdictions? Table ES.6-1. Section 3.1. Under the Metals section it states, "Sediments near military expended materials would contain some metals, but concentrations would be below applicable standards, regulations, and guidelines." It would be nice to know what the concentrations are, and what the standards are. Table ES.6-1. Section 3.1. Under Chemicals Other Than Explosives section it states, "Chemical, physical, or biological changes in sediment or water quality would not be detectable, and would be within existing conditions or designated uses." Again, it would be nice to see these numbers and know the levels which are not detectable. Just because something is not detectable does not mean it can't have a negative affect over a long period of time. Table ES.6-1. Section 3.3. Under the Acoustics section it states, "Most of the high-explosive military expended materials would detonate at or near the water surface. Only bottom-laid explosives could affect bottom substrate and, therefore, marine habitats." Marine habitats are not limited to bottom substrates. The open ocean is also considered a marine habitat and any explosives which are detonated at or near the water surface would affect the open ocean habitat. This needs to be addressed. It also states, "The surface area of bottom substrate affected would be a fraction of the total training and testing area available in the Study Area." While this may be true it would be important to delineate those bottom substrate areas that would be used and assess the effects on those specific bottom substrates as it may not be uniform over the entire Study Area. Soft bottom sediments were also discussed, but effects were not discussed. There are many animals and plants that inhabit soft bottoms sediments which may be affected by acoustics over soft-bottom sediments. This needs to be addressed. -Throughout the EIS there are many phrases which state that effects from certain activities are "not expected" on a certain group of animals (Example: Table ES.6-1 Section 3.4, under Acoustics). However, it does not clarify why this is stated. Is there data? If there is, it should be provided. If not, I'm not sure you can state this. Table ES.6-1 Section 3.4. Acoustics. What would be an affect that does not adversely affect marine mammals? Table ES.6-1 Section 3.4. Physical Disturbance and Strike. It is stated that "The use of seafloor devices would have no effect on any ESA-listed marine mammal." You seem very sure of this. Please supply your rationale. Table ES.6-1 Section 3.5. Acoustics. It is stated that the use of explosives will affect some species of sea turtles but not others, but provided no information as to why this is. Please expand on this and provide the rationale behind this statement. -Throughout the EIS the effects on ESA-listed species is discussed, however it is not discussed as to what affects

		any of this training or testing will have on other marine species. Why is this? Why were only ESA-listed, or those proposed to be listed, considered in this EIS? Table ES.6-1 Section 3.6. Secondary. It is stated that, "Pursuant to the MBTA and 50 C.F.R. Part 21.15, these impacts will not cause significant adverse effects to populations of bird species not ESA listed and otherwise protected under the MBTA." How much of a population needs to be destroyed or affected before it has a significant adverse effect to the population? I think the goal should be not to reach that point, but to set the standards lower so that when we start to see a small affect, we can stop before it reaches a significant adverse effect to the population. Table ES.6-1 Section 3.10. Physical. Wildfires are mentioned for the first time here as affecting terrestrial species and habitats. Wildfires also have a secondary affect to coral reefs and should also be mentioned and analyzed in the marine invertebrates section. ES 7.4. How much monitoring will be done for the purposes of this project? In the past data that has been collected by the Navy seem to not be readily available to those who need it, and sometimes available only after an action has been carried out. It would be nice to see the protocols and know how the monitoring activities will be completed, and to get updates on progress as the monitoring goes along.
R. Miller	Submitted via Website	Section 2. Training and testing has historically occurred in the MITT Study Area, however there has never been any EIS before to determine the effects. Is there any way to know how the training and testing has affected habitats already? 3.0.4.1.6.1. "There are in-water active acoustic sources with narrow beam widths, downward directed transmissions, short pulse lengths, frequencies above known hearing ranges, low source levels, or some combination of these factors, that are not anticipated to result in takes of protected species and therefore are not required to be quantitatively analyzed." So, if a species is not protected, it does not require quantitative analysis? Is there any qualitative analysis that has been done? I think that those species which aren't listed should also be analyzed. Also, a behavioral risk function equation was given, but no source for this equation. Where did this come from and how is it applicable to this analysis? -Decibel levels are listed throughout the EIS. It would be nice if there was a list of dB levels, and what they are comparable to for reference. Also, it would be nice to get each species listed with dB levels next to them to see how it all compares. 3.0.4.1.6.2. "The source is expected to result in responses which are short term and inconsequential….." Even if a source is expected to result in responses which are short term, they should not be deemed inconsequential due to the fact that short term effects accumulated over the long term can become long term adverse effects. Table 3.0-5, Small Impulsive Sources. It states that there was quantitative modeling in multiple locations, however it does not list the locations. Do these locations correspond or have any resemblance with what it may be like in Guam, or the Marianas? Best to go from that data. -It would be nice to get the

		defined difference between training and testing. Are they essentially the same thing? Why are they separated. Table 3.0-8, Mid-Frequency, MF-1 & MF-4. Under Alternative 1, it seems that there are less sources than in the No Action Alternative. How/why is that? 3.0.5.2.1.1. Mine Warfare Sonar. "Mine detection sonar use would be concentrated in areas where practice mines are deployed, typically in water depths less than200 ft. (61 m)." Is this open ocean depth 200 ft., or is this bottom depth of 200 ft.? Some corals can still grow down to 200 ft., so it would be good to know how coral affects were accounted for at this depth with the use of Mine Warfare Sonar. 3.0.5.2.1.5. "In an attempt to determine traffic patterns for Navy and non-Navy vessels, the Center for Naval Analysis (Mintz and Parker 2006) conducted a review of historic data for commercial vessels, coastal shipping patterns, and Navy vessels along the east and west coasts." What would this be for Guam? Since this is proposed in Guam you should be using numbers for Guam and the CNMI. 3.0.5.2.3.3. "Certain devices do not have a realistic potential to strike living marine resources because they either move slowly through the water column (e.g., most unmanned undersurface vehicles) or are closely monitored by observers manning the towing platform (e.g., most towed devices)." How does moving slowly prevent you from having a realistic potential to strike a living marine resource? Are these vehicles controlled by someone that can see and avoid living marine resources? And how slow is "slowly moving"? 3.1.3.1.2. "When it functions properly (i.e., complete detonation), 99.997 percent of the explosive is converted to inorganic compounds." How often does it not function properly? 3.8.3.1. "Sonar is not used in areas where corals proposed for ESA listing are known to occur." Was it not stated that Sonar would be used port-side? There may be corals under the proposed listing which are present in Apra harbor and inner Apra harbor. Need to check on that, before you can make this statement. "Because research on the consequences of exposing marine invertebrates to anthropogenic sounds is limited, qualitative analyses described below were conducted to determine the effects of the following acoustic stressors on marine invertebrates within the Study Area:….." Quantitative analyses still need to be conducted before you can say for sure what the effects are. 3.8.3.1.1.1. "There is no evidence that corals or coral larvae are sensitive to distant non-impulse sounds." Is there evidence that they aren't sensitive to distant non-impulse sounds? Just because there is no evidence does not necessarily mean you can take that for fact.

Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

D. Mitchell	Submitted via Website	As a semi-retired, Pulitzer Prize-winning newspaper editor and publisher, I am fairly conversant with government policy and environmental issues, and I find the proposed Mariana Islands training-and-testing proposal to be an ethical and ecological disaster. If Pagan and other Mariana islands, as well as the open ocean, were subjected to heavy bombing and artillery fire, the marine ecosystem could not ever recover. The proposal would violate NEPA and a host of US environmental-protection laws. If it were carried out, the United States in future years would have to hang its head in shame for having been so shortsighted. The permanent damage will be remembered as equivalent to the mindless destruction of the ancient world's Great Library of Alexandria. The environmental damage certainly will not make any of us proud to be Americans. Rather, it will reinforce the belief of domestic terrorists and our enemies that anti-US violence may on occasion be warranted. In short, the proposed training and testing site will make this country less safe.
M. Moniz	Submitted via Website	I do not support any military exercises in the CNMI. Unless the Feds are willing to pay for COFA migrants to get adequate health care and social services for the health problems and social disparity that were caused by them being displaced by the US, then no way. Enough already.
S. Murphy	Submitted via Website	No action. I do not want to see military training continued in the Marianas. Please find a place in the US mainland to practice war.
J. Nangauta	Submitted via Website	Håfa Adai ginen Guåhan, AHE! NO! I do not agree or accept training in the Mariåna Islands! Not the current training happening, nor the proposed action to use sonar, guns and munitions in the ocean, land, and air that surounds our islands. We must find ways to sustain our future generations of the WORLD without war games and violence that furthur degrade the earth and all living beings. We are the earth. The health of the land is the health of the people, ALL PEOPLE. Seek Peace, understanding & forgiveness with all mankind, we all bleed the same blood. We are ONE, With the earth, the sun, the moon, the skies, the animals, and the plants. It is obvious that the US Gov. intends to spread out across the globe, putfabot!(please) be a better stewart to the earth we live on. The US is the leading country of the world contributing to the nuclear contamination of the Environment along side Japan in recent times regarding Fukushima. No living being is spared from the ails of nuclear contamination. If we could possibly prevent such degradation to our homeland by standing up against this MITT proposal then we must do all we can to protect the Mariånas from furthur destruction. Its our duty to our sainas (ancestors) and the people who come before, tao tao mo'na.

		Allow indigenous people rights to live free on their homelands and decide their own fate. You want to be a good humanitarian and help the world as you like to portray then please! Clean the sites up from previous war activities on our islands and the islands that surround us! Guam - Cocos Lagoon, Anderson Airforce Base, Barrigada Storage Facility, Sumay, GabGab, Tinian, FDM, Bikini Atoll, Kwajalen Atoll, Enewetak, Belau. Our islands are also being protected by the Common Wealth Constitution in Article XIV NATURAL RESOURCES: "Section 1: Marine Resources. The marine resources in waters off the coast of the Commonwealth over which the Commonwealth now or hereafter may have any jurisdiction under United States law shall be managed, controlled, protected and preserved by the legislature for the benefit of the people. Source: Original provision, unaltered (ratified 1977, effective 1978). Section 2: Uninhabited Islands. The island of Managaha shall be maintained as an uninhabited place and used only for cultural and recreational purposes. The islands of Maug, Uracas, Asuncion, Guguan and other islands specified by law shall be maintained as uninhabited places and used only for the preservation and protection of natural resources, including but not limited to bird, wildlife and plant species. Source: Original provision (ratified 1977, effective 1978); amended by Second Const. Conv. Amend. 37 (1985). Section 3: Places and Things of Cultural and Historical Significance. Places of importance to the culture, traditions and history of the people of the Northern Mariana Islands shall be protected and preserved and public access to these places shall be maintained as provided by law. Artifacts and other things of cultural or historical significance shall be protected, preserved and maintained in the Commonwealth as provided by law. Source: Original provision, unaltered (ratified 1977, effective 1978)." Our home is a sacred place to us where the plants and fish and birds have sustained our people for these THOUSANDS of years.DO NOT CONTINUE TO DESTROY THE SACREDNESS OF OUR ISLANDS. Do good and serve ALL equivalently.
F. Naputi	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.

Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

J. Newland	Submitted via Website	To Whom It May Concern: I am writing this comment in order to put forth my recommendation that the United States Government, and the Department of the Navy, choose the "no action alternative" in regards to the EIS/OEIS generated for the Mariana Islands Training and Testing (MITT) Study Area. In my opinion the U.S. Navy should figure a way in which to work within the already existing MITT Site, the largest Department of Defense training site in the world. The Department of Defense manages approximately 29 million acres, it seems that there would be a considerable amount of land that could be used in lieu of the Mariana Islands, areas of considerable ecological and social value. As a combat veteran myself, I do understand the need for a force to maintain a readiness level that includes job proficiency through real-life training scenarios, as well as the necessity to test and develop new weaponry. As a university senior studying environmental science and biology, I feel there is considerable reason for the Navy to modify its stance in regards to the Migratory Bird Treaty Act and the Marine Mammal Protection Act. During my time in school I have taken many relevant courses in environmental science, ecology, biology, conservation and environmental impact statement evaluation, to name a few. I believe it is in the best interest of the United States military to pursue a more circumspect attitude towards the environment and especially towards delicate and complex ecosystems such as those found in the Mariana Island region. Signed Jesse Newland jnewlan2@msudenver.edu
G. Nucum (Okkodo High School Fish Club [Marine Biology])	Submitted via Website	Expanded MITT activities would critically disturb the already delicate balance between our environmental and military interests. The negative impact on marine life and habitats is too great a price to pay for what relatively less valuable benefit gained from needlessly expanding a military operation already present in the area.
C. Onedera	Submitted via Website	I do not support the expansion of the MIRC beyond its current footprint nor do I support an increase in the military training in this region.

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4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [✓] NO [ ] YES

Name: Sharlene T Ooka

Organization/Affiliation:

Address:* 106 Bernardo Road

City, State, Zip Code: Yona, Guam 96915

Comments: "I do not support the proposed Mariana Islands Training and Testing activities. I recommend the NO Action Alternative. However, my recommendation of this alternative does not mean I support the ongoing training activities already occuring in the Mariana Islands. The Navy's training and Testing activities pose severe threats to our Islands.

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Name: SHARENA OOKA

Organization/Affiliation:

Address:* 106 BERNARDO ROAD

City, State, Zip Code: YONA, GUAM 96915

Comments: I do not support the proposed Mariana Islands training and testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.

Visit **www.MITT-EIS.com** for project information.

*Provide your mailing address to receive future notices about the Mariana Islands Training and Testing EIS/OEIS.

J. Palma-Glennie	Submitted via Website	Aloha, It's brought me to tears to hear that the United States of America, in 2013, would even consider using a place as spectacular as the Mariana Islands for weapons training. As we say in Hawai`i, auwe (shame and sadness). Because the Mariana Islands, located in the western Pacific, are nowhere near as renowned as the Galapagos, the U.S. military has been conducting full-spectrum live-fire training on the island of Farallon de Medinilla, as well as over a half-million square miles of the open Pacific, wreaking death and suffering to all marine life. to rename this bioregion the "Mariana Islands Range Complex" (MIRC) is callous beyond belief. Since the imposition of the MIRC in 2010, Farallon de Medinilla, once teeming with amazing sea life and rare migratory birds, has been bombed and disfigured. thank you for consideration of my views on this most critical matter. please stop this travesty. please stop the militarization of the pacific and our world. what will be left for our children's children to sustain their lives environmentally, culturally, and spiritually.
S. Palomo	Submitted via Website	I am opposed to any more military activities in the Mariana Islands. The Mariana Islands has a history and culture of over 4,000 years. The island chain is becoming a militarized zone with added restrictions to the waters surrounding the island chain. The United Nation's Declaration of Indigenous People's Rights must be adhered to, including the indigenous people of the Mariana Islands.
J. Pangelinan	Submitted via Website	The footprint of the United States Military in our region is already substantial. There is no need for a testing zone this large in such a pristine environment. Undersea and on land live fire is unnecessary here in the Marianas when there are already existing facilities in the nation that are prepared to handle these activities. In other words, Keep the bombs out of our back yard.
J. Patzek	Submitted via Website	This is insanity. Why would you risk the lives of all the plants and animals for unnecessary military training?! What does this teach our children? That lying absolute waste to Mother Nature is OK in any circumstance? Please adhere to the environmental laws that were put in place. Conserve the little amount of pristine habitat that we have left on Earth.
R. Pedano	Submitted via Website	"I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands."

P. Pelayo	Submitted via Website	From what I can understand, the test will affect animals such as the turtles. My question is there a back up plan to replenish the turtles that will potentially get killed from the testing?
M. Pena	Submitted via Website	Would there be any protection for the marine birds and invertebrates that are not protected under the Endangered Species Act?
N. Pereda	Submitted via Website	Hafa adai, I am against the DoD's plans to expand the MIRC and MITT. Issues and facts: 1. The MIRC is the largest DOD range in the world. It spans 501,873 nautical miles of ocean and is 3 times larger than California. 2. The MITT would nearly double the ocean covered under the MIRC, expanding the range of DOD training to 984,469 square nautical miles. The MITT would be larger than the states of Washington, Oregon, California, Idaho, Nevada, Arizona, Montana, and New Mexico combined. Comment: If MIRC is already the largest DOD range in the world there should be no reason to expand. Unless DoD presents legitimate reasons for what appears to be just want of excess or just plain greedy. Should DoD need more space for training it should consider a large portion of the US's mass continent waters first. 3. Under the MIRC/MITT, DOD will bomb Farallon de Medinilla, blow up mines under water and perform sonar training. 4.The use of sonar training will result in permanent hearing loss for up to 59 whales and dolphins per year. (MITT, Vol. 1, p. 3.4-114) Comment: These activities will destroy what is a pristine and unique ecosystem and an important part of the history of the Mariana Islands. The US government has been a forerunner for establishing wildlife and marine preserves as sanctuaries and for the protection of unique species, especially on Guam. It is contradictory for the US's DoD to continue with these plans or to have even suggested it. This may seem like a trivial matter to the DoD (who live far away in comfort) but if the northern islands ecosystem suffers it will affect the rest of us as well. So please do not expand the training grounds any further. Saina ma'ase, nathalie
F. Perez	Submitted via Website	The military should really think about practicing in a different way. The live ammunition is really going to affect our sea life. Lots of dolphins and whales are going to be killed in the process and Guam doesn't always see a lot of them. Even if they only lose their hearing, they need their hearing to survive. This is going to affect their ability to live. I'm sure there's a safer way to approach this. It's imperative that our military is training, but it's also important that we protect our sea life.

Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

J. Perez	Submitted via Website	I think readiness and training is essential to ensure military forces are ready for a host of low to high end contingencies that may arise in Northeast Asia and the East Asia regions. I do think that active sonar is also needed to search for diesel powered submarines owned by the Chinese military that can hide in the littorals. I am concerned about three things. First, small arms and other kinds of firing ranges are being proposed on Guam that will introduce spent rounds into the surround areas that may be deemed for live fire range use. Who is going to clean up and remediate the rounds that have been fired from land and introduced into the surrounding waters off of Andersen? I think the Navy E&I community and the Marine Corps presence to be placed on Guam must establish and execute on a remediation program that extracts these man made objects from the surrounding sea areas. I have not heard of another area in the U.S. that allows for this kind of training to take place. Also, I am concerned about sonar activities and the impacts that this will have towards marine life. I do not think sonar exercises should take place anywhere near the MIRC because it will result in whales and other marine creatures to beach on Guam's reefs. This has happened more than a couple of times over the years. I recommend that sonar activities take place hundreds of miles of the MIRC coastal areas and that they be strictly enforced in terms of impacts to the surrounding marine environment. My last comment is that military readiness training, research and testing of new vessels such as the LCS, VA class submarines, SEAL UDV's and other kinds of military assets should compete or impinge upon the activities that local fisherman must embark upon to go fishing throughout the area designated by the MIRC and the MITT area. The local fishing community should not be unduly restricted to their livelihoods because of an overwhelming military readiness requirement. There is plenty of room for everyone to use the surrounding waters that comprise the MIRC and the MITT. I understand the need for this training area but I do not want to see this pristine area become a military training area if it will compromise the marine environment and impinge on local needs to use the surrounding waters and to prevent the introduction of spent rounds into an otherwise clean area. Please take into consideration these comments for planning purposes.

December 8, 2013

Naval Facilities Engineering Command, Pacific
Attention: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Dear Sir or Madam:

I am writing in opposition to the proposed expansion of training activities outlined in the Mariana Islands Training and Testing (MITT) EIS. The Northern Mariana Islands host endangered birds, which are living in a pristine habitat. Many of these birds once existed on Guam, but they have become extinct since the 1980s. The cause of their extinction is the importation of the Brown tree snake through military planes. It is essential to point out that the military training proposed in the MITT activities will not only put our native wildlife in harm's way but it will accelerate the rate of harm of our land and marine species. Expansion of the Mariana Island Range Complex to 984,469 square nautical miles, use of sonar at levels that will cause permanent hearing loss to our whales and dolphins, bombing of Farallon de Medinilla and other unknown target sites within the proposed MITT areas are a huge assault on nature that calls this area home and the ecosystem that supports life. The proposed activities are in direct violation of the Endangered Species Act and Marine Mammal Protection Act.

Secondly, the effects of technology on human life have not been adequately examined. The lack of transparency once put into effect will create the largest human experiment, in which the residents in the adjacent Pacific islands will be the unwitting and uninformed subjects. This is in direct violation of 50 USC S1520a and other laws prohibiting human experimentation.

Thirdly, the disproportionate burden placed on Pacific islanders for the protection of the United States proper is an environmental injustice. Moreover, this proposal is counter to the mission of the United States as a protectorate of Guam, as defined by the United Nations. The United Nations Charter states that the United States of America, as the administering power for Guam, is to protect "the interests of those inhabitants of the territories whose peoples have not yet attained a full measure of self-government as paramount." The UN Resolution 1514 further states "any attempt at partial or total disruption of the national unity and territorial integrity of a country is incompatible with the purposes and principles of the Charter of the United Nations." The proposed MITT activities are a disruption of our natural resources that we depend upon culturally, economically, and environmentally.

I appreciate that you take these concerns under serious consideration. I intend to follow-up with any of my grave concerns regarding the proposals under the Mariana Islands Testing and Training and the Mariana Islands Range Complex.

Sincerely,

Sabina Perez

Sabina Perez
Guam Resident

Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

Z. Perez	Submitted via Website	Though I fully understand the need for the MITT, as a Chamorro I must state my objection to the use of our most precious natural resource. More specific is the effect the MITT will have on our oceans marine vegetation (3.7). First is why were only six major taxonomic groups studied. There must surely be additional vegetation that will also be affected by this training area. Section 3.7.1 states that "Essential Fish Habitat (EFH) under the Magnuson-Stevens Fishery Conservation and Management Act are described in the Essential Fish Habitat Assessment (EFHA)". Why was a copy of this EFHA not provided with the EIS so we can further study the effects on all vegetation. Section 3.7.2 states that "Marine ecosystems depend almost entirely on the energy produced by marine vegetation through photosynthesis, which is the transformation of the sun's energy into chemical energy. In the lighted surface waters of the open ocean and coastal waters, marine algae and flowering plants provide oxygen, food, and habitat for many organisms in addition to forming the base of the marine food web". If this in fact true then how can I as a Chamorro allow the approval of this training area. 3.7.3.1.1.2 Alternative 1, Testing Activities, clearly states that "underwater explosions conducted for testing activities may injure or kill individual marine plants". It also speaks of the impacts of explosions that exceed natural disturbance intensities may uproot plants and damage substrates, which would delay recovery. As I continue to read through the section I notice the phrase "recovery is likely", will using areas already affected by the training techniques truly minimize the impact on Marine Vegetation or is this something we are hoping for?

Draft EIS/OEIS Comment Form

Mariana Islands Training and Testing Environmental Impact Statement / Overseas Environmental Impact Statement

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You may submit your comments by:
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2) Mailing this form to:

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Attention: MITT EIS/OEIS Project Manager
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

3) Completing the online comment form at **www.MITT-EIS.com**.

4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [√] NO [ ] YES

Name: Kimberly Pinaula

Organization/Affiliation: University of Guam Student

Address:* PO Box 5367 Mangilao,

City, State, Zip Code: Mangilao, GU 96923

Comments: The presenters were able to provide very useful info on their cause, however, I still feel like the testing of new weapons, technologies, equipment could still very much harm our islands. I understand that in order for our islands to be protected, the US military should be able to utilize their equipment effectively. I just wish our islands didn't have to be exposed to any more test like these. Our islands suffered so much over several decades and if in any way the community agrees to the test, I just hope that the beauty of islands are not affected.

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Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

J. Pineda (Electronic)	Within in the MITT Statement booklet that was passed out, I noticed the following, "Training and Testing of Explosives". Does that mean that Biochemical weapons will be used? If so, to what extent? With that, under the Environmental Resources section "...activities could result in local, short and long-term changes..." seem to be very prevalent in all the paragraphs. Considering that the marine life on Guam is very fragile, even if it was some how proven, "...chemical, physical or biological changes would not be detectable; would be below applicable standards..." what standards is being followed? Considering that history has proven that such things that were, "...not...detectable; would be below applicable" have proven in the future that it was the reason for such a breakdown (i.e. agent orange). Are alternatives set in place if it were to arise or will a mollified action be used?
L. Puyat (Electronic)	I oppose military plans to militarize our islands. We have lived on our islands for thousands of years and am against destruction and degradation of the environment of our islands. We want to preserve the land and sea for future generations. I advocate for the no action alternative and oppose the current testing and training in the Marianas. #OurIslandsAreSacred #SavePaganIsland

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4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [ ] NO [ ] YES

Name: Ashley Ruchacho

Organization/Affiliation:

Address:* P.O. Box 867 ~~Hagatna GU~~

City, State, Zip Code: Hagatna GU 96932

Comments: How do you plan to recreate what you have destroyed on FSM? ~~The Island of Guam~~ is How are the marine animals being saved? I disagree with ~~the~~ expanding the military training area.

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4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [X] NO [ ] YES

Name: Nichole Quintanilla

Organization/Affiliation:

Address:* P.O. Box 1033 Hagåtna

City, State, Zip Code: Hagåtña Guam 96932

Comments: I do not support the proposed Mariana Islands Training and Testing activities. I [redacted] recommend the "No Action Alternative." However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands." If we allow ANYBODY to use our homes →

Visit **www.MITT-EIS.com** for project information.

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B. Ramos	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.
B. Ramos	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.
K. Reyes	Submitted via Website	I don't think that the Navy should employ the use of high frequency sonar testing or long-range sonar in the area which was recently designated as a national marine monument, nor in the waters around these islands unless they deem that there are no problematic effects of the sonar to the marine mammals, especially cetaceans, and no harmful effects to other organisms who may depend upon sonar for their livelihood. It is well-known that cetaceans and dolphins have been washing up on the shores of these islands recently much more than they did in the past, many are already dead when they do. Even recently, there have been dead false killer whales (an endangered species and protected by the federal government) washing up in Hawaii where there is also military sonar being used, and in California. I don't think this is a coincidence. These animals cannot be guinea pigs where we do the testing first and see later if they die. They must be protected, and I am sure our navy can use sonar in the parts of the world where there are no endangered cetaceans passing through or making their home. This is not a ridiculous request coming from a native to these islands who has an intense interest and passion in the marine life surrounding my islands. My future career depends on these animals being taken care of, and in studying these organisms and I don't want to not be able to because of a degradation of the food chain from it being disrupted by top predators being killed by sonar. Thank you.

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4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [✓] NO [ ] YES

Name: Maia Pauline Reyes

Organization/Affiliation:

Address:*

City, State, Zip Code:

Comments: The Mariana Islands Training and Testing ~~as~~ will not be supported by me. I acknowledge that my recommendation of "No Action Alternative" does not exactly mean that I support the training activities already happening in the Marianas. Nevertheless, I believe that the possible training and testing of the Navy ~~as~~ may pose severe threats to our islands.

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Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

R. Ridge	Submitted via Website	As an ecologist, I would respectfully urge you not to devastate any of the Mariana Islands for training purposes. The diversity and richness of natural life there should not be subject to warlike activities. In the strongest terms, I urge you to protect and not destroy this environment. Sincerely, Russell Ridge Retired Professor of Biology College of Marin, Kentfield, CA
C. Roane	Submitted via Website	The expansion of the training in the Marianas is horrifying. Navy sonar disrupts marine animal foraging, causes hearing loss, and fatally injures whales. The Navy itself estimates that expanded training activities would cause 59 whales and dolphins to suffer permanent hearing damage every year. Other impacts include those on sea turtles, fish, marine habitat, and the Mariana Trench Marine National Monument. Environmental activists say the exercises would violate the National Environmental Policy Act and other US environmental laws. In addition, Pagan is culturally important, anthropologically important, says Dr. Michael Hadfield, a zoology professor at the University of Hawaii. “[And] when the military takes an island for live-fire training, they destroy it.” I'm with Dr. Hadfield and respectfully request that the US Navy stops this wrong-headed expansion before more life and cultural heritage is needlessly destroyed.
N. Sanchez	Submitted via Website	As a native resident, I am deeply concerned about the terminal damage the build-up will have on my environment. As a tropical island, Guam is home to many different species of sea life. Tourism is one of Guam's most vital sources of income and many tourists come to Guam to experience our oceans. Section 3.5 states "the use of sonar and other active acoustic sources may affect and is likely to adversely affect ESA- listed green, hawksbill, loggerhead, and leatherback sea turtles." Also, section 3.93.1.1.1 states, " the shock wave from an underwater explosive is lethal to fish at close range, causing massive organ and tissue damage and internal bleeding." Then again in section 3.7, it states, "underwater explosives could affect marine vegetation by destroying individual plaints or damaging parts of plants." This will have a negative impact on our tourism industry thus a negative impact on our economy.

Draft EIS/OEIS Comment Form

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4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [X] NO ~~[X] YES~~ F.S.

Name: Fu'una Sanz

Organization/Affiliation: University of Guam

Address:* P.O. Box 22643 Hagatna, GU 96932

City, State, Zip Code:

Comments: I am against the proposed Mariana Islands Training & Testing activities. I prefer the 'No Action Alternative.' However, my recommendation of this alternative doesn't mean I support the ongoing training activities already occuring in my home, the Mariana Islands. The Navy's training & testing activities endanger & threat our beautiful islands.

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D. Searway	Submitted via Website	I am very sorry to hear all of this! It seems the story is always the same with a dis regard for the natural world,animals, other life forms and the original peoples.Our new base on an island off from south Korea is another tragic example.
K. Seas	Submitted via Website	I oppose any additional military testing/bombing/etc. in the Mariana Islands vicinity. As someone who lived there for two years and have travelled the world extensively, I understand the unique beauty of the area, and its untouched nature. If the military needs more area for testing/bombing, I suggest they find someplace already damaged upon which to bomb/test, rather than destroy what little untouched beauty is left on the earth.
F. lksjflksj sfkjlsfjlksjf	Submitted via Website	I advocate for the no action alternative and oppose the current training and testing in the Marianas.

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4) Do you wish to withhold your name and address from public review or from disclosure under the Freedom of Information Act (FOIA)? [ ] NO [ ] YES

Name: Kiara M. Sinlao

Organization/Affiliation: AOG

Address:* 150 Rizal St.

City, State, Zip Code: Nes, Dededo, 96929

Comments: The topic that interested me was how the sonar helps out the U.S. with detecting enemy ships, however it affects the animals which harm them because of the sound waves. which is considered one of the contributing factors as to why animals are ~~affect~~ harmed.

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Against the use of large explosive device at Farallon de Medinilla Target Range (FDM)

With imaging and surveillance technology available today, it should not be necessary to use heavy ordinance to assess the effectiveness of a pilot/bombardier or mariner's ability to place a bomb or missile on the target. It is not necessary to have a "Big Boom" to know whether ordinance has been skillfully placed on target or fallen widely from their intended target.

From speaking with Dept. of Fish and Wildlife personnel, I understand FDM is home to as many as thirty-five endangered megapode birds, with large seabird colonies as well. The island is only 200 to 300 square acres. Detonating a single 900kg bomb, on this small island could destroy most of the terrestrial life on the island, assuming a 280M radius of lethality.

As far as small arms fire, grenades, and small <1kg explosive devices, what care can be taken to minimize disruption to the terrestrial life there? Are the soldiers and air-assault teams informed of the endangered species on the island? Policy and procedures should include minimization of impacts outside of the immediate mission location on FDM.

Given that environmentalists and politicians have closed important training ranges at Kaho'olawe and Vieques Islands, doesn't it behoove the DOD policy makers not to draw the ire of these constituents to FDM?

Please explain to the public why large heavy ordinance must be used on FDM, instead of missiles or other bombs with inert or dummy warheads?

If it is possible, to change the ordinance payloads, why not do it? At least give the public the reason why large explosive payloads must be used instead of inert warheads and bombs, with the generalized "military readiness" argument.

The DOD officials will encourage acts of political pressure, legal challenges, and civil disobedience, if they will not modify their practices. Think real hard and remember what happened with Kaho'olawe and Vieques ranges, and other mainland U.S. and off-shore training grounds--don't lose FDM due to recklessness.

Do the right thing, and keep the explosive sizes to a minimum.

Submitted:

Arthur Sondheim

K. Suarez	Submitted via Website	I prefer the NO action alternative
L. Suidan	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.
A. Suni	Submitted via Website	Please stop this project! I have friends who live on the Island of Saipan who will be extremely negatively impacted by this project. Please take these tests and trainings elsewhere where they will not negatively impact the inhabitants of these Islands.
S. Symes	Submitted via Website	I am totally AGAINST MITT especially as how the MITT would violate the National Environmental Policy Act and other environmental laws passed by Congress!!!! PLEASE do NOT continue with this, you are violating the very laws that were passed to SAVE the environment in this incredible, beautiful bio-diverse place!!!
A. Taimanglo	Submitted via Website	Simply put, I do not support increased military testing, nor do I support the 'No Action' alternative. It is evident that there will be severe consequences that will negatively affect our environment, animals and our people. As the draft states, "The shock wave from an underwater explosion is lethal to fish at close range, causing massive organ and tissue damage and internal bleeding"(3.9.3.1.1.1) Another point outlined in the draft states "….the use of sonar and other active acoustic sources may affect and is likely to affect ESA- listed green, hawksbill, loggerhead, and leatherback sea turtles" (3.5) The list of potential threats goes on and the cons seem to outweigh the pros. The objective of the proposed action is to deter aggression and maintain freedom of the seas. The irony of this objective is that the agenda of the proposed action is grounded in aggression and increasing military testing in within our region would rob our environment, animals and people of this very freedom you seek to maintain. I would hate to see the depletion of our islands all because of a theoretical war that you must prepare for. Please consider the injustices that are outlined in the draft and how the people who call these islands home will be affected. With extreme sincerity, please do not sever our connection with the sea. I hope the sanctity of our islands will take precedence over the

		explosives, sonar and contaminants meant to sustain our freedom. Please do not destroy my home. Source: Navy Facilities Engineering Command, MITT EIS/OEIS Project Manager. (2013). Mariana islands training and testing activities draft environmental impact statement/overseas environmental impact st a tem e n t. Retrieved from website: http://mitt-eis.com/Portals/MITTEIS/files/draft_eis/MITT DEIS_v4_0.1a_Title_Page-Inside_Volume_I_4 September 2013.pdf
L. Taitano	Submitted via Website	Please leave our Islands and Ocean alone! We already have issues with our environment---why add to it by blowing up mines underwater and performing sonar training. We don't plan to go anywhere else---this is our island and we will find ways to protect it.
S. Teulilo	Submitted via Website	Thank you for your time, I believe you all know what the right decision is.
M. Teulilo	Submitted via Website	Our Islands are sacred and we do not need anymore military bases. Save Pagan!! GIVE US BACK OUR ISLANDS!!!
M. Thielk	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.'
A. Thorpe	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands

Written Comment(s) on MITT Draft Environmental Impact Statement
September 2013

E. Toves	Submitted via Website	I understand that testing new technology or giving proper training is appropriate in order for the military to be properly prepared for various types of situations. However, as shown by information displayed on the MITT website, "The Mariana Islands are an ideal setting for military training and testing activities because of their location in the Indo-Asia-Pacific region. The islands and the surrounding air and sea space have provided the United States (U.S.) military with a safe training and testing environment for decades." If the MIRC already provides "a safe training and testing environment," then there is no need to provide more space to increase safety. If expansion is to increase productivity of the MIRC, a description of the MIRC's attributes, shown by the website, "Expansive airspace, surface sea space, and underwater sea space," states that the space of the MIRC is "expansive". If the space is expansive, then why would it need to be increased? Clearly, the expansive space is not being used to optimal levels. Also, if losses can be estimated, as shown by this statement, "The use of sonar training will result in permanent hearing loss for up to 59 whales and dolphins per year." (MITT, Vol. 1, p.3.4-144), then why can't it be prevented. New technology is supposed to be tested in the area, but if technology can't even prevent negative impacts, what good can the new technology even do?
L. Toves	Submitted via Website	First of all, I am against the use of active sonar in our waters. According to the Scientific American, sound waves can travel for hundreds of miles under water, and can retain an intensity of 140 decibels as far as 300 miles from their source (John Slocum). If these sonar activities can kill our marine life, what more our divers? Divers exposed to high levels of underwater sound can suffer from dizziness, hearing damage or other injuries to other sensitive organs, depending on the frequency and intensity of the sound according, to The Diving Medical Advisory Committee. Second of all, I do not agree with the military taking away our land just so they can continue their training and testing. Our islands are sacred! They are slowly taking away what was once our identity. The military is supposed to do what's right not what's wrong! I feel as if they do not care about our island and our people and how this will affect the people of these islands.

D. Tugaga	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.
D. Tugaga	Submitted via Website	I do not support the militarization of the Mariana/Micronesian Islands! Our Islands are Sacred, and we are still living. Our islands are our homelands, where our stories are held, our ancestors are buried, our way of life is valued and practiced. Please help us take care of our homes, and not destroy it. We are still alive, and so will our future generations. Please help us help our people. Only in solidarity can we honor our communities and our cultures, not destruction.
M. Tuncap	Submitted via Website	My name is Michael Tuncap and I was born in Tamuning in 1979. My father served in the US Air Force for 17 years and 19 years in the US Postal Service. My mother served as a para educator in public schools in Guam and Washington state for 36 years. I have served as a teacher and counselor for public colleges for 15 years. We are proud to be Chamorro from the island of Guam and we speak out against the proposal to take over Pagan. I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.
P. Turner	Submitted via Website	I'm submitting this comment to ask that the Pentagon and specifically the Navy, not do live fire exercises in Marianas Islands. While I understand the military's needs to do live fire exercises, the types of exercises that you intend to conduct in the Marianas Islands can be done in less pristine areas. There are many places throughout the U.S. and its territories that are significantly less pristine than the Marianas Islands. Why not choose those places. Clearly we have Air Forces weapons ranges that are within reach of carrier launch aircraft. Why do you need an island? What potential foe for the foreseeable future is an island nation?
D. Vice	Submitted via Website	The continued growth of DoD activities in the mariana islands is placing considerable strain upon natural resources without adequate analysis of the cumulative effects of said growth. While each EIS developed is presented to the public as a stand alone project, the simple fact remains that it is virtually impossible for anyone to make any real analysis of the overall impacts to the region, as the documents generated are simply too cumbersome for anyone to fully understand, and they consistently fail to connect the pieces into a single bigger picture for DoD actions in the region - by failing to consolidate all reasonably foreseeable actions into single NEPA documents, DoD is failing in a fundamental principle of federal environmental law. This EIS fails (again) to provide any real

		analysis of the impacts DoD activities have upon sport fishing in the Marianas. Significant important chunks of sea mounts, banks and offshore ocean environments will be restricted under the preferred alternative, and coupled with the pending Guam Build-Up SEIS, where Ritidian Point will be considered the preferred firing range alternative, will even further erode the ability of fishermen in the region to pursue their legal activities in an ocean not owned by the DoD. This is simply unacceptable from the fishing community in Guam, and there must be greater consideration (and concessions) from DoD when analyzing the significant impacts that have so far been dismissed by those writing the EIS and those handling comments in public meetings.
D. Vice	Submitted via Website	The continued growth of DoD's footprint in the Marianas is being pushed without any real consideration of the cumulative effect on the region's natural resources. By generating volume after volume of essentially unreadable NEPA documents that are simply too overwhelming in verbage but lacking in analysis, DoD has failed to 1) Adequate assess the reasonably foreseeable actions that should be incorporated into every NEPA document, 2) link connected projects, which is contrary to NEPA (compartmentalizing), and 3) Put together any real analysis which could give the public an understanding of what the TOTAL impact of DoD will be on Guam and the Northern Marianas. In this document, DoD has not adequately assessed the real impacts to local fisherman, as large tracts of important fishing grounds will become restricted, which is unacceptable to local fisherman, especially given the immense amount of open ocean available to DoD in surrounding waters that could be used without significantly impacting fishermen. Public comments were delivered by multiple individuals in earlier scoping meetings, and they appear to have been completely ignored. The potential loss of important offshore fishing sites, coupled with the forthcoming SEIS for the Guam Build-Up, which will identify Ritidian Point as a SDZ for the firing range, will further erode the local fishing communities ability to engage in lawful activities in an ocean not owned by the DoD. This is simply not acceptable, and DoD must do a better job analyzing the impacts of their proposed actions, assess the TOTAL impacts under all proposed, past, and foreseeable projects, and make considerations (concessions) to the fishing public that will not restrict access to important fishing areas.
K. Wang	Submitted via Website	I do not support the proposed Mariana Islands training and testing activities. I recommend the "no action alternative." However my recommendation of this alternative does not mean I support the ongoing training activities already occuring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our Islands. Please note there are histories, cultures and people living on these islands and are their dear home and do not deserve to be constantly bombarded by these military pollution. Would you like it if another civilization were to do the same behind your backyard?

L. Wang	Submitted via Website	I am of the strong opinion that as a nation we cannot continue to undermine the ecologies of the world system even with items deemed to be in the strategic interest of this country. The things that we do in the name of strategic interests are proving to undermine our strategic interests. Thank you, Larry Wang
L. Wang	Submitted via Website	I hold the strong belief that we as a nation cannot continue to undermine the ecologies of this planet, even if these actions are deemed to be in the strategic interest of our country. I would go further to say that much of what we do in the belief that we are advancing our strategic interests actually are undermining those interests. Thank you
A. Whaley	Submitted via Website	I do not support the proposed Mariana Islands Training and Testing activities. I recommend the 'No Action Alternative.' However, my recommendation of this alternative does not mean I support the ongoing training activities already occurring in the Mariana Islands. The Navy's training and testing activities pose severe threats to our islands.
T. Williams (NY4whales)	Submitted via Website	The Mariana Islands represent one of the most ecologically rich locations on earth. Pristine waters, unbelievable beauty in the middle of the Pacific Ocean - including the Marianas Trench Marine National Monument - an abundance of marine life, make this an unforgettable place. Yet, since the US assumed control of the Marianas during World War II, the Navy has been systematically destroying this enchanting place. If the military is permitted to maintain these activities, it will continue to be labeled as the "worst enemy of the environment on the planet". GONE FOREVER: most of one island, the Farallon de Medilla has already been destroyed after live-fire testing and military bombing exercises, while further naval war games have scarred and damaged large areas of open ocean. Shockingly, the Navy now wants to double its training range to nearly one million square nautical miles - an area larger than Washington, Oregon, California, Idaho, Nevada, Arizona, Montana and New Mexico combined - despite not even knowing what marine life will be lost! Scientists are continually finding new species of marine life, but in the Marianas Islands Training and Testing area, there will be nothing for scientists to investigate, judging from the past record of military destruction of its training areas (just consider Vieques, Puerto Rico). How is it that the Navy can claim that its activities, such as active sonar, will do no harm to marine life? The Navy's own testing (Scientific Research Program) found that attenuation of low frequency active sonar falls only to 150 dB at 300 miles from the source (240 dB). The ridiculous assertion that personnel will be posted as whale-lookouts represents a facetious attempt to whitewash the destructive capacity of this sonar. Who can see beyond 1 km at night? Who can see beyond less than 1 km in bad weather

		in day or night? Who will see whales 300 miles away? Scientists and biologists know what the results are when whales and dolphins are hit with 150 dB of active LF Sonar, yet the navy refuses to acknowledge this harm. Sonar will be operating 24 hours a day; when will the Navy face itself, face the assault they are committing against marine organisms, fish, and WHALES - not enemies of the US! When has the Navy actually sent planes overhead to monitor for whales during sonar exercises? No one in their right minds thinks they ever did, although it is purported part of the "monitoring" plan. It is not easy to spot whales from a plane anyway when they can stay submerged for a half hour at a time! The continual bombing of beaches and coastal regions represents the ultimate destruction of these ecosystems, and all the life that depends on them, from corals to plankton to manatees and whales. It is absurd to think the Navy is acting in any manner except reckless, irresponsible and destructive. Pagan Island's inhabitants will likely be drive out, and its endangered species endemic only to this island will be predictably driven to extinction. There is no justification under God - or any other power - that gives the US military the right to do this. Military activities in this area are immoral, cruel, inhumane and unjustified. How many times has Mid or Low Frequency Active Sonars been used to intercept incoming threats to the US? The legacy of destruction is an assault on the people - indigenous and non-native - of this vast area, and indeed further incites a fierce and growing hatred toward the US for its irresponsibility toward those they consider "collateral damage" - the ecosystems, environment, economic resources and the PEOPLE of the military training ranges they are destroying. Let's not further this horrible distinction; let's not foster the anti-US sentiment abroad by this MITT destruction. Do not grant a Letter of Authorization or permit to "take" any marine life or act in violation of any of our current environmental laws: ESA, CZMA, MMPA, NEPA.
Warren Woodward	Submitted via Website	Leave the islands alone! You bomb and shoot up enough places already.
Simon Wu	Submitted via Website	I was informed that the DOD will bomb Farallon de Medinilla, blow up mines under water and perform sonar training. The use of sonar training will result in permanent hearing loss for up to 59 whales and dolphins per year. I want to add that, if they will perform sonar training and deafen a good sum of sea animals in the process. I am strongly against this sort of training. It is not moral in my opinion. There could even be endangered species that inhabit on these large ocean ranges. Inflicting hearing loss on sea animals will definitely lower their chance of survival.

Appendix F: Training and Testing Activities Matrices

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APPENDIX F TRAINING AND TESTING ACTIVITIES MATRICES

F.1 STRESSOR BY TRAINING ACTIVITY

Table F-1: Stressors by Training Activity

Mariana Islands Training Activity	Biological Resources															Physical Resources						Human Resources							
	Acoustic Stressors						Energy Stressors		Physical Stressors				Entanglement Stressors		Ingestion Stressors	Air Quality Stressors		Sediment and Water Quality Stressors											
	Sonar and other active acoustic sources	Explosives	Swimmer Defense airguns	Weapons firing, launch, and impact noise	Aircraft noise	Vessel noise	Electromagnetic Devices	Lasers	Aircraft and Aerial Targets	Vessels and in-water devices	Military Expended Materials	Seafloor Devices	Fiberoptic cables and guidance wires	Parachutes	Military Expended Materials	Criteria Air Pollutants	Hazardous Air Pollutants	Explosives and explosive byproducts	Metals	Chemicals other than explosives	Other Materials	Underwater Acoustics[1]	Physical Disturbance[1]	Accessibility[2]	Airborne Acoustics[2]	Physical Disturbance and Strike[2]	Underwater Energy[3]	In-Air Energy[3]	Physical Interactions[3]
ANTI-AIR WARFARE (AAW)																													
Air Combat Maneuver (ACM)					✓				✓							✓	✓		✓		✓				✓	✓			
Air Defense Exercise (ADEX) **					✓	✓			✓	✓						✓	✓								✓	✓			
Air Intercept Control (AIC)					✓				✓							✓	✓								✓	✓			
Gunnery Exercise (Air-to-Air) Medium-Caliber				✓	✓				✓		✓				✓	✓	✓		✓				✓	✓	✓	✓			✓
Missile Exercise (Air-to-Air)					✓	✓			✓		✓			✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓			✓
Gunnery Exercise (Surface-to-Air) Large-Caliber**				✓	✓	✓			✓	✓	✓				✓	✓	✓	✓	✓				✓	✓	✓	✓			✓
Gunnery Exercise (Surface-to-Air) Medium-Caliber**				✓	✓	✓			✓	✓	✓				✓	✓	✓	✓	✓				✓	✓	✓	✓			✓
Missile Exercise (Surface-to-Air)				✓		✓			✓	✓	✓				✓	✓	✓	✓	✓	✓			✓	✓	✓	✓			✓
STRIKE WARFARE (STW)																													
Bombing Exercise (Air-to-Ground)					✓				✓		✓					✓	✓		✓			✓	✓		✓				
Gunnery Exercise (Air-to-Ground)					✓				✓		✓					✓	✓		✓			✓	✓		✓				
Missile Exercise MISSILEX					✓	✓			✓		✓					✓	✓		✓			✓	✓		✓				
Combat Search and Rescue					✓				✓		✓														✓	✓			
AMPHIBIOUS WARFARE (AMW)																													
Naval Surface Fire Support Exercise – Land-Based Target					✓	✓				✓						✓	✓							✓	✓				✓
Amphibious Rehearsal, No Landing – Marine Air Ground Task Force**						✓			✓	✓						✓	✓						✓	✓		✓			✓
Amphibious Assault						✓			✓	✓						✓	✓						✓	✓		✓			✓
Amphibious Raid						✓				✓						✓	✓						✓	✓		✓			✓
Urban Warfare Training					✓												✓		✓	✓	✓				✓	✓			

Table F-1: Stressors by Training Activity (continued)

Mariana Islands Training Activity	Biological Resources															Physical Resources						Human Resources							
	Acoustic Stressors						Energy Stressors		Physical Stressors				Entanglement Stressors		Ingestion Stressors	Air Quality Stressors		Sediment and Water Quality Stressors											
	Sonar and other active acoustic sources	Explosives	Swimmer Defense airguns	Weapons firing, launch, and impact noise	Aircraft noise	Vessel noise	Electromagnetic Devices	Lasers	Aircraft and Aerial Targets	Vessels and in-water devices	Military Expended Materials	Seafloor Devices	Fiberoptic cables and guidance wires	Parachutes	Military Expended Materials	Criteria Air Pollutants	Hazardous Air Pollutants	Explosives and explosive byproducts	Metals	Chemicals other than explosives	Other Materials	Underwater Acoustics[1]	Physical Disturbance[1]	Accessibility[2]	Airborne Acoustics[2]	Physical Disturbance and Strike[2]	Underwater Energy[3]	In-Air Energy[3]	Physical Interactions[3]
AMPHIBIOUS WARFARE (AMW) (continued)																													
Noncombatant Evacuation Operation					✓	✓				✓							✓		✓	✓	✓				✓	✓			
Humanitarian Assistance/Disaster Relief Operations					✓	✓			✓	✓						✓	✓						✓	✓		✓			✓
Unmanned Aerial Vehicle – Intelligence, Surveillance, and Reconnaissance**					✓	✓										✓	✓	✓							✓				
ANTI-SURFACE WARFARE (ASUW)																													
Gunnery Exercise (Air-to-Surface) – Small-Caliber				✓	✓	✓			✓		✓				✓	✓	✓		✓				✓	✓	✓	✓			✓
Gunnery Exercise (Air-to-Surface) – Medium-Caliber		✓		✓	✓	✓			✓	✓	✓				✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓		✓
Missile Exercise (Air-to-Surface) Rocket**		✓		✓	✓	✓			✓	✓	✓				✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Missile Exercise (Air-to-Surface) MISSILEX		✓		✓	✓	✓		✓	✓	✓	✓				✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
Laser Targeting (at sea)						✓		✓	✓	✓						✓	✓							✓		✓		✓	✓
Bombing Exercise (Air-to-Surface)		✓		✓	✓	✓			✓		✓				✓	✓	✓	✓	✓			✓	✓	✓		✓	✓	✓	✓
Torpedo Exercise (Submarine-to-Surface)**	✓					✓				✓	✓		✓									✓	✓	✓		✓	✓		✓
Missile Exercise (Surface-to-Surface)**		✓				✓				✓	✓				✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓
Gunnery Exercise (Surface-to-Surface) Ship – Large-Caliber		✓				✓				✓	✓				✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓		✓
Gunnery Exercise (Surface-to-Surface) Ship – Small- and Medium-Caliber		✓				✓				✓	✓				✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓		✓
Sinking Exercise (SINKEX)		✓		✓	✓	✓			✓	✓	✓		✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓
Gunnery Exercise (Surface-to-Surface) Boat – Small- and Medium-Caliber**		✓		✓		✓				✓	✓				✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓		✓
Maritime Security Operations (MSO)		✓			✓	✓			✓	✓	✓				✓	✓	✓							✓	✓	✓			✓

Table F-1: Stressors by Training Activity (continued)

Mariana Islands Training Activity	Biological Resources															Physical Resources						Human Resources							
	Acoustic Stressors						Energy Stressors		Physical Stressors				Entanglement Stressors		Ingestion Stressors	Air Quality Stressors		Sediment and Water Quality Stressors											
	Sonar and other active acoustic sources	Explosives	Swimmer Defense airguns	Weapons firing, launch, and impact noise	Aircraft noise	Vessel noise	Electromagnetic Devices	Lasers	Aircraft and Aerial Targets	Vessels and in-water devices	Military Expended Materials	Seafloor Devices	Fiberoptic cables and guidance wires	Parachutes	Military Expended Materials	Criteria Air Pollutants	Hazardous Air Pollutants	Explosives and explosive byproducts	Metals	Chemicals other than explosives	Other Materials	Underwater Acoustics[1]	Physical Disturbance[1]	Accessibility[2]	Airborne Acoustics[2]	Physical Disturbance and Strike[2]	Underwater Energy[3]	In-Air Energy[3]	Physical Interactions [3]
ANTI-SUBMARINE WARFARE (ASW)																													
Tracking Exercise – Helicopter	✓				✓	✓			✓	✓	✓			✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓
Torpedo Exercise – Helicopter	✓				✓	✓			✓	✓	✓			✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓
Tracking Exercise – Maritime Patrol Advanced Extended Echo Ranging Sonobuoys	✓				✓	✓			✓	✓	✓			✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓
Tracking Exercise – Maritime Patrol Aircraft	✓				✓	✓			✓	✓	✓			✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓
Torpedo Exercise – Maritime Patrol Aircraft	✓			✓	✓	✓			✓	✓	✓			✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓
Tracking Exercise – Surface	✓					✓				✓	✓					✓	✓		✓				✓	✓		✓	✓		✓
Torpedo Exercise – Surface	✓					✓				✓	✓					✓	✓		✓				✓	✓		✓	✓		✓
Tracking Exercise – Submarine	✓					✓			✓	✓	✓		✓						✓				✓			✓	✓		✓
Torpedo Exercise – Submarine	✓					✓			✓	✓	✓		✓						✓				✓			✓	✓		✓
MAJOR TRAINING EVENTS																													
Joint Expeditionary Exercise	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Joint Multi-Strike Group Exercise	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fleet Strike Group Exercise*	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Integrated Anti-Submarine Warfare Exercise*	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Ship Squadron Anti-Submarine Warfare Exercise*	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Marine Air Ground Task Force Exercise (Amphibious) – Battalion	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special Purpose Marine Air Ground Task Force Exercise	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Urban Warfare Exercise					✓	✓											✓	✓	✓	✓					✓	✓			

Table F-1: Stressors by Training Activity (continued)

Mariana Islands Training Activity	Biological Resources															Physical Resources						Human Resources							
	Acoustic Stressors						Energy Stressors		Physical Stressors				Entanglement Stressors		Ingestion Stressors	Air Quality Stressors		Sediment and Water Quality Stressors											
	Sonar and other active acoustic sources	Explosives	Swimmer Defense airguns	Weapons firing, launch, and impact noise	Aircraft noise	Vessel noise	Electromagnetic Devices	Lasers	Aircraft and Aerial Targets	Vessels and in-water devices	Military Expended Materials	Seafloor Devices	Fiberoptic cables and guidance wires	Parachutes	Military Expended Materials	Criteria Air Pollutants	Hazardous Air Pollutants	Explosives and explosive byproducts	Metals	Chemicals other than explosives	Other Materials	Underwater Acoustics[1]	Physical Disturbance[1]	Accessibility[2]	Airborne Acoustics[2]	Physical Disturbance and Strike[2]	Underwater Energy[3]	In-Air Energy[3]	Physical Interactions[3]
ELECTRONIC WARFARE (EW)																													
Electronic Warfare Operations (EW Ops)						✓	✓		✓	✓						✓	✓							✓	✓	✓			✓
Counter Targeting Flare Exercise – Aircraft					✓				✓						✓	✓	✓		✓		✓		✓	✓	✓	✓			✓
Counter Targeting Chaff Exercise – Ship						✓				✓					✓	✓	✓				✓			✓					✓
Counter Targeting Chaff Exercise – Aircraft					✓				✓						✓	✓	✓				✓				✓				✓
MINE WARFARE (MIW)																													
Civilian Port Defense**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Mine Laying					✓	✓			✓		✓					✓	✓		✓				✓	✓	✓	✓			✓
Mine Neutralization – Explosive Ordnance Disposal (EOD)		✓				✓			✓	✓	✓	✓			✓	✓	✓	✓				✓	✓	✓	✓	✓	✓		✓
Limpet Mine Neutralization System/Shock Wave Generator**		✓													✓				✓				✓	✓	✓	✓	✓		✓
Submarine Mine Exercise**	✓									✓	✓	✓															✓		✓
Airborne Mine Countermeasure – Mine Detection**	✓				✓			✓		✓		✓				✓	✓							✓	✓	✓			✓
Mine Countermeasure Exercise (MCM) – Towed Sonar**	✓					✓		✓		✓		✓				✓	✓								✓		✓		✓
Mine Countermeasure Exercise – Surface (SMCMEX) Sonar**	✓					✓				✓		✓				✓	✓								✓		✓		✓
Mine Neutralization – Remotely Operated Vehicle Sonar**	✓	✓				✓			✓	✓	✓	✓	✓		✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓		✓
Mine Countermeasure (MCM) – Towed Mine Detection**	✓					✓			✓	✓		✓				✓	✓						✓	✓	✓	✓	✓	✓	✓

Table F-1: Stressors by Training Activity (continued)

Mariana Islands Training Activity	Biological Resources															Physical Resources						Human Resources							
	Acoustic Stressors						Energy Stressors		Physical Stressors				Entanglement Stressors		Ingestion Stressors	Air Quality Stressors		Sediment and Water Quality Stressors											
	Sonar and other active acoustic sources	Explosives	Swimmer Defense airguns	Weapons firing, launch, and impact noise	Aircraft noise	Vessel noise	Electromagnetic Devices	Lasers	Aircraft and Aerial Targets	Vessels and in-water devices	Military Expended Materials	Seafloor Devices	Fiberoptic cables and guidance wires	Parachutes	Military Expended Materials	Criteria Air Pollutants	Hazardous Air Pollutants	Explosives and explosive byproducts	Metals	Chemicals other than explosives	Other Materials	Underwater Acoustics[1]	Physical Disturbance[1]	Accessibility[2]	Airborne Acoustics[2]	Physical Disturbance and Strike[2]	Underwater Energy[3]	In-Air Energy[3]	Physical Interactions[3]
NAVAL SPECIAL WARFARE (NSW)																													
Personnel Insertion/Extraction (Non-submarine)										✓																			
Parachute Insertion									✓					✓		✓	✓	✓				✓			✓	✓			
Embassy Reinforcement																	✓		✓	✓	✓				✓	✓			
Direct Action (Combat Close Quarters)																	✓		✓	✓	✓	✓	✓		✓	✓			
Direct Action (Breaching)																	✓		✓	✓	✓	✓	✓			✓	✓		
Direct Action (Tactical Air Control Party)								✓																					
Underwater Demolition Qualification/Certification		✓									✓	✓			✓	✓	✓	✓				✓	✓	✓	✓	✓	✓		✓
Intelligence, Surveillance, Reconnaissance (ISR)																													
Urban Warfare Training					✓												✓		✓	✓	✓				✓	✓			
Underwater Survey						✓																							

Table F-1: Stressors by Training Activity (continued)

Mariana Islands Training Activity	Biological Resources															Physical Resources						Human Resources							
	Acoustic Stressors						Energy Stressors		Physical Stressors				Entanglement Stressors		Ingestion Stressors	Air Quality Stressors		Sediment and Water Quality Stressors												
	Sonar and other active acoustic sources	Explosives	Swimmer Defense airguns	Weapons firing, launch, and impact noise	Aircraft noise	Vessel noise	Electromagnetic Devices	Lasers	Aircraft and Aerial Targets	Vessels and in-water devices	Military Expended Materials	Seafloor Devices	Fiberoptic cables and guidance wires	Parachutes	Military Expended Materials	Criteria Air Pollutants	Hazardous Air Pollutants	Explosives and explosive byproducts	Metals	Chemicals other than explosives	Other Materials	Underwater Acoustics[1]	Physical Disturbance[1]	Accessibility[2]	Airborne Acoustics[2]	Physical Disturbance and Strike[2]	Underwater Energy[3]	In-Air Energy[3]	Physical Interactions[3]
OTHER TRAINING EXERCISES																													
Surface Ship Sonar Maintenance**	✓					✓				✓																	✓		
Submarine Sonar Maintenance**	✓									✓																	✓		
Small Boat Attack**						✓				✓					✓	✓	✓		✓										
Submarine Navigation**	✓									✓																✓	✓		✓
Search and Rescue At Sea**					✓	✓			✓		✓														✓	✓			
Precision Anchoring**						✓				✓		✓				✓	✓			✓	✓		✓	✓		✓			✓
Maneuver (Convoy, Land Navigation)																✓	✓	✓					✓			✓			✓
Water Purification**																					✓								
Field Training Exercise																	✓		✓	✓	✓				✓	✓			
Force Protection																	✓	✓	✓	✓					✓	✓			
Anti-Terrorism																	✓	✓	✓	✓					✓	✓			
Seize Airfield						✓											✓	✓	✓	✓					✓	✓			
Airfield Expeditionary																	✓	✓	✓	✓					✓	✓			
Unmanned Aerial Vehicle Operation**					✓	✓										✓	✓								✓				
Land Demolitions (Improvised Explosive Device Discovery/Disposal)																	✓												
Land Demolitions (Unexploded Ordnance) Discovery/Disposal																	✓	✓	✓	✓	✓				✓				

[1] Cultural resources stressor
[2] Socioeconomics stressor
[3] Public health and safety stressor
* Alternative 2 only
** Alternative 1 and Alternative 2 only
Note: A check indicates events that take place for all alternatives.

F.2 STRESSOR BY TESTING ACTIVITY

Table F-2: Stressors by Testing Activity

Mariana Islands Testing Activity	Biological Resources															Physical Resources						Human Resources							
	Acoustic Stressors						Energy Stressors		Physical Stressors				Entanglement Stressors		Ingestion Stressors	Air Quality Stressors		Sediment and Water Quality Stressors											
	Sonar and other active acoustic sources	Explosives	Swimmer Defense airguns	Weapons firing, launch, and impact noise	Aircraft noise	Vessel noise	Electromagnetic Devices	Lasers	Aircraft and Aerial Targets	Vessels and in-water devices	Military Expended Materials	Seafloor Devices	Fiberoptic cables and guidance wires	Parachutes	Military Expended Materials	Criteria Air Pollutants	Hazardous Air Pollutants	Explosives and explosive byproducts	Metals	Chemicals other than explosives	Other Materials	Underwater Acoustics[1]	Physical Disturbance[1]	Accessibility[2]	Airborne Acoustics[2]	Physical Disturbance and Strike[2]	Underwater Energy[3]	In-Air Energy[3]	Physical Interactions[3]
NAVAL AIR SYSTEMS COMMAND																													
ANTI-SURFACE WARFARE (ASUW)																													
Air-to-Surface Missile Test**		✓		✓	✓				✓		✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓
ANTI-SUBMARINE WARFARE (ASW)																													
Anti-Submarine Warfare Tracking Test – Maritime Patrol Aircraft (Sonobuoys)**	✓	✓			✓				✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Anti-Submarine Warfare Torpedo Test**	✓			✓	✓				✓	✓	✓			✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓
Broad Area Maritime Surveillance (BAMS) Testing – MQ-4C Triton**					✓											✓	✓								✓				
ELECTRONIC WARFARE (EW)																													
Flare Test**					✓						✓				✓	✓	✓				✓		✓	✓	✓	✓			✓
NAVAL SEA SYSTEMS COMMAND																													
LIFE CYCLE ACTIVITIES																													
Ship Signature Testing**	✓					✓				✓						✓	✓									✓	✓		✓
ANTI-SURFACE WARFARE/ANTI-SUBMARINE WARFARE TESTING																													
Kinetic Energy Weapon Testing**				✓		✓				✓	✓					✓	✓	✓	✓	✓			✓	✓	✓	✓			✓
Torpedo Testing**	✓	✓				✓			✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Countermeasure Testing **	✓				✓	✓			✓	✓	✓			✓	✓	✓	✓					✓	✓			✓	✓		✓
At-sea Sonar Testing**	✓					✓				✓						✓	✓									✓	✓		✓
SHIPBOARD PROTECTION SYSTEMS AND SWIMMER DEFENSE TESTING																													
Pierside Integrated Swimmer Defense**	✓		✓							✓		✓										✓	✓		✓	✓	✓		✓
NEW SHIP CONSTRUCTION																													
ASW Mission Package Testing**	✓				✓	✓			✓	✓	✓			✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
MCM Mission Package Testing**	✓	✓			✓	✓	✓		✓	✓		✓	✓		✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓
ASUW Mission Package Testing**		✓		✓	✓	✓			✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
OFFICE OF NAVAL RESEARCH																													
North Pacific Acoustic Lab Philippine Sea 2018–19 Experiment (Deep Water)		✓								✓		✓																	

[1] Cultural resources stressor, [2] Socioeconomics stressor, [3] Public health and safety stressor, ** Alternative 1 and Alternative 2 only, Note: A check indicates events that take place for all alternatives.

F.3 STRESSORS BY RESOURCE

Table F-3: Stressors by Resource

Stressors vs. Resources		Biological Resources																	Physical Resources						Human Resources						
		Acoustic Stressors						Energy Stressors		Physical Stressors						Entanglement Stressors		Ingestion Stressors	Invasive Species	Air Quality Stressors		Sediment and Water Quality Stressors									
		Sonar and other active acoustic sources	Explosives	Swimmer Defense airguns	Weapons firing, launch, and impact noise	Aircraft noise	Vessel noise	Electromagnetic Devices	Lasers	Aircraft and Aerial Targets	Vessels and in-water devices	Military Expended Materials	Seafloor Devices	Ground Disturbance	Wildfires	Fiberoptic cables and guidance wires	Parachutes	Military Expended Materials	Habitat, Prey availability, Invasive Species Introductions at FDM	Criteria Air Pollutants	Hazardous Air Pollutants	Explosives and explosive byproducts	Metals	Chemicals other than explosives	Other Materials	Underwater Acoustics	Physical Disturbance	Accessibility	Airborne Acoustics	Physical Disturbance and Strike	Underwater Energy	Physical Interactions
Physical	Sediments and Water Quality																					✓	✓	✓	✓						
	Air Quality																			✓	✓										
Biological	Marine Habitats		✓								✓	✓	✓																		
	Marine Mammals	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓			✓	✓	✓				✓	✓	✓								
	Sea Turtles	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓			✓	✓	✓				✓	✓	✓								
	Marine Birds	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓			✓														
	Marine Vegetation		✓								✓	✓	✓									✓	✓	✓	✓						
	Marine Invertebrates	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓			✓	✓	✓				✓	✓	✓	✓						
	Fish	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓			✓	✓	✓				✓	✓	✓	✓						
	Terrestrial		✓		✓	✓				✓		✓		✓	✓				✓												
Human	Cultural Resources		✓								✓	✓	✓	✓												✓	✓				
	Socioeconomic Resources				✓	✓	✓			✓	✓	✓														✓	✓	✓	✓	✓		
	Public Health and Safety	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓									✓	✓	✓	✓						✓	✓

Appendix G: Statistical Probability Analysis for Estimating Direct Strike Impact and Number of Potential Exposures

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APPENDIX G STATISTICAL PROBABILITY ANALYSIS FOR ESTIMATING DIRECT STRIKE IMPACT AND NUMBER OF POTENTIAL EXPOSURES

This appendix discusses the methods and results for calculating the probability of a direct strike of an animal from any military items from the proposed training and testing activities falling toward (or directed at) the sea surface. For the purposes of this appendix, military items include non-explosive practice munitions (e.g., rounds from shipboard small-arms live-fire training), sonobuoys, acoustic countermeasures, and targets. Only marine mammals and sea turtles will be analyzed using these methods because animal densities are necessary to complete the calculations, and density estimates are currently only available for marine mammals and sea turtles within the Mariana Islands Training and Testing (MITT) Study Area (Study Area). Furthermore, the analysis conducted here does not account for explosive munitions because impacts from explosives are analyzed within the United States Department of the Navy (Navy) Acoustic Effects Model.

G.1 DIRECT IMPACT ANALYSIS

A statistical probability was calculated to estimate the impact probability (P) and number of exposures (T) associated with direct impact of military items on marine animals on the sea surface within the specified training or testing area (R) in which the activities are occurring. The statistical probability analysis is based on probability theory and modified Venn diagrams with rectangular "footprint" areas for the individual animal (A) and total impact (I) inscribed inside the training or testing area (R). The analysis assumes: (1) that all animals would be at or near the surface 100 percent of the time, when in fact, marine mammals spend the majority of their time underwater; and (2) that the animals are stationary, which does not account for any movement or any potential avoidance of the training or testing activity.

1. A = length*width, where the individual animal's width (breadth) is assumed to be 20 percent of its length for marine mammals and 112 percent of its length for sea turtles. This product for A is multiplied by the number of animals N_a in the specified training or testing area (i.e., product of the highest average seasonal animal density [D] and training or testing area [R]: $N_a = D*R$) to obtain the total animal footprint area ($A*N_a = A*D*R$) in the training or testing area. As a worst case scenario, the total animal footprint area is calculated for the species with the highest average seasonal density in the training or testing area with the highest use of military items within the entire Study Area.

2. $I = N_{mun}$*length*diameter, where N_{mun} = total annual number of military items for each type, and "length" and "diameter" refer to the individual military equipment dimensions. For each type, the individual impact footprint area is multiplied by the total annual number of military items to obtain the type-specific impact footprint area ($I = N_{mun}$*length*diameter). Each training or testing activity uses one or more different types of military items, each with a specific number and dimensions, and several training and testing activities occur in a given year. When integrating over the number of military items types for the given activity (and then over the number of activities in a year), these calculations are repeated (accounting for differences in dimensions and numbers) for all military items types used, to obtain the type-specific impact footprint area (I). These impact footprint areas are summed over all military items types for the given activity, and then summed (integrated) over all activities to obtain the total impact footprint area resulting from all activities occurring in the training or testing area in a given year.

As a worst case scenario, the total impact footprint area is calculated for the training or testing area with the highest use of military items within the entire Study Area.

Though marine mammals and sea turtles are not randomly distributed in the environment, a random point calculation was chosen due to the intensive data needs that would be required for a calculation that incorporated more detailed information on an animal's or military item's spatial occurrence.

The analysis is expected to provide an overestimation of the probability of a strike for the following reasons: (1) it calculates the probability of a single military item (of all the items expended over the course of the year) hitting a single animal at its species' highest seasonal density; (2) it does not take into account the possibility that an animal may avoid military activities; (3) it does not take into account the possibility that an animal may not be at the water surface; (4) it does not take into account that most projectiles fired during training and testing activities are fired at targets, so only a very small portion of those projectiles that miss the target would hit the water with their maximum velocity and force; and (5) it does not quantitatively take into account the Navy avoiding animals that are sighted through the implementation of mitigation measures.

The likelihood of an impact is calculated as the probability (P) that the animal footprint (A) and the impact footprint (I) will intersect within the training or testing area (R). This is calculated as the area ratio A/R or I/R, respectively. Note that A (referring to an **individual** animal footprint) and I (referring to the impact footprint resulting from the **total** number of military items N_{mun}) are the relevant quantities used in the following calculations of single-animal impact probability [P], which is then multiplied by the number of animals to obtain the number of exposures (T). The probability that the random point in the training or testing area is within both types of footprints (i.e., A and I) depends on the degree of overlap of A and I. The probability that I overlaps A is calculated by adding a buffer distance around A based on one-half of the impact area (i.e., 0.5*I), such that an impact (center) occurring anywhere within the combined (overlapping) area would impact the animal. Thus, if L_i and W_i are the length and width of the impact footprint such that $L_i*W_i = 0.5*I$ and $W_i/L_i = L_a/W_a$ (i.e., similar geometry between the animal footprint and impact footprint), and if L_a and W_a are the length and width (breadth) of the individual animal such that $L_a*W_a = A$ (= individual animal footprint area), then, assuming a purely static, rectangular scenario (Scenario 1), the total area $A_{tot} = (L_a + 2*L_i)*(W_a + 2*W_i)$, and the buffer area $A_{buffer} = A_{tot} – L_a*W_a$.

Four scenarios were examined with respect to defining and setting up the overlapping combined areas of A and I:

1. **Scenario 1:** Purely static, rectangular scenario. Impact is assumed to be static (i.e., direct impact effects only; non-dynamic; no explosions or scattering of military items after the initial impact). Hence the impact footprint area (I) is assumed to be rectangular and given by the product of military items length and width (multiplied by the number of military items). $A_{tot} = (L_a + 2*L_i)*(W_a + 2*W_i)$ and $A_{buffer} = A_{tot} – L_a*W_a$

2. **Scenario 2:** Dynamic scenario with end-on collision, in which the length of the impact footprint (Li) is enhanced by Rn = 5 military items lengths to reflect forward momentum. $A_{tot} = (L_a + (1 + R_n)*L_i)*(W_a + 2*W_i)$ and $A_{buffer} = A_{tot} – L_a*W_a$

3. **Scenario 3:** Dynamic scenario with broadside collision, in which the width of the impact footprint (W_i) is enhanced by R_n = 5 military items lengths to reflect forward momentum. $A_{tot} = (L_a + 2*W_i)*(W_a + (1 + R_n)*L_i)$ and $A_{buffer} = A_{tot} – L_a*W_a$

4. **Scenario 4:** Purely static, radial scenario, in which the rectangular animal and impact footprints are replaced with circular footprints while conserving area. Define the radius (R_a) of the circular individual animal footprint such that $\pi*R_a^2 = L_a*W_a$, and define the radius (R_i) of the circular impact footprint such that $\pi *R_i^2 = 0.5*L_i*W_i = 0.5*I$. Then $A_{tot} = \pi *(R_a + R_i)^2$ and $A_{buffer} = A_{tot} – \pi *R_a^2$ (where $\pi = 3.1415927$).

Static impacts (Scenarios 1 and 4) assume no additional areal coverage effects of scattered military items beyond the initial impact. For dynamic impacts (Scenarios 2 and 3), the distance of any scattered military items must be considered by increasing the length (Scenario 2) or width (Scenario 3), depending on orientation (broadside versus end-on collision), of the impact footprint to account for the forward horizontal momentum of the falling object. Forward momentum typically accounts for five object lengths, resulting in a corresponding increase in impact area. Significantly different values may result from these two types of orientation. Both of these types of collision conditions can be calculated each with 50 percent likelihood (i.e., equal weighting between Scenarios 2 and 3, to average these potentially different values).

Impact probability P is the probability of impacting one animal with the given number, type, and dimensions of all military items used in training or testing activities occurring in the area per year, and is given by the ratio of total area (A_{tot}) to training or testing area (R): $P = A_{tot}/R$. Number of exposures is $T = N*P = N*A_{tot}/R$, where N = number of animals in the training or testing area per year (given as the product of the animal density [D] and range size [R]). Thus, $N = D*R$ and hence $T = N*P = N*A_{tot}/R = D*A_{tot}$. Using this procedure, P and T were calculated for each of the four scenarios, for Endangered Species Act (ESA)-listed marine mammals and the marine mammal and sea turtle species with the highest average seasonal density (used as the annual density value) and for each military item type. The scenario -specific P and T values were averaged over the four scenarios (using equal weighting) to obtain a single scenario -averaged annual estimate of P and T.

G.2 PARAMETERS FOR ANALYSIS

Impact probabilities (P) and number of exposures (T) were estimated by the analysis for the following parameters:

1. **Three proposed alternatives:** No Action Alternative, Alternative 1, and Alternative 2. Animal densities, animal dimensions, and military item dimensions are the same for the three alternatives.

2. **Training or Testing Area:** The MITT Study Area is an area of 1,723,577.4 square kilometers. For the sea turtle analysis, the Study Area was split into the Nearshore Area (Study Area Shallower than 200 meters [m]), and the Open Ocean (Study Area deeper than 200 m). These two training areas were chosen because there is a higher density of sea turtles in nearshore areas then in the open ocean.

3. **The following types of munitions or other items:**
    a) **Small-caliber projectiles:** up to and including 0.50 caliber rounds
    b) **Medium-caliber projectiles:** larger than 0.50 caliber rounds but smaller than 57-millimeters (mm) projectiles
    c) **Large-caliber projectiles:** includes projectiles greater than or equal to a 57 mm projectile
    d) **Missiles:** includes rockets and jet-propelled munitions

e) **Bombs:** non-explosive practice bombs and mine shapes, ranging from 10 to 2,000 pounds
f) **Torpedoes:** includes aircraft deployed torpedoes
g) **Sonobuoys:** includes aircraft deployed sonobuoys

4. **Animal species of interest:** The nine species of ESA-listed marine mammals (Humpback Whale [*Megaptera novaeangliae*], Blue Whale [*Balaenoptera musculus*], Fin Whale [*Balaenoptera physalus*], Sei Whale [*Balaenoptera borealis*], Sperm Whale [*Physeter macrocephalus*], North Pacific right whale [*Eubalaena japonica*], Hawaiian monk seal [*Monachus schauinslandi*], Dugong [*Dugong dugon*]), and the non-ESA listed marine mammal species with the highest average seasonal density (Pantropical spotted dolphin) in the Study Area. Three of the nine ESA-listed marine mammals are not expected to occur in the Study Area, and therefore were not analyzed further in this appendix (North Pacific right whale [*Eubalaena japonica*], Hawaiian monk seal [*Monachus schauinslandi*], Dugong [*Dugong dugon*]). The five sea turtle species of interest are the Green Sea Turtle (*Chelonia mydas*), the Hawksbill Sea Turtle (*Eretmochelys imbricata*), the Loggerhead Sea Turtle (*Caretta caretta*), the Olive Ridley Sea Turtle (*Lepidochelys olivacea*), and the Leatherback Sea Turtle (*Dermochelys coriacea*).

G.3 INPUT DATA

Input data for the direct strike analysis include animal species likely to be in the area and military items proposed for use under each of the three alternatives. Animal species data include: (1) species identification and status (i.e., threatened, endangered, or neither), (2) highest average seasonal density estimate for the species of interest, and (3) adult animal dimensions (length and width) for the species with the highest density. The animal's dimensions are used to calculate individual animal footprint areas (A = length*width), and animal densities are used to calculate the number of exposures (T) from the impact probability (P): T = N*P. Military items data include: (1) military items category (e.g., projectile, bomb, rocket, target), (2) military items dimensions (length and width), and (3) total number of military items used annually.

Military items input data, specifically the quantity (e.g., numbers of guns, bombs, and rockets), are different in magnitude among the three proposed alternatives (No Action Alternative, Alternative 1, and Alternative 2). All animal species input data, the military items identification and category, and military items dimensions, are the same for the three alternatives, only the quantities (i.e., total number of military items) are different.

G.4 OUTPUT DATA

Estimates of impact probability (P) and number of exposures (T) for a given species of interest were made for the specified training or testing area with the highest annual number of military items used for each of the three alternatives. The calculations derived P and T from the highest annual number of military items used in the Study Area for the given alternative. Differences in P and T among the alternatives arise from different numbers of events (and therefore military items) for the three alternatives.

Results for marine mammals and sea turtles are presented in Table G-1 and Table G-2.

Table G-1: Estimated Marine Mammal Exposures from Direct Strike of Munitions and Other Items by Alternative

Mariana Islands Training and Testing Study Area						
Species	**Training**			**Testing**		
	No Action	**Alternative 1**	**Alternative 2**	**No Action**	**Alternative 1**	**Alternative 2**
Humpback Whale	0.000012	0.000040	0.000038	< 0.000001	0.000001	0.000001
Blue Whale	< 0.000001	0.000001	0.000001	< 0.000001	< 0.000001	< 0.000001
Fin Whale	< 0.000001	0.000001	0.000001	< 0.000001	< 0.000001	< 0.000001
Sei Whale	< 0.000001	0.000013	0.000013	< 0.000001	< 0.000001	< 0.000001
Sperm Whale	0.000034	0.000107	0.000110	0.000001	0.000003	0.000003
Pantropical Spotted Dolphin[1]	0.000049	0.000156	0.000161	< 0.000001	0.000003	0.000003

[1] This is the non-Endangered Species Act-listed marine mammal species with the highest average seasonal density in the training and testing area of interest.

Table G-2: Estimated Sea Turtle Exposures from Direct Strike of Military Expended Materials by Area and Alternative

Mariana Islands Training and Testing Study Area						
Nearshore Area (Study Area shallower than 200 meters [m])						
Species	**Training**			**Testing**		
	No Action	**Alternative 1**	**Alternative 2**	**No Action**	**Alternative 1**	**Alternative 2**
Green Sea Turtle	0.00092	0.00231	0.00231	0.00001	0.00005	0.00005
Hawksbill Sea Turtle	0.00005	0.00014	0.00014	< 0.00001	< 0.00001	< 0.00001
Loggerhead Sea Turtle	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Olive Ridley Sea Turtle	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Leatherback Sea Turtle	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Open Ocean (Study Area deeper than 200 m)						
Species	**Training**			**Testing**		
	No Action	**Alternative 1**	**Alternative 2**	**No Action**	**Alternative 1**	**Alternative 2**
All Turtle Species	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001

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Appendix H: Biological Resource Methods

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APPENDIX H BIOLOGICAL RESOURCE METHODS

Appendix H outlines the conceptual framework for assessing effects on biological resources from sound-producing activities, energy-producing activities, physical disturbance or strike, entanglement, and ingestion.

H.1 CONCEPTUAL FRAMEWORK FOR ASSESSING EFFECTS FROM SOUND-PRODUCING ACTIVITIES

This conceptual framework describes the different types of effects that are possible and the potential relationships between sound stimuli and long-term consequences for the individual and population. The conceptual framework is central to the assessment of acoustic-related effects and is consulted multiple times throughout the process. It describes potential effects and the pathways by which an acoustic stimulus or sound-producing activity can potentially affect animals. The conceptual framework qualitatively describes costs to the animal (e.g., expended energy or missed feeding opportunity) that may be associated with specific reactions. Finally, the conceptual framework outlines the conditions that may lead to long-term consequences for the individual and population if the animal cannot fully recover from the short-term effects. Within each biological resource section (e.g., marine mammals, birds, and fish,) the detailed methods to predict effects to specific taxa are derived from this conceptual framework.

An animal is considered "exposed" to a sound if the received sound level at the animal's location is above the background ambient noise level within a similar frequency band. A variety of effects may result from exposure to sound-producing activities. The severity of these effects can vary greatly between minor effects that have no real cost to the animal, to more severe effects that may have lasting consequences. Whether a marine animal is significantly affected must be determined from the best available scientific data regarding the potential physiological and behavioral responses to sound-producing activities and the possible costs and long-term consequences of those responses.

The major categories of potential effects are:

- Direct trauma
- Auditory fatigue
- Auditory masking
- Behavioral reactions
- Physiological stress

Direct trauma refers to injury to organs or tissues of an animal as a direct result of an intense sound wave or shock wave impinging upon or passing through its body. Potential impacts on an animal's internal tissues and organs are assessed by considering the characteristics of the exposure and the response characteristics of the tissues. Trauma can be mild and fully recoverable, with no long-term repercussions to the individual or population, or more severe, with the potential for lasting effects or, in some cases, mortality.

Auditory fatigue may result from over-stimulation of the delicate hair cells and tissues within the auditory system. The most familiar effect of auditory fatigue is hearing loss, also called a noise-induced threshold shift, meaning an increase in the hearing threshold.

Audible natural and artificial sounds can potentially result in auditory masking, a condition that occurs when noise interferes with an animal's ability to hear other sounds and may affect the animal's ability to communicate, such as requiring the animal to adjust the frequency or loudness of its call. Masking occurs when the perception of a sound is interfered with by a second sound, and the probability of masking increases as the two sounds increase in similarity and the masking sound increases in level. It is important to distinguish auditory fatigue, which persists after the sound exposure, from masking, which occurs only during the sound exposure.

Marine animals naturally experience physiological stress as part of their normal life histories. Changing weather and ocean conditions, exposure to diseases and naturally occurring toxins, lack of prey availability, social interactions with conspecifics (members of the same species), and interactions with predators all contribute to the stress a marine animal naturally experiences. The physiological response to a stressor, often termed the stress response, is an adaptive process that helps an animal cope with changing external and internal environmental conditions. However, too much of a stress response can be harmful to an animal, resulting in physiological dysfunction. In some cases, naturally occurring stressors can have profound impacts on animals. Sound-producing activities have the potential to provide additional stress, which must be considered, not only for its direct impact on an animal's behavior but also for contributing to an animal's chronic stress level.

A sound-producing activity can cause a variety of behavioral reactions in animals ranging from very minor and brief, to more severe reactions such as aggression or prolonged flight. The acoustic stimuli can cause a stress reaction (i.e., startle or annoyance); they may act as a cue to an animal that has experienced a stress reaction in the past to similar sounds or activities, or that acquired a learned behavioral response to the sounds from conspecifics. An animal may choose to deal with these stimuli or ignore them based on the severity of the stress response, the animal's past experience with the sound, as well as other stimuli present in the environment. If an animal chooses to react to the acoustic stimuli, then the behavioral responses fall into two categories: alteration of an ongoing behavior pattern or avoidance. The specific type and severity of these reactions helps determine the costs and ultimate consequences to the individual and population.

H.2 FLOWCHART

Figure H.2-1 is a flowchart that diagrams the process used to evaluate the potential effects on marine animals from sound-producing activities. The shape and color of each box on the flowchart represent either a decision point in the analysis (green diamonds); specific processes such as responses, costs, or recovery (blue rectangles); external factors to consider (purple parallelograms); and final outcomes for the individual or population (orange ovals and rectangles). Each box is labeled for reference throughout the appendix. For simplicity, sound is used to include not only acoustic waves but also shock waves generated from explosive sources. The supporting text in the appendix clarifies those instances where it is necessary to distinguish between the two phenomena.

Box A1, the Sound-Producing Activity, is the source of the sound stimuli and therefore the starting point in the analysis. Each of the five major categories of potential effects (i.e., direct trauma, auditory fatigue, masking, behavioral response, and stress) are presented as pathways that flow from left to right across the diagram. Pathways are not exclusive, and each must be followed until it can be concluded that an animal is not at risk for that specific effect. The vertical columns show the steps in the analysis used to examine each of the effects pathways. These steps proceed from the stimuli, to the physiological responses, to any potential behavioral responses, to the costs to the animal, to the recovery of the animal, and finally to the long-term consequences for the individual and population.

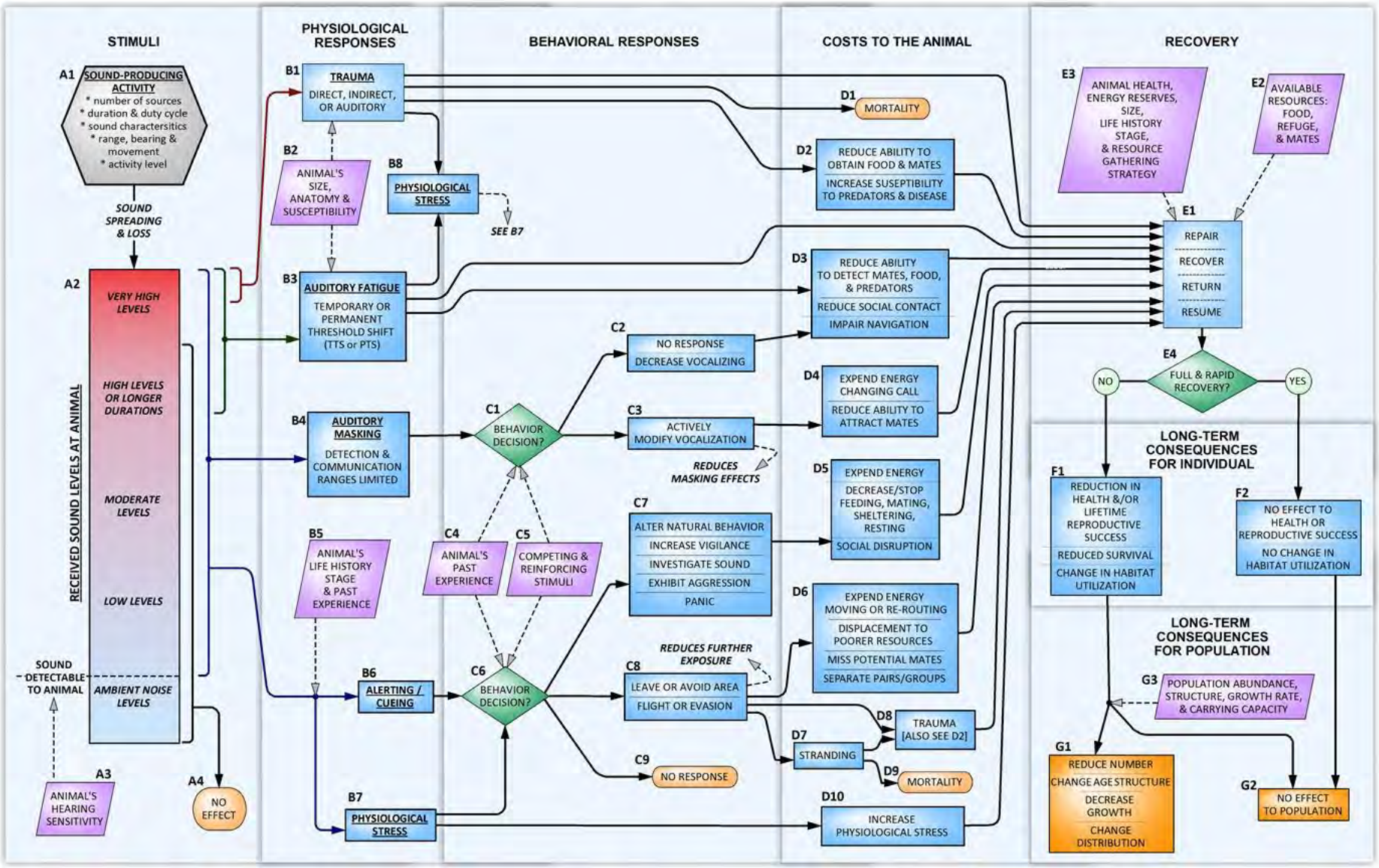

Figure H.2-1: Flow Chart of the Evaluation Process of Sound-Producing Activities

H.2.1 STIMULI

The first step in predicting whether a sound-producing activity is capable of causing an effect on a marine animal is to define the stimuli experienced by the animal. The stimuli include the sound-producing activity, the surrounding acoustical environment, and the characteristics of the sound when it reaches the animal, and whether the animal can detect the sound.

Sounds emitted from a sound-producing activity (Box A1) travel through the environment to create a spatially variable sound field. There can be any number of individual sound sources in a given activity, each with its own unique characteristics. For example, a Navy training exercise may involve several ships and aircraft, several types of sonar, and several types of ordnance. Each of the individual sound sources has unique characteristics: source level, frequency, duty cycle, duration, and rise-time (i.e., impulsive vs. non-impulsive). Each source also has a range, depth/altitude, bearing and directionality, and movement relative to the animal.

Environmental factors such as temperature, salinity, bathymetry, bottom type, and sea state all impact how sound spreads through the environment and how sound decreases in amplitude between the source and the receiver (individual animal). Mathematical calculations and computer models are used to predict how the characteristics of the sound will change between the source and the animal under a range of realistic environmental conditions for the locations where sound-producing activities occur.

The details of the overall activity may also be important to place the potential effects into context and help predict the range of severity of the probable reactions. The overall activity level (e.g., number of ships and aircraft involved in exercise); the number of sound sources within the activity; the activity duration; and the range, bearing, and movement of the activity relative to the animal are all considered.

The received sound at the animal and the number of times the sound is experienced (i.e., repetitive exposures) (Box A2) determines the range of possible effects. Sounds that are higher than the ambient noise level and within an animal's hearing sensitivity range (Box A3) have the potential to cause effects. Very high exposure levels may have the potential to cause trauma; high-level exposures, long-duration exposures, or repetitive exposures may potentially cause auditory fatigue; lower-level exposures may potentially lead to masking; all perceived levels may lead to stress; and many sounds, including sounds that are not detectable by the animal, would have no effect (Box A4).

H.2.2 PHYSIOLOGICAL RESPONSES

Physiological Responses include direct trauma, hearing loss, auditory masking, and stress. The magnitude of the involuntary response is predicted based on the characteristics of the acoustic stimuli and the characteristics of the animal (species, susceptibility, life history stage, size, and past experiences).

Trauma

Physiological responses to sound stimulation may range from mechanical vibration (with no resulting adverse effects) to tissue trauma (injury). Direct trauma (Box B1) refers to the direct injury of tissues and organs by sound waves impinging upon or traveling through an animal's body. Marine animals' bodies, especially their auditory systems, are well adapted to large hydrostatic pressures and large, but relatively slow, pressure changes that occur with changing depth. However, mechanical trauma may result from exposure to very-high-amplitude sounds when the elastic limits of the auditory system are exceeded or when animals are exposed to intense sounds with very rapid rise times, such that the tissues cannot respond adequately to the rapid pressure changes. Trauma to marine animals from sound

exposure requires high received levels. Trauma effects therefore normally only occur with very-high-amplitude, often impulsive, sources, and at relatively close range, which limits the number of animals likely exposed to trauma-inducing sound levels.

Direct trauma includes both auditory and non-auditory trauma. Auditory trauma is the direct mechanical injury to hearing-related structures, including tympanic membrane rupture, disarticulation of the middle ear ossicles, and trauma to the inner ear structures such as the organ of Corti and the associated hair cells. Auditory trauma differs from auditory fatigue in that the latter involves the overstimulation of the auditory system at levels below those capable of causing direct mechanical damage. Auditory trauma is always injurious but can be temporary. One of the most common consequences of auditory trauma is hearing loss (see below).

Non-auditory trauma can include hemorrhaging of small blood vessels and the rupture of gas-containing tissues such as the lung, swim bladder, or gastrointestinal tract. After the ear (or other sound-sensing organs), these are usually the most sensitive organs and tissues to acoustic trauma. An animal's size and anatomy are important in determining its susceptibility to trauma (Box B2), especially non-auditory trauma. Larger size indicates more tissue to protect vital organs that might be otherwise susceptible (i.e., there is more attenuation of the received sound before it impacts non-auditory structures). Therefore, larger animals should be less susceptible to trauma than smaller animals. In some cases, acoustic resonance of a structure may enhance the vibrations resulting from noise exposure and result in an increased susceptibility to trauma. Resonance is a phenomenon that exists when an object is vibrated at a frequency near its natural frequency of vibration, or the particular frequency at which the object vibrates most readily. The size, geometry, and material composition of a structure determine the frequency at which the object will resonate. The potential for resonance is determined by comparing the sound frequencies with the resonant frequency and damping of the tissues. Because most biological tissues are heavily damped, the increase in susceptibility from resonance is limited.

Vascular and tissue bubble formation resulting from sound exposure is a hypothesized mechanism of indirect trauma to marine animals. The risk of bubble formation from one of these processes, called rectified diffusion, is based on the amplitude, frequency, and duration of the sound (Crum and Mao 1996) and an animal's tissue nitrogen gas saturation at the time of the exposure. Rectified diffusion is the growth of a bubble that fluctuates in size because of the changing pressure field caused by the sound wave. An alternative, but related, hypothesis has also been suggested: stable microbubbles could be destabilized by high-level sound exposures such that bubble growth then occurs through static diffusion of gas out of gas-supersaturated tissues. Bubbles have also been hypothesized to result from changes in the dive behavior of marine mammals as a result of sound exposure (Jepson et al. 2003). Vascular bubbles produced by this mechanism would not be a physiological response to the sound exposure, but a cost to the animal because of the change in behavior (Section H.2.4, Costs to the Animal). Under either of these hypotheses, several things could happen: (1) bubbles could grow to the extent that vascular blockage (emboli) and tissue hemorrhage occur, (2) bubbles could develop to the extent that a complement immune response is triggered or the nervous tissue is subjected to enough localized pressure that pain or dysfunction occurs, or (3) the bubbles could be cleared by the lung without negative consequence to the animal. Although rectified diffusion is a known phenomenon, its applicability to diving marine animals exposed to sound is questionable; animals would need to be highly supersaturated with gas and very close to a high-level sound source (Crum et al. 2005). The other two hypothesized phenomena are largely theoretical and have not been demonstrated under realistic exposure conditions.

Auditory Fatigue

Auditory fatigue is a reduction in hearing ability resulting from overstimulation to sounds. The mechanisms responsible for auditory fatigue differ from auditory trauma and may consist of a variety of mechanical and biochemical processes, including physical damage or distortion of the tympanic membrane (not including tympanic membrane rupture) and cochlear hair cell stereocilia, oxidative stress-related hair cell death, changes in cochlear blood flow, and swelling of cochlear nerve terminals resulting from glutamate excitotoxicity (Henderson et al. 2006; Kujawa and Liberman 2009). Although the outer hair cells are the most prominent target for fatigue effects, severe noise exposures may also result in inner hair cell death and loss of auditory nerve fibers (Henderson et al. 2006). Auditory fatigue is possibly the best studied type of effect from sound exposures in marine and terrestrial animals, including humans. The characteristics of the received sound stimuli are used and compared to the animal's hearing sensitivity and susceptibility to noise (Box A3) to determine the potential for auditory fatigue.

Auditory fatigue manifests itself as hearing sensitivity loss, called a noise-induced threshold shift. A threshold shift may be either permanent threshold shift (PTS), or temporary threshold shift (TTS). Note that the term "auditory fatigue" is often used to mean a TTS; however, in this analysis, a more general meaning to differentiate fatigue mechanisms (e.g., metabolic exhaustion and distortion of tissues) from auditory trauma mechanisms (e.g., physical destruction of cochlear tissues occurring at the time of exposure) is used.

The distinction between PTS and TTS is based on whether there is a complete recovery of hearing sensitivity following a sound exposure. If the threshold shift eventually returns to zero (the animal's hearing returns to pre-exposure value), the threshold shift is a TTS. If the threshold shift does not return to zero but leaves some finite amount of threshold shift, then that remaining threshold shift is a PTS. Figure H.2-2 shows one hypothetical threshold shift that completely recovers, a TTS, and one that does not completely recover, leaving some PTS.

The relationship between TTS and PTS is complicated and poorly understood, even in humans and terrestrial mammals, where numerous studies failed to delineate a clear relationship between the two. Relatively small amounts of TTS (e.g., less than 40–50 decibels [dB] measured 2 minutes after exposure) will recover with no apparent long-term effects; however, terrestrial mammal studies revealed that large amounts of TTS (e.g., approximately 40 dB measured 24 hours after exposure) can result in permanent neural degeneration, despite the hearing thresholds returning to normal (Kujawa and Liberman 2009). The amounts of TTS induced by Kujawa and Liberman (2009) were described as being "at the limits of reversibility." It is unknown whether smaller amounts of TTS can result in similar neural degeneration, or if effects would translate to other species such as marine animals.

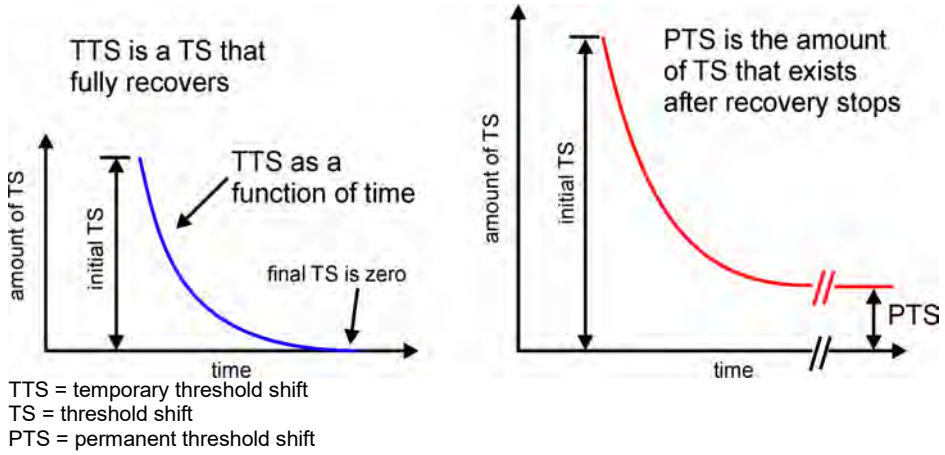

Figure H.2-2: Two Hypothetical Threshold Shifts

The amplitude, frequency, duration, and temporal pattern of the sound exposure are important parameters for predicting the potential for auditory fatigue. Duration is particularly important because auditory fatigue is exacerbated with prolonged exposure time. The frequency of the sound also plays an important role in susceptibility to hearing loss. Experiments show that animals are most susceptible to fatigue (Box B3) within their most sensitive hearing range. Sounds outside of an animal's audible frequency range do not cause fatigue.

The greater the degree of threshold shift, the smaller the ocean space within which an animal can detect biologically relevant sounds and communicate. This is referred to as reducing an animal's "acoustic space." This reduction can be estimated given the amount of threshold shift incurred by an animal.

Auditory and Communication Masking

Auditory masking occurs if the noise from an activity interferes with an animal's ability to detect, understand, elicit, or recognize biologically relevant sounds of interest (Box B4). "Noise" refers to unwanted or unimportant sounds that mask an animal's ability to hear "sounds of interest" and affect an animal's ability to generate sounds (or call). A sound of interest refers to a sound that is potentially being detected. Sounds of interest include echolocation clicks; sounds from predators; natural, abiotic sounds that may aid in navigation; and reverberation, which can give an animal information about its location and orientation within the ocean. Sounds of interest are frequently generated by conspecifics such as offspring, mates, and competitors.

The frequency, received level, and duty cycle of the noise determine the potential degree of auditory masking. Similar to hearing loss, the greater the degree of masking, the smaller the ocean space within which an animal can detect biologically relevant sounds.

Physiological Stress

If a sound is detected (i.e., heard or sensed) by an animal, a stress response can occur (Box B7); or the sound can cue or alert the animal (Box B6) without a direct, measurable stress response. If an animal suffers trauma or auditory fatigue, a physiological stress response will occur (Box B8). A stress response is a physiological change resulting from a stressor that is meant to help the animal deal with the stressor. The generalized stress response is characterized by a release of hormones (Reeder and Kramer 2005); however, it is now acknowledged that other chemicals produced in a stress response (e.g., stress markers) exist. For example, a release of reactive oxidative compounds, as occurs in noise-induced

hearing loss (Henderson et al. 2006), occurs in response to some acoustic stressors. Stress hormones include those produced by the sympathetic nervous system, norepinephrine and epinephrine (i.e., the catecholamines), which produce elevations in the heart and respiration rate, increase awareness, and increase the availability of glucose and lipid for energy. Other stress hormones are the glucocorticoid steroid hormones cortisol and aldosterone, which are produced by the adrenal gland. These hormones are classically used as an indicator of a stress response and to characterize the magnitude of the stress response (Hennessy et al. 1979). Oxidative stress occurs when reactive molecules, called reactive oxygen species, are produced in excess of molecules that counteract their activity (i.e., antioxidants).

An acute stress response is traditionally considered part of the startle response and is hormonally characterized by the release of the catecholamines. Annoyance type reactions may be characterized by the release of either or both catecholamines and glucocorticoid hormones. Regardless of the physiological changes that make up the stress response, the stress response may contribute to an animal's decision to alter its behavior. Alternatively, a stimulus may not cause a measurable stress response but may act as an alert or cue to an animal to change its behavior. This response may occur because of learned associations; the animal may have experienced a stress reaction in the past to similar sounds or activities (Box C4), or it may have learned the response from conspecifics. The severity of the stress response depends on the received sound level at the animal (Box A2); the details of the sound-producing activity (Box A1); the animal's life history stage (e.g., juvenile or adult; breeding or feeding season) (Box B5); and the animal's past experience with the stimuli (Box B5). These factors would be subject to individual variation, as well as variation within an individual over time.

An animal's life history stage is an important factor to consider when predicting whether a stress response is likely (Box B5). An animal's life history stage includes its level of physical maturity (i.e., larva, infant, juvenile, sexually mature adult) and the primary activity in which it is engaged such as mating, feeding, or rearing/caring for young. Animals engaged in a critical life activity such as mating or feeding may have a lesser stress response than an animal engaged in a more flexible activity such as resting or migrating (i.e., an activity that does not necessarily depend on the availability of resources). The animal's past experiences with the stimuli or similar stimuli are another important consideration. Prior experience with a stressor may be of particular importance because repeated experience with a stressor may dull the stress response via acclimation (St. Aubin and Dierauf 2001) or increase the response via sensitization.

H.2.3 BEHAVIORAL RESPONSES

Any number of Behavioral Responses can result from a physiological response. An animal responds to the stimulus based on a number of factors in addition to the severity of the physiological response. An animal's experience with the sound (or similar sounds), the context of the acoustic exposure, and the presence of other stimuli contribute to determining its reaction from a suite of possible behaviors.

Behavioral responses fall into two major categories: alterations in natural behavior patterns, and avoidance. These types of reactions are not mutually exclusive, and many overall reactions may be combinations of behaviors or a sequence of behaviors. Severity of behavioral reactions can vary drastically between minor and brief reorientations of the animal to investigate the sound, to severe reactions such as aggression or prolonged flight. The type and severity of the behavioral response will determine the cost to the animal.

Trauma and Auditory Fatigue

Direct trauma and auditory fatigue increases the animal's physiological stress (Box B8), which feeds into the stress response (Box B7). Direct trauma and auditory fatigue increase the likelihood or severity of a behavioral response and increase an animal's overall physiological stress level (Box D10).

Auditory Masking

A behavior decision is made by the animal when the animal detects increased background noise, or possibly when the animal recognizes that biologically relevant sounds are being masked (Box C1). An animal's past experience with the sound-producing activity or similar acoustic stimuli can affect its choice of behavior during auditory masking (Box C4). Competing and reinforcing stimuli may also affect its decision (Box C5).

An animal may exhibit a passive behavioral response when coping with auditory masking (Box C2). It may simply not respond and keep conducting its current natural behavior. An animal may also stop calling until the background noise decreases. These passive responses do not present a direct energetic cost to the animal; however, auditory masking will continue, depending on the acoustic stimuli.

An animal may to actively compensate for auditory masking (Box C3). An animal can vocalize more loudly to make its signal heard over the masking noise. An animal may also shift the frequency of its vocalizations away from the frequency of the masking noise. This shift can actually reduce the masking effect for the animal and other animals that are "listening" in the area. For example, in marine mammals, vocalization changes have been reported from exposure to human-generated noise sources such as sonar, vessel noise, and seismic surveying. Changes included mimicry of the sound, cessation of vocalization, increases and decreases in vocalization length, increases and decreases in vocalization rate, and increases in vocalization frequency and level, while other animals showed no significant changes in the presence of human-generated sound.

An animal's past experiences can be important in determining what behavior decision it may make when dealing with auditory masking (Box C4). Past experience can be with the sound-producing activity itself or with similar acoustic stimuli. For example, an animal may modify its vocalizations to reduce the effects of masking noise.

Other stimuli present in the environment can influence an animal's behavior decision (Box C5). These stimuli can be other acoustic stimuli not directly related to the sound-producing activity; they can be visual, olfactory, or tactile stimuli; the stimuli can be conspecifics or predators in the area; or the stimuli can be the strong drive to engage in a natural behavior. In some cases, natural motivations may suppress any behavioral reactions elicited by the acoustic stimulus. For example, an animal involved in mating or foraging may not react with the same degree of severity as it may have otherwise. Reinforcing stimuli reinforce the behavioral reaction caused by acoustic stimuli. For example, awareness of a predator in the area coupled with the acoustic stimuli may elicit a stronger reaction than the acoustic stimuli itself otherwise would have. The visual stimulus of seeing ships and aircraft, coupled with the acoustic stimuli, may also increase the likelihood or severity of a behavioral response.

Behavioral Reactions and Physiological Stress

A physiological stress response (Box B7) such as an annoyance or startle reaction, or a cueing or alerting reaction (Box B6) may cause an animal to make a behavior decision (Box C6). Any exposure that produces an injury or auditory fatigue is also assumed to produce a stress response (Box B7) and increase the severity or likelihood of a behavioral reaction. Both an animal's past experience (Box C4)

and competing and reinforcing stimuli (Box C5) can affect an animal's behavior decision. The decision can result in three general types of behavioral reactions: no response (Box C9), area avoidance (Box C8), or alteration of a natural behavior (Box C7).

Little data exist that correlate specific behavioral reactions with specific stress responses. Therefore, in practice, the likely range of behavioral reactions is estimated from the acoustic stimuli instead of the magnitude of the stress response. It is assumed that a stress response must exist to alter a natural behavior or cause an avoidance reaction. Estimates of the types of behavioral responses that could occur for a given sound exposure can be determined from the literature.

An animal's past experiences can be important in determining what behavior decision it may make when dealing with a stress response (Box C4). Past experience can be with the sound-producing activity itself or with similar sound stimuli. Bejder et al. (2009) define habituation as, "a process involving a reduction in response over time as individuals learn that there are neither adverse nor beneficial consequences of the occurrence of the stimulus." An animal habituated to a particular stimulus may have a lesser (or no) behavioral response to the stimulus compared to the first time the animal encountered the stimulus. Sensitization is the opposite of habituation, and refers to an increase over time in an animal's behavioral response to a repeated or continuous stimulus (Bejder et al. 2009). An animal sensitized to a particular stimulus exhibits an increasingly intense response to the stimulus (e.g., fleeing faster or farther), because there are significant consequences for the animal. A related behavioral response, tolerance, refers to an animal's ability to endure, or tolerate, a disturbance without a defined response. Habituation and sensitization are measured by the tolerance levels exhibited by animals; habituated animals show a progressively increasing tolerance to stimuli whereas sensitized animals show a progressively decreasing tolerance to stimuli (Bejder et al. 2009).

Other stimuli (Box C5) present in the environment can influence an animal's behavior decision (Box C6). These stimuli may not be directly related to the sound-producing activity, such as visual stimuli; the stimuli can be conspecifics or predators in the area, or the stimuli can be the strong drive to engage or continue in a natural behavior. In some cases, natural motivations (e.g., competing stimuli) may suppress any behavioral reactions elicited by the acoustic stimulus. For example, an animal involved in mating or foraging may not react with the same degree of severity as an animal involved in less-critical behavior. Reinforcing stimuli reinforce the behavioral reaction caused by acoustic stimuli. For example, the awareness of a predator in the area coupled with the acoustic stimuli may elicit a stronger reaction than the acoustic stimuli themselves otherwise would have.

The visual stimulus of seeing human activities such as ships and aircraft maneuvering, coupled with the acoustic stimuli, may also increase the likelihood or severity of a behavioral response. It is difficult to separate the stimulus of the sound from the visual stimulus of the ship or platform creating the sound. The sound may act as a cue, or as one stimulus of many that the animal is considering when deciding how to react. An activity with several platforms (e.g., ships and aircraft) may elicit a different reaction than an activity with a single platform, both with similar acoustic footprints. The total number of vehicles and platforms involved, the size of the activity area, and the distance between the animal and activity are important considerations when predicting behavioral responses.

An animal may reorient or become more vigilant if it detects a sound-producing activity (Box C7). Some animals may investigate the sound using other sensory systems (e.g., vision), and perhaps move closer to the sound source. Reorientation, vigilance, and investigation all require the animal to divert attention and resources and therefore slow or stop their presumably beneficial natural behavior. This can be a

very brief diversion, after which the animal continues its natural behavior, or an animal may not resume its natural behaviors until after a longer period when the animal has habituated to or learned to tolerate the sound or the activity has concluded. An intentional change via an orienting response represents behaviors that would be considered mild disruption. More severe alterations of natural behavior would include aggression or panic.

An animal may choose to leave or avoid an area where a sound-producing activity is taking place (Box C8). Avoidance is the displacement of an individual from an area. A more severe form of this comes in the form of flight or evasion. A flight response is a dramatic change in normal movement to a directed and rapid movement away from the detected location of a sound source. Avoidance of an area can help the animal avoid further acoustic effects by avoiding or reducing further exposure.

An animal may choose not to respond to a sound-producing activity (Box C9). The physiological stress response may not rise to the level that would cause the animal to modify its behavior. The animal may have habituated to the sound or simply learned through past experience that the sound is not a threat. In this case a behavioral effect would not be predicted. An animal may choose not to respond to a sound-producing activity in spite of a physiological stress response. Some combination of competing stimuli may be present such as a robust food patch or a mating opportunity that overcomes the stress response and suppresses any potential behavioral responses. If the noise-producing activity persists over long periods or reoccurs frequently, the stress felt by animals could increase their chronic stress levels.

H.2.4 COSTS TO THE ANIMAL

The potential costs to a marine animal from an involuntary or behavioral response include no measurable cost, expended energy reserves, increased stress, reduced social contact, missed opportunities to secure resources or mates, displacement, and stranding or severe evasive behavior (which may potentially lead to secondary trauma or death). Animals suffer costs on a daily basis from a host of natural situations such as dealing with predator or competitor pressure. If the costs to the animal from an acoustic-related effect fall outside of its normal daily variations, then individuals must recover from significant costs to avoid long-term consequences.

Trauma

Trauma or injury to an animal may reduce its ability to secure food by reducing its mobility or the efficiency of its sensory systems, make the injured individual less attractive to potential mates, or increase an individual's chances of contracting diseases or falling prey to a predator (Box D2). A severe trauma can lead to the death of the individual (Box D1).

Auditory Fatigue and Auditory Masking

Auditory fatigue and masking can impair an animal's ability to hear biologically important sounds (Box D3), especially fainter and distant sounds. Sounds could belong to conspecifics such as other individuals in a social group (e.g., pod, school, etc.), potential mates, potential competitors, or parents/offspring. Biologically important sounds could also be an animal's own biosonar echoes used to detect prey, sounds from predators, and sounds from the physical environment. Therefore, auditory masking or a hearing loss could reduce an animal's ability to contact social groups, offspring, or parents; and reduce opportunities to detect or attract more distant mates. Animals may also use sounds to gain information about their physical environment by detecting the reverberation of sounds in the underwater space or sensing the sound of crashing waves on a nearby shoreline. These cues could be used by some animals to migrate long distances or navigate their immediate environment. Therefore, an animal's ability to

navigate may be impaired if the animal uses acoustic cues from the physical environment to help identify its location. Auditory masking and fatigue both effectively reduce the animal's acoustic space and the ocean volume in which detection and communication are effective.

An animal that modifies its vocalization in response to auditory masking could incur a cost (Box D4). Modifying vocalizations may cost the animal energy from its finite energy budget, interfere with the behavioral function of a call, or reduce a signaler's apparent quality as a mating partner. For example, songbirds that shift their calls up an octave to compensate for increased background noise attract fewer or less-desirable mates, and many terrestrial species advertise body size and quality with low-frequency vocalizations (Slabbekoorn and Ripmeester 2008). Increasing the frequency of these vocalizations could reduce a signaler's attractiveness in the eyes of potential mates even as it improves the overall detectability of the call.

Auditory masking or auditory fatigue may also lead to no measurable costs for an animal. Masking could be of short duration or intermittent so that continuous or repeated biologically important sounds are received by the animal between masking noise. Auditory fatigue could also be inconsequential for an animal if the frequency range affected is not critical for that animal to hear within, or the auditory fatigue is of such short duration (a few minutes) that there are no costs to the individual.

Behavioral Reactions and Physiological Stress

An animal that alters its natural behavior in response to stress or an auditory cue may slow or cease its presumably beneficial natural behavior and instead expend energy reacting to the sound-producing activity (Box D5). Beneficial natural behaviors include feeding, breeding, sheltering, and migrating. The cost of feeding disruptions depends on the energetic requirements of individuals and the potential amount of food missed during the disruption. Alteration in breeding behavior can result in delaying reproduction. The costs of a brief interruption to migrating or sheltering are less clear. Most behavior alterations also require the animal to expend energy for a nonbeneficial behavior. The amount of energy expended depends on the severity of the behavioral response.

An animal that avoids a sound-producing activity may expend additional energy moving around the area, be displaced to poorer resources, miss potential mates, or have social interactions affected (Box D6). Avoidance reactions can cause an animal to expend energy. The amount of energy expended depends on the severity of the behavioral response. Missing potential mates can result in delaying reproduction. Social groups or pairs of animals, such as mates or parent/offspring pairs, could be separated during a severe behavioral response such as flight. Offspring that depend on their parents may die if they are permanently separated. Splitting up an animal group can result in a reduced group size, which can have secondary effects on individual foraging success and susceptibility to predators.

Some severe behavioral reactions can lead to stranding (Box D7) or secondary trauma (Box D8). Animals that take prolonged flight, a severe avoidance reaction, may injure themselves or strand in an environment for which they are not adapted. Some trauma is likely to occur to an animal that strands (Box D8). Trauma can reduce the animal's ability to secure food and mates, and increase the animal's susceptibility to predation and disease (Box D2). An animal that strands and does not return to a hospitable environment quickly will likely die (Box D9).

Elevated stress levels may occur whether or not an animal exhibits a behavioral response (Box D10). Even while undergoing a stress response, competing stimuli (e.g., food or mating opportunities) may overcome an animal's initial stress response during the behavior decision. Regardless of whether the

animal displays a behavioral reaction, this tolerated stress could incur a cost to the animal. Reactive oxygen species produced during normal physiological processes are generally counterbalanced by enzymes and antioxidants; however, excess stress can result in an excess production of reactive oxygen species, leading to damage of lipids, proteins, and nucleic acids at the cellular level (Sies 1997; Touyz 2004).

H.2.5 RECOVERY

The predicted recovery of the animal (Box E1) is based on the cost of any masking or behavioral response and the severity of any involuntary physiological reactions (e.g., direct trauma, hearing loss, or increased chronic stress). Many effects are fully recoverable upon cessation of the sound-producing activity, and the vast majority of effects are completely recoverable over time; whereas a few effects may not be fully recoverable. The availability of resources and the characteristics of the animal play a critical role in determining the speed and completeness of recovery.

Available resources fluctuate by season, location, and year and can play a major role in an animal's rate of recovery (Box E2). Plentiful food can aid in a quicker recovery, whereas recovery can take much longer if food resources are limited. If many potential mates are available, an animal may recover quickly from missing a single mating opportunity. Refuge or shelter is also an important resource that may give an animal an opportunity to recover or repair after an incurred cost or physiological response.

An animal's health, energy reserves, size, life history stage, and resource gathering strategy affect its speed and completeness of recovery (Box E3). Animals that are in good health and have abundant energy reserves before an effect will likely recover more quickly. Adult animals with stored energy reserves (e.g., fat reserves) may have an easier time recovering than juveniles that expend their energy growing and developing and have less in reserve. Large individuals and large species may recover more quickly, also due to having more potential for energy reserves. Animals that gather and store resources, perhaps fasting for months during breeding or offspring rearing seasons, may have a more difficult time recovering from being temporarily displaced from a feeding area than an animal that feeds year round.

Damaged tissues from mild to moderate trauma may heal over time. The predicted recovery of direct trauma is based on the severity of the trauma, availability of resources, and characteristics of the animal. After a sustained injury an animal's body attempts to repair tissues. The animal may also need to recover from any potential costs due to a decrease in resource gathering efficiency and any secondary effects from predators or disease (Box E1). Moderate to severe trauma that does not cause mortality may never fully heal.

Small to moderate amounts of hearing loss may recover over a period of minutes to days, depending on the nature of the exposure and the amount of initial threshold shift. Severe noise-induced hearing loss may not fully recover, resulting in some amount of permanent hearing loss.

Auditory masking only occurs when the sound source is operating; therefore, direct masking effects stop immediately upon cessation of the sound-producing activity (Box E1). Natural behaviors may resume shortly after or even during the acoustic stimulus after an initial assessment period by the animal. Any energetic expenditures and missed opportunities to find and secure resources incurred from masking or a behavior alteration may take some time to recover.

Animals displaced from their normal habitat due to an avoidance reaction may return over time and resume their natural behaviors, depending on the severity of the reaction and how often the activity is

repeated in the area. In areas of repeated and frequent acoustic disturbance, some animals may habituate to or learn to tolerate the new baseline or fluctuations in noise level. More sensitive species, or animals that may have been sensitized to the stimulus over time due to past negative experiences, may not return to an area. Other animals may return but not resume use of the habitat in the same manner as before the acoustic-related effect. For example, an animal may return to an area to feed or navigate through it to get to another area, but that animal may no longer seek that area as refuge or shelter.

Frequent milder physiological responses to an individual may accumulate over time if the time between sound-producing activities is not adequate to give the animal an opportunity to fully recover. An increase in an animal's chronic stress level is also possible if stress caused by a sound-producing activity does not return to baseline between exposures. Each component of the stress response is variable in time, and stress hormones return to baseline levels at different rates. For example, adrenaline is released almost immediately and is used or cleared by the system quickly, whereas glucocorticoid and cortisol levels may take long periods (i.e., hours to days) to return to baseline.

H.2.6 LONG-TERM CONSEQUENCES TO THE INDIVIDUAL AND THE POPULATION

The magnitude and type of effect and the speed and completeness of recovery must be considered in predicting long-term consequences to the individual animal and its population (Box E). Animals that recover quickly and completely from explosive or acoustic-related effects will likely not suffer reductions in their health or reproductive success, or experience changes in habitat utilization (Box F2). No population-level effects would be expected if individual animals do not suffer reductions in their lifetime reproductive success or change their habitat utilization (Box G2).

Animals that do not recover quickly and fully could suffer reductions in their health and lifetime reproductive success; they could be permanently displaced or change how they utilize the environment; or they could die (Box F1).

Severe injuries can lead to reduced survivorship (longevity), elevated stress levels, and prolonged alterations in behavior that can reduce an animal’s lifetime reproductive success. An animal with decreased energy stores or a lingering injury may be less successful at mating for one or more breeding seasons, thereby decreasing the number of offspring produced over its lifetime.

An animal whose hearing does not recover quickly and fully could suffer a reduction in lifetime reproductive success, because it may no longer be able to detect the calls of a mate as well as it could prior to losing hearing sensitivity (Box F1). This example underscores the importance of the frequency of sound associated with the hearing loss and how the animal relies on those frequencies (e.g., for mating, navigating, detecting predators). An animal with decreased energy stores or a PTS may be less successful at mating for one or more breeding seasons, thereby decreasing the number of offspring it can produce over its lifetime.

As mentioned above, the indirect effects of involuntary reaction of masking ends when the acoustic stimuli conclude. The direct effects of auditory masking could have long-term consequences for individuals if the activity was continuous or occurred frequently enough; however, most of the proposed training and testing activities are normally spread over vast areas and occur infrequently in a specific area.

Missed mating opportunities can have a direct effect on reproductive success. Reducing an animal's energy reserves over longer periods can directly reduce its health and reproductive success. Some species may not enter a breeding cycle without adequate energy stores, and animals that do breed may have a decreased probability of offspring survival. Animals displaced from their preferred habitat, or those who utilize it differently, may no longer have access to the best resources. Some animals that leave or flee an area during a noise-producing activity, especially an activity that is persistent or frequent, may not return quickly or at all. This can further reduce an individual's health and lifetime reproductive success.

Frequent disruptions to natural behavior patterns may not allow an animal to fully recover between exposures, which increase the probability of causing long-term consequences to individuals. Elevated chronic stress levels are usually a result of a prolonged or repeated disturbance. Excess stress produces reactive molecules in an animal's body that can result in cellular damage (Sies 1997; Touyz 2004). Chronic elevations in the stress levels (e.g., cortisol levels) may produce long-term health consequences that can reduce lifetime reproductive success.

These long-term consequences to the individual can lead to consequences for the population (Box G1). Population dynamics and abundance play a role in determining how many individuals would need to suffer long-term consequences before there was an effect on the population (Box G1). Long-term abandonment or a change in the utilization of an area by enough individuals can change the distribution of the population. Death has an immediate effect in that no further contribution to the population is possible, which reduces the animal's lifetime reproductive success.

Carrying capacity describes the theoretical maximum number of animals of a particular species that the environment can support. When a population nears its carrying capacity, the lifetime reproductive success in individuals may decrease due to finite resources or predator-prey interactions. Population growth is naturally limited by available resources and predator pressure. If one, or a few animals, in a population are removed or gather fewer resources, then other animals in the population can take advantage of the freed resources and potentially increase their health and lifetime reproductive success. Abundant populations that are near their carrying capacity (theoretical maximum abundance) that suffer effects to a few individuals may not be affected overall.

Populations that exist well below their carrying capacity (e.g., threatened or endangered species populations) may suffer greater consequences from any lasting effects to even a few individuals. Population-level consequences can include a change in the population dynamics, a decrease in the growth rate, or a change in geographic distribution. Changing the dynamics of a population (the proportion of the population within each age group) or their geographic distribution can also have secondary effects on population growth rates.

H.3 Conceptual Framework for Assessing Effects from Energy-Producing Activities

H.3.1 Stimuli

Magnitude of the Energy Stressor

Regulations do not provide threshold criteria to determine the significance of the potential effects from activities that involve the use of varying electromagnetic frequencies or lasers. Many organisms, primarily marine vertebrates, have been studied to determine their thresholds for detecting electromagnetic fields, as reviewed by Normandeau et al. (2011); however, there are no data on

predictable responses to exposure above or below detection thresholds. The types of electromagnetic fields discussed are those from mine neutralization activities (magnetic influence minesweeping). The only types of lasers considered for analysis were low to moderate lasers (e.g., targeting systems, detection systems, laser light detection and ranging) that do not pose a risk to organisms (Swope 2010), and therefore will not be discussed further.

Location of the Energy Stressor

Evaluation of potential energy exposure risks considered the spatial overlap of the resource occurrence and electromagnetic field and high energy laser use. Wherever appropriate, specific geographic areas of potential impact were identified. The greatest potential electromagnetic energy exposure is at the source, where intensity is greatest. The strength of the electromagnetic field decreases by the inverse square law (e.g., if the distance from sensor to source increases by a factor of three, the field strength is reduced by a factor of nine [$3^2 = 9$]). The greatest potential for high energy laser exposure is at the ocean's surface, where high energy laser intensity is greatest. As the laser penetrates the water, 96 percent of the beam is absorbed, scattered, or otherwise lost (Zorn 2000; Ulrich 2004).

Behavior of the Organism

Evaluation of potential energy exposure risk considered the behavior of the organism, especially where the organism lives and feeds (e.g., surface, water column, seafloor). The analysis for electromagnetic devices considered those species with the ability to perceive or detect electromagnetic signals. The analysis for high energy lasers particularly considered those species known to inhabit the surface of the ocean.

H.3.2 Immediate Response and Costs to the Individual

Many different types of organisms (e.g., some invertebrates, fishes, turtles, birds, mammals) are sensitive to electromagnetic fields (Normandeau et al. 2011). An organism that encounters a disturbance in an electromagnetic field could respond by moving toward the source, moving away from it, or not responding at all. The types of electromagnetic devices used in the Proposed Action simulate the electromagnetic signature of a vessel passing through the water column, so the expected response would be similar to that of vessel movement. However, since there would be no actual strike potential, a physiological response would be unlikely in most cases. Recovery of an individual from encountering electromagnetic fields would be variable, but since the physiological response would likely be minimal, as reviewed by Normandeau et al. (2011), any recovery time would also be minimal.

Very little data or information are available to analyze potential impacts on organisms from exposure to high energy lasers. As with humans, the greatest laser-related concern for marine species is damage to an organism's ability to see. High energy lasers may also burn the skin, but the threshold energy level for eye damage is considerably lower, so the analysis considered that lower threshold. Recovery of the individual from eye damage or skin lesion caused by high energy lasers would be based on the severity of the injury and the incidence of secondary infection. Very few studies of this impact are available.

H.3.3 Long-Term Consequences to the Individual and Population

Long-term consequences are considered in terms of a resource's existing population level, growth and mortality rates, other stressors on the resource from the Proposed Action, cumulative impacts on the resource, and the ability of the population to recover from or adapt to impacts. Impacts of multiple or repeated stressors on individuals are cumulative. When stressors are chronic, an organism may

experience reduced growth, health, or survival, which could have population-level impacts (Billard et al. 1981), especially in the case of endangered species.

H.4 Conceptual Framework for Assessing Effects from Physical Disturbance or Strike

H.4.1 Stimuli

Size and Weight of the Objects

To determine the likelihood of a strike and the potential impacts on an organism or habitat that would result from a physical strike, the size and weight of the striking object relative to the organism or habitat must be considered. Most small organisms and early life stages would simply be displaced by the movement generated by a large object moving through, or falling into, the water because they are planktonic (floating organisms) and move with the water; however, animals that occur at or near the surface could be struck. A larger nonplanktonic organism could potentially be struck by an object since it may not be displaced by the movement of the water. Sessile (nonmobile) organisms and habitats could be struck by the object, albeit with less force, on the seafloor. The weight of the object is also a factor that would determine the severity of a strike. A strike by a heavy object would be more severe than a strike by a low-weight object (e.g., a decelerator/parachute, flare end cap, or chaff canister).

Location and Speed of the Objects

Evaluation of potential physical disturbance or strike risk considered the spatial overlap of the resource occurrence and potential striking objects. Analysis of impacts from physical disturbance or strike stressors focuses on proposed activities that may cause an organism or habitat to be struck by an object moving through the air (e.g., aircraft), water (e.g., vessels, in-water devices, towed devices), or dropped into the water (e.g., non-explosive practice munitions and seafloor devices). The area of operation, vertical distribution, and density of these items also play central roles in the likelihood of impact. Wherever appropriate, specific geographic areas of potential impact are identified. Analysis of potential physical disturbance or strike risk also considered the speed of vessels as a measure of intensity. Some vessels move slowly, while others are capable of high speeds.

Buoyancy of the Objects

Evaluation of potential physical disturbance or strike risk in the ocean considered the buoyancy of targets or expended materials during operation, which will determine whether the object will be encountered at the surface, within the water column, or on the seafloor. Once landed on the water surface, buoyant objects have the potential to strike plants and organisms that occur on the sea surface and negatively buoyant objects may strike plants and organisms within the water column or on the seafloor.

Behavior of the Organism

Evaluation of potential physical disturbance or strike risk considered where organisms occur and if they occur in the same geographic area and vertical distribution as those objects that pose strike risks.

H.4.2 Immediate Response and Costs to the Individual

Before being struck, some organisms would sense a pressure wave through the water and respond by remaining in place, moving away from the object, or moving toward it. An organism displaced a small distance by movements from an object falling into the water nearby would likely continue on with no response. However, others could be disturbed and may exhibit a generalized stress response. If the object actually hit the organism, direct injury in addition to stress may result. The function of the stress

response in vertebrates is to rapidly raise the blood sugar level to prepare the organism to flee or fight. This generally adaptive physiological response can become a liability if the stressor persists and the organism cannot return to its baseline physiological state.

Most organisms would respond to sudden physical approach or contact by darting quickly away from the stimulus. Other species may respond by freezing in place or seeking refuge. In any case, the individual must stop whatever it was doing and divert its physiological and cognitive attention to responding to the stressor. The energy costs of reacting to a stressor depend on the specific situation, but in all cases the caloric requirements of stress reactions reduce the amount of energy available to the individual for other functions such as predator avoidance, reproduction, growth, and metabolism.

The ability of an organism to return to what it was doing following a physical strike (or near miss resulting in a stress response) is a function of fitness, genetic, and environmental factors. Some organisms are more tolerant of environmental or human-caused stressors than others and become acclimated more easily. Within a species, the rate at which an individual recovers from a physical disturbance or strike may be influenced by its age, sex, reproductive state, and general condition. An organism that has reacted to a sudden disturbance by swimming at burst speed would tire after some time; its blood hormone and sugar levels may not return to normal for 24 hours. During the recovery period, the organism may not be able to attain burst speeds and could be more vulnerable to predators. If the individual were not able to regain a steady state following exposure to a physical stressor, it may suffer depressed immune function and even death.

H.4.3 Long-Term Consequences to the Population

Long-term consequences are considered in terms of a resource's existing population level, growth and mortality rates, other stressors on the resource from the Proposed Action, cumulative impacts on the resource, and the ability of the population to recover from or adapt to impacts. Impacts of multiple or repeated stressors on individuals are cumulative. When stressors are chronic, an organism may experience reduced growth, health, or survival, which could have population-level impacts (Billard et al. 1981), especially in the case of endangered species.

H.5 Conceptual Framework for Assessing Effects from Entanglement

H.5.1 Stimuli

Physical Properties of the Objects

For an organism to become entangled in military expended materials, the materials must have certain properties, such as the ability to form loops and a high breaking strength. Some items could have a relatively low breaking strength on their own, but that breaking strength could be increased if multiple loops were wrapped around an entangled organism.

Location of the Objects

Evaluation of potential entanglement risk considered the spatial overlap of the resource occurrence and military expended materials. Distribution and density of expended items play a central role in the likelihood of impact. Wherever appropriate, specific geographic areas of potential impact are identified.

Buoyancy of Objects

Evaluation of potential entanglement risk considered the buoyancy of military expended materials to determine whether the object will be encountered within the water column (including the surface) or on the seafloor. Less buoyant materials, such as torpedo guidance wires, sink rapidly to the seafloor. More

buoyant materials include less dense items (e.g., decelerators/parachutes) that are weighted and would sink slowly to the seafloor and could be entrained in currents.

Behavior of the Organism

Evaluation of potential entanglement risk considered the general behavior of the organism, including where the organism typically occurs (e.g., surface, water column, seafloor). The analysis particularly considered those species known to become entangled in nonmilitary expended materials (e.g., "marine debris") such as fishing lines, nets, rope, and other derelict fishing gear that often entangle marine organisms.

H.5.2 Immediate Response and Costs to the Individual

The potential impacts of entanglement on a given organism depend on the species and size of the organism. Species that have protruding snouts, fins, or appendages are more likely to become entangled than smooth-bodied organisms. Also, items could get entangled by an organism's mouth, if caught on teeth or baleen, with the rest of the item trailing alongside the organism. Materials similar to fishing gear, which is designed to entangle an organism, would be expected to have a greater entanglement potential than other materials. An entangled organism would likely try to free itself of the entangling object and in the process may become even more entangled, possibly leading to a stress response. The net result of being entangled by an object could be disruption of the normal behavior, injury due to lacerations, and other sublethal or lethal impacts.

H.5.3 Long-Term Consequences to the Individual and Population

Consequences of entanglement could range from an organism successfully freeing itself from the object or remaining entangled indefinitely, possibly resulting in lacerations and other sublethal or lethal impacts. Stress responses or infection from lacerations could lead to latent mortality. The analysis will focus on reasonably foreseeable long-term consequences of the direct impact, particularly those that could impact the fitness of an individual. Changes in an individual's growth, survival, annual reproductive success, or lifetime reproductive success could have population-level impacts if enough individuals are impacted. This population-level impact would vary among species and taxonomic groups.

H.6 Conceptual Framework for Assessing Effects from Ingestion

H.6.1 Stimuli

Size of the Objects

To assess the ingestion risk from military expended materials, this analysis considered the size of the object relative to the animal's ability to swallow it. Some items are too large to be ingested (e.g., non-explosive practice bombs and most targets) and impacts from these items are not discussed further. However, these items may potentially break down into smaller ingestible pieces over time. Items that are of ingestible size when they are introduced into the environment are carried forward for analysis within each resource section where applicable.

Location of the Objects

Evaluation of potential ingestion risk considered the spatial overlap of the resource occurrence and military expended materials. The distribution and density of expended items play a central role in the likelihood of impact. Wherever appropriate, specific geographic areas of potential impact were identified.

Buoyancy of the Objects

Evaluation of potential ingestion risk considered the buoyancy of military expended materials to determine whether the object will be encountered within the water column (including the surface) or on the seafloor. Less buoyant materials, such as solid metal materials (e.g., projectiles or ordnance fragments), sink rapidly to the seafloor. More buoyant materials include less dense items (e.g., target fragments and decelerators/parachutes) that may be caught in currents and gyres. These materials can remain in the water column for an indefinite period of time before sinking. However, decelerators/parachutes are weighted and would generally sink, unless that sinking is suspended, in the scenario described here.

Feeding Behavior

Evaluation of potential ingestion risk considered the feeding behavior of the organism, including where (e.g., surface, water column, seafloor) and how (e.g., filter feeding) the organism feeds and what it feeds on. The analysis particularly considered those species known to ingest nonfood items (e.g., plastic or metal items).

H.6.2 Immediate Response and Costs to the Individual

Potential impacts of ingesting foreign objects on a given organism depend on the species and size of the organism. Species that normally eat spiny hard-bodied invertebrates would be expected to have tougher mouths and guts than those that normally feed on softer prey. Materials similar in size and shape to the normal diet of an organism may be more likely to be ingested without causing harm to the animal; however, some general assumptions were made. Relatively small objects with smooth edges, such as shells or small-caliber projectiles, might pass through the digestive tract without causing harm. A small sharp-edged item may cause the individual immediate physical distress by tearing or cutting the mouth, throat, or stomach. If the object is rigid and large (relative to the individual's mouth and throat), it may block the throat or obstruct digestive processes. An object may even be enclosed by a cyst in the gut lining. The net result of ingesting large foreign objects is disruption of the normal feeding behavior, which could be sublethal or lethal.

H.6.3 Long-Term Consequences to the Individual and Population

Consequences of ingesting nonfood items could be nutrient deficiency, bioaccumulation, uptake of toxic chemicals, compaction, and mortality. The analysis focused on reasonably foreseeable long-term consequences of the direct impact, particularly those that could impact the fitness of an individual. Changes in an individual's growth, survival, annual reproductive success, or lifetime reproductive success could have population-level impacts if enough individuals were impacted. This population-level impact would vary among species and taxonomic groups.

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Appendix I: Acoustic and Explosives Primer

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APPENDIX I ACOUSTIC AND EXPLOSIVES PRIMER

This section introduces acoustic principles and terminology describing how sound travels or "propagates" in air and water. These terms and concepts are used when analyzing potential impacts due to acoustic sources and explosives used during naval testing and training. This section briefly explains the transmission of sound; introduces some of the basic mathematical formulas used to describe the transmission of sound; and defines acoustical terms, abbreviations, and units of measurement. Because seawater is a very efficient medium for the transmission of sound, the differences between transmission of sound in water and in air are discussed. Finally, it discusses the various sources of underwater sound, including physical, biological, and anthropogenic sounds.

I.1 TERMINOLOGY/GLOSSARY

Sound is an oscillation in pressure, particle displacement, or particle velocity, as well as the auditory sensation evoked by these oscillations, although not all sound waves evoke an auditory sensation (i.e., they are outside of an animal's hearing range) (ANSI S1.1-1994). Sound may be described in terms of both physical and subjective attributes. Physical attributes may be directly measured. Subjective (or sensory) attributes cannot be directly measured and require a listener to make a judgment about the sound. Physical attributes of a sound at a particular point are obtained by measuring pressure changes as sound waves pass. The following material provides a short description of some of the basic parameters of sound.

I.1.1 PARTICLE MOTION AND SOUND PRESSURE

Sound can be described as a vibration traveling through a medium (air or water in this analysis) in the form of a wave. Introducing a vibration from a sound source into water causes the water particles to vibrate, or oscillate about their original position, and collide with each other, transferring the vibration through the water in the form of a wave. As the sound wave travels through the water, the particles of water oscillate but do not actually travel with the wave. The result is a mechanical disturbance (i.e., the sound wave) that propagates away from the sound source.

Sound has two components: particle motion and pressure. Particle motion is quantified as the velocity, amount of displacement (i.e., amplitude), and direction of the displacement of the particles in the medium. The pressure component of sound is created when vibrations in the medium compress and then decompress the particles in the medium in an oscillating manner, resulting in fluctuations in pressure that propagate through the medium as a sound wave. The basic unit of sound pressure is the Pascal (Pa) (1 Pa = 1.45×10^{-4} pounds per square inch), although the most commonly encountered unit is the micropascal (µPa) (1 µPa = 1×10^{-6} Pascal). Animals with an eardrum or similar structure directly detect the pressure component of sound. Some marine fish also have specializations to detect pressure changes. Certain animals (e.g., most invertebrates and many marine fish) do not have anatomical structures that enable them to detect the pressure component of sound and are only sensitive to the particle motion component of sound. The particle motion component of sound that these animals can detect degrades more rapidly with distance from the sound source than the pressure component, such that particle motion is most detectable by these animals near the sound source. This difference in acoustic energy sensing mechanisms limits the range at which these animals can detect most sound sources analyzed in this document.

I.1.2 FREQUENCY

The number of oscillations or waves per second is called the frequency of the sound, and the metric is Hertz (Hz). One Hz is equal to one oscillation per second, and 1 kilohertz (kHz) is equal to 1,000 oscillations per second. The inverse of the frequency is the period or duration of one acoustic wave.

Frequency is the physical attribute most closely associated with the subjective attribute "pitch"; the higher the frequency, the higher the pitch. Human hearing generally spans the frequency range from 20 Hz to 20 kHz. The pitch based on these frequencies is subjectively "low" (at 20 Hz) or "high" (at 20 kHz).

Pure tones have a constant, single frequency. Complex tones contain multiple, discrete frequencies, rather than a single frequency. Broadband sounds are spread across many frequencies. The frequency range of a sound is called its bandwidth. A harmonic of a sound at a particular frequency is a multiple of that frequency (e.g., harmonic frequencies of a 2 kHz tone are 4 kHz, 6 kHz, 8 kHz, etc.). A source operating at a nominal frequency may emit several harmonic frequencies at much lower sound pressure levels.

In this document, sounds are generally described as either low- (less than 1 kHz), mid- (1 kHz–10 kHz), high- (greater than 10 kHz–100 kHz), or very high- (greater than 100 kHz) frequency. Hearing ranges of marine animals (e.g., fish, birds, and marine mammals) are quite varied and are species-dependent. For example, some fish can hear sounds below 100 Hz and some species of marine mammals have hearing capabilities that extend above 100 kHz. Discussions of sound and potential impacts must therefore focus not only on the sound pressure, but the composite frequency of the sound and the species considered.

I.1.3 DUTY CYCLE

Duty cycle describes the portion of time that a sound source actually generates sound. It is defined as the percentage of the time during which a sound is generated over a total operational period. For example, if a sound navigation and ranging (sonar) source produces a 10-second ping once every 100 seconds, the duty cycle is 10 percent. Duty cycles vary among different acoustic sources; in general, a low duty cycle is 20 percent or less and a high duty cycle is 80 percent or higher.

I.1.4 LOUDNESS

Sound levels are normally expressed in decibels (dB), a commonly misunderstood term. Although the term decibel always means the same thing, decibels may be calculated in several ways, and the explanations of each can quickly become both highly technical and confusing.

Because mammalian ears can detect large pressure ranges and humans judge the relative loudness of sounds by the ratio of the sound pressures (a logarithmic behavior), sound pressure level is described by taking the logarithm of the ratio of the sound pressure to a reference pressure (American National Standards Institute 1994). Use of a logarithmic scale compresses the wide range of pressure values into a more usable numerical scale. (The softest audible sound has a power of about 0.000000000001 watt/square meter (m^2) and the threshold of pain is around 1 watt/m^2. With the advantage of the logarithmic scale, this ratio is efficiently described as 120 dB.)

On the decibel scale, the smallest audible sound (near total silence) is 0 dB. A sound 10 times more powerful is 10 dB. A sound 100 times more powerful than near total silence is 20 dB. A sound 1,000

times more powerful than near total silence is 30 dB. Table I-1 compares common sounds to their approximate decibel rating.

Table I-1: Common In-Air Sounds and their Approximate Decibel Ratings

Source	Source Level (dB re 20 µPa at 1 m)
Near total silence	0
Whisper	15
Normal conversation	60
Lawnmower	90
Car horn	110
Rock concert	120
Gunshot	140 (peak)

Note: dB re 20 µPa at 1 m = decibels referenced to 20 micropascals at 1 meter

I.2 PREDICTING HOW SOUND TRAVELS

Sounds are produced throughout a wide range of frequencies, including frequencies beyond the audible range of a given receptor. Most sounds heard in the environment do not consist of a single frequency, but rather a broad band of frequencies differing in sound level. The intensities of each frequency add to generate perceptible sound.

The speed of sound is not affected by the intensity, amplitude, or frequency of the sound, but rather depends wholly on characteristics (e.g., the density and the compressibility) of the medium through which it is passing. Sound travels faster through a medium that is harder to compress. For example, water is more difficult to compress than air, and sound travels approximately 1,100 feet per second (ft./s [340 meters per second {m}/s]) in air and 4,900 ft./s (1,500 m/s) in seawater.

The speed of sound in air is primarily influenced by temperature, relative humidity, and pressure, because these factors affect the density and compressibility of air. Generally, the speed of sound in air increases as air temperature increases. Sound travels faster in seawater than in air, because seawater is more difficult to compress than air, making seawater a more efficient medium for the transmission of sound. As with air, the speed of sound through seawater increases with increasing temperature, and to a lesser degree, with increasing pressure and salinity.

In the simple case of sound propagating from a point source without obstruction or reflection, the sound waves take on the shape of an expanding sphere. As spherical propagation continues, the sound energy is distributed over an ever-larger area following the inverse square law: the intensity of a sound wave decreases inversely with the square of the distance between the source and the receptor. For example, doubling the distance between the receptor and a sound source results in a reduction in the intensity of the sound of one-fourth of its initial value; tripling the distance results in one-ninth of the original intensity, and so on (Figure I-1). As expected, sound intensity drops at increasing distance from the point source. In spherical propagation, sound pressure levels drop an average of 6 dB for every doubling of distance from the source. Potential impacts on sensitive receptors, then, are directly related to the distance from the receptor to the noise source, and the intensity of the noise source itself.

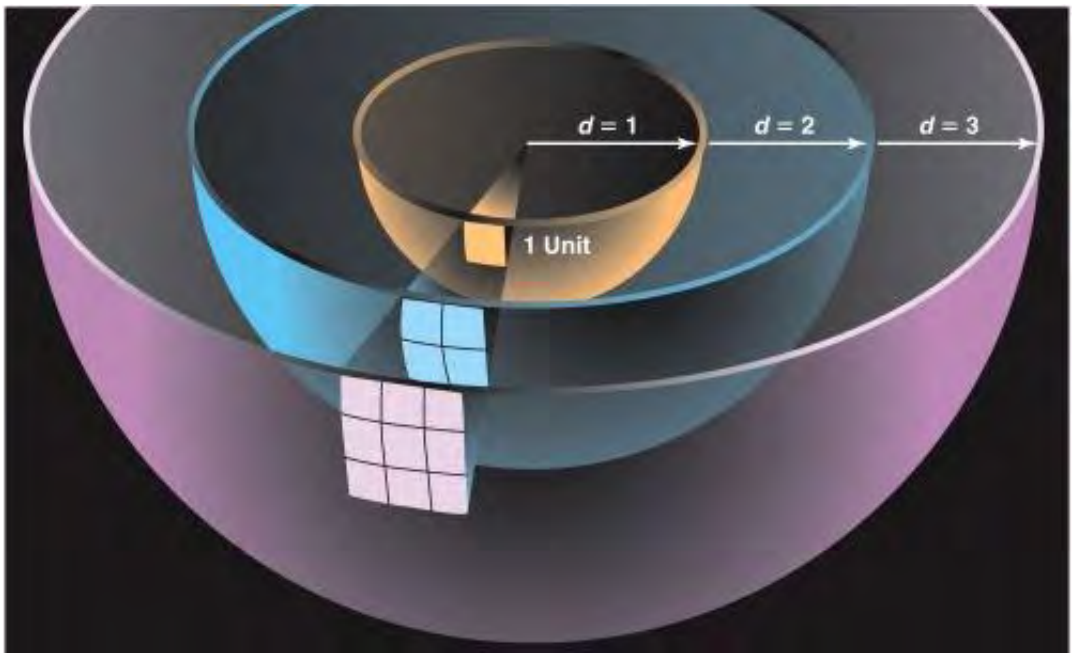


Figure I-1: Graphical Representation of the Inverse-Square Relationship in Spherical Spreading

While the concept of a sound wave traveling from its source to a receptor is relatively simple, sound propagation is quite complex because of the simultaneous presence of numerous sound waves of different frequencies and other phenomena such as reflections of sound waves and subsequent constructive (additive) or destructive (cancelling) interferences between reflected and incident waves. Other factors such as refraction, diffraction, bottom type, and surface conditions also affect sound propagation. While simple examples are provided here for illustration, the Navy Acoustic Effects Model used to quantify acoustic exposures to marine mammals and sea turtles takes into account the influence of multiple factors to predict acoustic propagation (Marine Species Modeling Team 2012).

I.2.1 SOUND ATTENUATION AND TRANSMISSION LOSS

As a sound wave passes through a medium, the intensity decreases with distance from the sound source. This phenomenon is known as attenuation or propagation loss. Sound attenuation may be described in terms of transmission loss (TL). The units of transmission loss are dB. The transmission loss is used to relate the source level (SL), defined as the sound pressure level produced by a sound source at a distance of 3.3 ft. (1 m), and the received level (RL) at a particular location, as follows:

$$RL = SL - TL$$

The main contributors to sound attenuation are as follows:

- Geometrical spreading of the sound wave as it propagates away from the source
- Sound absorption (conversion of sound energy into heat)
- Scattering, diffraction, multipath interference, boundary effects
- Other nongeometrical effects (Urick 1983)

I.2.2 SPREADING LOSS

Spreading loss is a geometrical effect representing regular weakening of a sound wave as it spreads out from a source (Campbell et al. 1988). Spreading describes the reduction in sound pressure caused by the increase in surface area as the distance from a sound source increases. Spherical and cylindrical spreading are common types of spreading loss.

As described before, a point sound source in a homogeneous medium without boundaries will radiate spherical waves—the acoustic energy spreads out from the source in the form of a spherical shell. As the distance from the source increases, the shell surface area increases. If the sound power is fixed, the sound intensity must decrease with distance from the source (intensity is power per unit area). The surface area of a sphere is $4\pi r^2$, where r is the sphere radius, so the change in intensity is proportional to the radius squared. This relationship is known as the spherical spreading law. The transmission loss for spherical spreading is:

$$TL = 20\log_{10} r$$

where *r* is the distance from the source. This is equivalent to a 6 dB reduction in sound pressure level for each doubling of distance from the sound source. For example, calculated transmission loss for spherical spreading is 40 dB at 328.1 ft. (100 m) and 46 dB at 656.2 ft. (200 m).

In cylindrical spreading, spherical waves expanding from the source are constrained by the water surface and the seafloor and take on a cylindrical shape. In this case the sound wave expands in the shape of a cylinder rather than a sphere and the transmission loss is:

$$TL = 10\log_{10} r$$

Cylindrical spreading is an approximation to wave propagation in a water-filled channel with horizontal dimensions much larger than the depth. Cylindrical spreading predicts a 3 dB reduction in sound pressure level for each doubling of distance from the source. For example, calculated transmission loss for cylindrical spreading is 20 dB at 328.1 ft. (100 m) and 23 dB at 656.2 ft. (200 m).

I.2.2.1 Reflection and Refraction

When a sound wave propagating in a medium encounters a second medium with a different density (e.g., the air-water boundary) part of the incident sound will be reflected back into the first medium and part will be transmitted into the second medium (Kinsler et al. 1982). The propagation direction will change as the sound wave enters the second medium; this phenomenon is called refraction. Refraction may also occur within a single medium if the properties of the medium change enough to cause a variation in the sound speed.

Refraction of sound resulting from spatial variations in the sound speed is one of the most important phenomena that affect sound propagation in water (Urick 1983). The sound speed in the ocean primarily depends on hydrostatic pressure (i.e., depth) and temperature. Sound speed increases with both hydrostatic pressure and temperature. In seawater, temperature has the most important effect on sound speed for depths less than about 1,000 ft. (300 m). Below 4,900 ft. (1,500 m), the hydrostatic pressure is the dominant factor because the water temperature is relatively constant. The variation of sound speed with depth in the ocean is called a sound speed profile.

Although the actual variations in sound speed are small, the existence of sound speed gradients in the ocean has an enormous effect on the propagation of sound in the ocean. If one pictures sound as rays emanating from an underwater source, the propagation of these rays changes as a function of the sound speed profile in the water column. Specifically, the directions of the rays bend toward regions of slower sound speed. This phenomenon creates ducts in which sound becomes "trapped," allowing it to propagate with high efficiency for large distances within certain depth boundaries. During winter months, the reduced sound speed at the surface due to cooling can create a surface duct that efficiently propagates sound such as shipping noise. The deep sound channel or Sound Frequency and Ranging channel is another duct that exists where sound speeds are lowest in the water column (2,000–4,000 ft. [600 m–1,200 m] depth at the mid-latitudes). Intense low-frequency underwater sounds, such as explosions, can be detected halfway around the world from their source via the Sound Frequency and Ranging channel (Baggeroer and Munk 1992).

I.2.2.2 Diffraction, Scattering, and Reverberation

Sound waves experience diffraction in much the same manner as light waves. Diffraction may be thought of as the bending of a sound wave around an obstacle. Common examples include sound heard from a source around the corner of a building and sound propagating through a small gap in an otherwise closed door or window. An obstacle or inhomogeneity (e.g., smoke, suspended particles, or gas bubbles) in the path of a sound wave causes scattering if secondary sound spreads out from it in a variety of directions (Pierce 1989). Scattering is similar to diffraction. Normally diffraction is used to describe sound bending or scattering from a single object, and scattering is used when there are multiple objects. Reverberation, or echo, refers to the prolongation of a sound that occurs when sound waves in an enclosed space are repeatedly reflected from the boundaries defining the space, even after the source has stopped emitting.

I.2.2.3 Multipath Propagation

In multipath propagation, sound may not only travel a direct path from a source to a receiver, but also be reflected from the surface or bottom multiple times before reaching the receiver (Urick 1983). At some distances, the reflected wave will be in phase with the direct wave (their waveforms add together) and at other distances the two waves will be out of phase (their waveforms cancel). The existence of multiple sound paths, or rays, arriving at a single point can result in multipath interference, a condition that permits the addition and cancellation between sound waves resulting in the fluctuation of sound levels over short distances. A special case of multipath propagation loss is called the Lloyd mirror effect, where the sound field near the water's surface reaches a minimum because of the destructive interference (cancellation) between the direct sound wave and the sound wave being reflected from the surface. This can cause the sound level to decrease dramatically within the top few meters of the water column.

I.2.2.4 Surface and Bottom Effects

Because the sea surface reflects and scatters sound, it has a major effect on the propagation of underwater sound in applications where either the source or receiver is at a shallow depth (Urick 1983). If the sea surface is smooth, the reflected sound pressure is nearly equal to the incident sound pressure; however, if the sea surface is rough, the amplitude of the reflected sound wave will be reduced.

The sea bottom is also a reflecting and scattering surface, similar to the sea surface. Sound interaction with the sea bottom is more complex, however, primarily because the acoustic properties of the sea bottom are more variable and the bottom is often layered into regions of differing density. For a hard

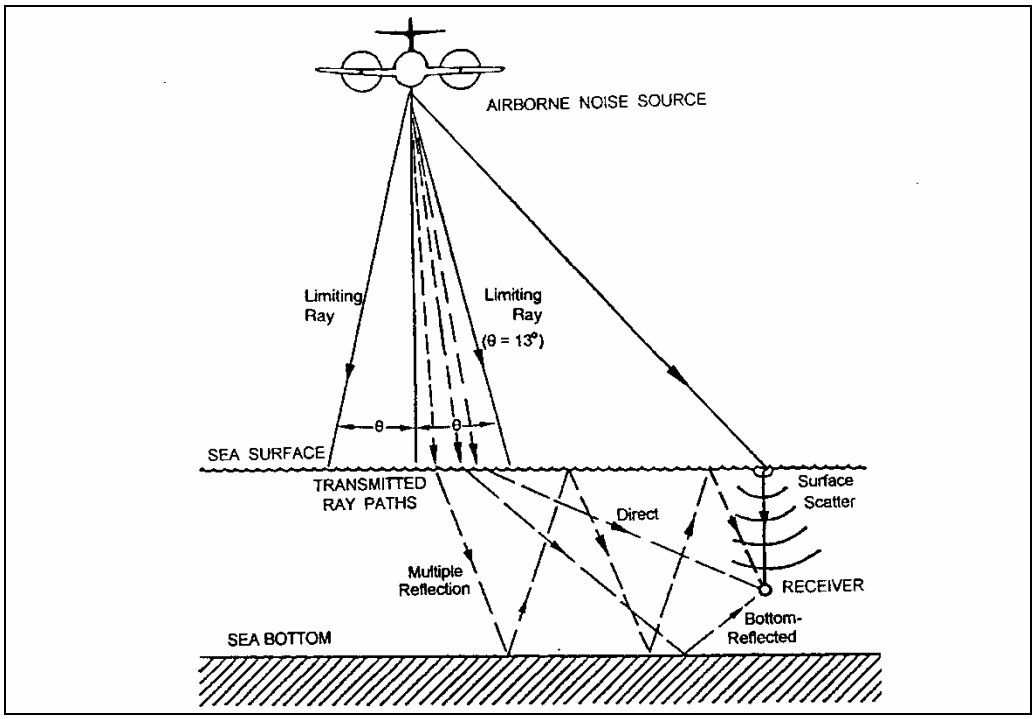
bottom such as rock, the reflected wave will be approximately in phase with the incident wave. Thus, near the ocean bottom, the incident and reflected sound pressures may add together, resulting in an increased sound pressure near the sea bottom.

I.2.2.5 Air-Water Interface

Sound from aerial sources such as aircraft, muzzle blasts, and projectile sonic booms, can be transmitted into the water. The most studied of these sources are fixed-wing aircraft and helicopters, which create noise with most energy below 500 Hz. Noise levels in water are highest at the surface and are highly dependent on the altitude of the aircraft and the angle at which the aerial sound encounters the ocean surface. Transmission of the sound once it is in the water is identical to any other sound as described in the section above.

Transmission of sound from a moving airborne source to a receptor underwater is influenced by numerous factors and has been addressed by Young (1973), Urick (1983), Richardson et al. (1995), Eller and Cavanagh (2000), Laney and Cavanagh (2000), and others. Sound is transmitted from an airborne source to a receptor underwater by four principal means: (1) a direct path, refracted upon passing through the air-water interface; (2) direct-refracted paths reflected from the bottom in shallow water; (3) evanescent transmission in which sound travels laterally close to the water surface; and (4) scattering from interface roughness due to wave motion.

Airborne sound is refracted upon transmission into water because sound waves move faster through water than through air (a ratio of about 4:1). When a sound wave hits the surface of the water at angles greater than 13 degrees from vertical, all of the sound is reflected and no sound enters the water. As a result, most of the acoustic energy transmitted into the water from an aircraft arrives through a relatively narrow cone extending vertically downward from the aircraft (Figure I-2). The intersection of this cone with the surface traces a “footprint” directly beneath the flight path, with the width of the footprint being a function of aircraft altitude. Sound may enter the water outside of this cone due to surface scattering and as evanescent waves, which travel laterally near the water surface.



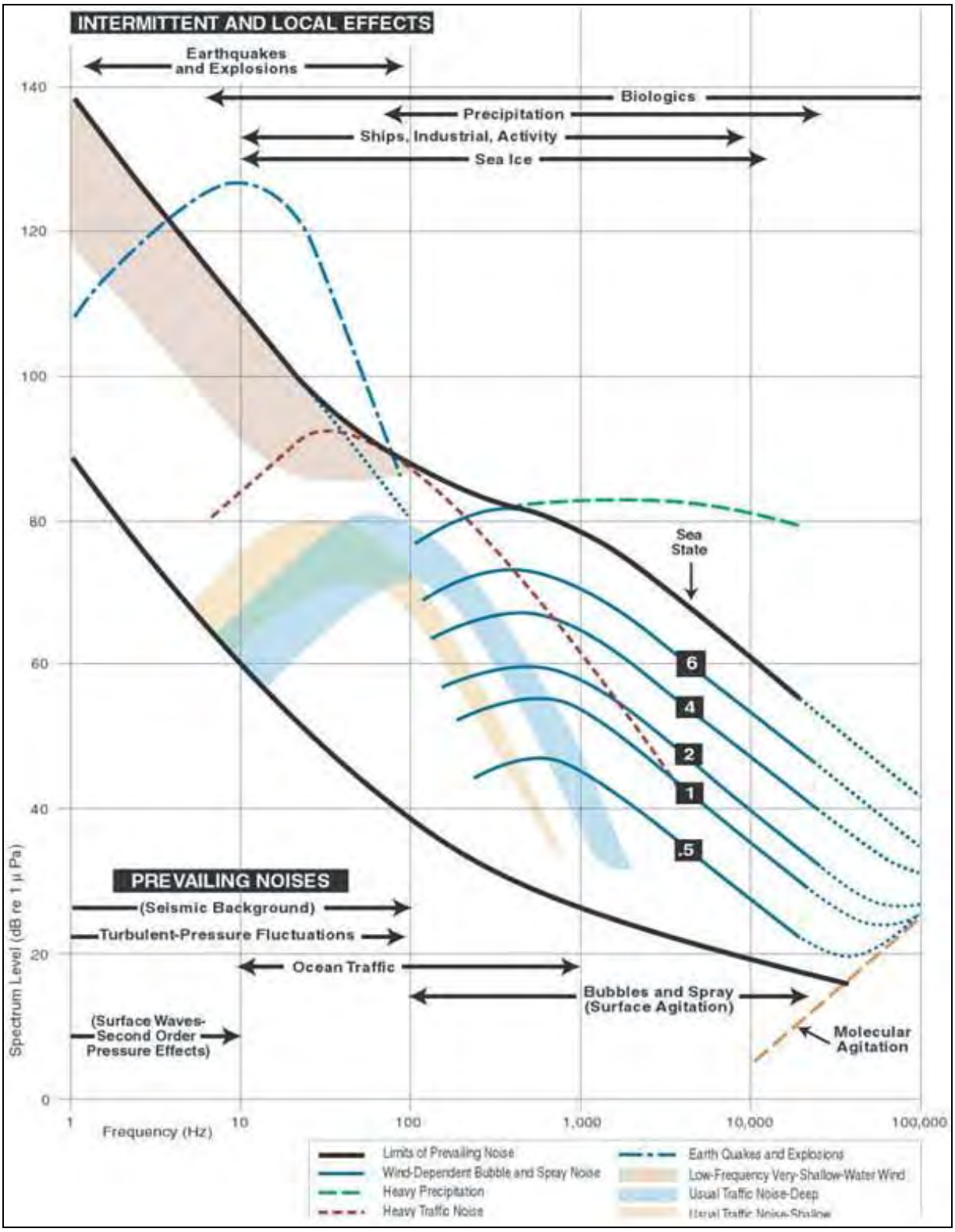
Source: Richardson et al. 1995

Figure I-2: Characteristics of Sound Transmission through the Air-Water Interface

The sound pressure field is actually doubled (+6 dB) at the air-to-water interface because of the large difference in the acoustic properties of water and air. For example, an airborne sound with a sound pressure level of 100 dB re 1 µPa at the sea surface becomes 106 dB re 1 µPa just below the surface. The pressure and sound levels then decrease with increasing distance as they would for any other in-water noise.

I.3 SOURCES OF SOUND

Ambient noise is the collection of ever-present sounds of both natural and human-generated origin. Ambient noise in the ocean comprises sound generated by natural physical, natural biological, and anthropogenic (human-generated) sources (Figure I-3). Preindustrial physical and biological noise sources in marine environments were often not high enough to interfere with the hearing of marine animals (Richardson et al. 1995). However, the increase in anthropogenic noise sources in recent times is a concern.



Source: National Research Council (2003), adapted from Wenz (1962)

Figure I-3: Oceanic Ambient Noise Levels from 1 Hertz to 100,000 Hertz, Including Frequency Ranges for Prevalent Noise Sources

Except for some sounds generated by marine mammals, most natural ocean sound is broadband (composed of a spectrum of numerous frequencies). Virtually the entire frequency spectrum is represented in ambient sound sources as shown in Figure I-3 (National Research Council 2003, adapted from Wenz 1962). Earthquakes and explosions produce sound signals from 1 Hz to 100 Hz; marine species can produce signals from 100 Hz to more than 10,000 Hz; and commercial shipping, industrial activities, and naval ships have signals between 10 Hz and 10,000 Hz (Figure I-3). Spray and bubbles associated with breaking waves are the major contributors to the ambient sound in the 500 Hz to 100,000 Hz range. At frequencies greater than 100,000 Hz, "thermal noise" caused by the random motion of water molecules is the primary source. Natural sources, especially from wave and tidal action, can cause coastal environments to have particularly high ambient sound levels.

I.3.1 UNDERWATER SOUNDS

Physical, biological, and anthropogenic sounds all contribute to the ambient underwater noise environment. Example source levels for various underwater sounds are shown in Table I-2. Many naturally occurring sounds have source levels similar to anthropogenic sounds.

Table I-2: Source Levels of Common Underwater Sounds

Source	Source Level (dB re 1 µPa at 1 m)
Ice breaker ship	193[1]
Large tanker	186[1]
Seismic airgun array (32 guns)	259 (peak)[1]
Dolphin whistles	125–173[1]
Dolphin clicks	194–219[2]
Humpback whale song	144–174[3]
Snapping shrimp	183–189[4]
Sperm whale click	236[5]
Naval mid-frequency active sonar (SQS-53)	235
Lightning strike	260[6]
Seafloor volcanic eruption	255[7]

[1] Richardson et al. 1995, [2] Rasmussen et al. 2002, [3] Payne and Payne 1985; Thompson et al. 1979, [4] Au and Banks 1998, [5] Levenson 1974; Watkins 1980, [6] Hill 1985, [7] Northrop 1974

Note: dB re 1 µPa at 1 m = decibels referenced to 1 micropascal at 1 meter

I.3.2 PHYSICAL SOURCES OF UNDERWATER SOUND

Physical processes that create sound in the ocean include rain, wind, waves, sea ice, lightning strikes at the sea surface, undersea earthquakes, and eruptions from undersea volcanoes. Generally, these sound sources contribute to a rise in the ambient sound levels on an intermittent basis. Underwater sound from rain typically is between 1 and 10 kHz. Wind produces frequencies between 100 Hz and 30 kHz, while wave-generated sound is a significant contributor in the infrasonic range (i.e., 1 to 20 Hz) (Simmonds et al. 2003). Seismic activity results in the production of low-frequency sounds that can be heard for great distances.

I.3.3 BIOLOGICAL SOURCES OF UNDERWATER SOUND

Marine animals use sound both passively and actively to navigate, communicate, locate food, reproduce, and detect predators and other important environmental cues. Sounds produced by marine species can increase ambient sound levels by nearly 20 dB over the range of a few kHz (e.g., crustaceans and fish) or over the range of tens to hundreds of kHz (e.g., dolphin clicks and whistles). For example, reproductive activity, including courtship and spawning, accounts for the majority of sounds produced by fish. During the spawning season, croakers (family Sciaenidae) vocalize for many hours and often dominate the acoustic environment (Ramcharitar et al. 2006). Other species, including baleen whales (Mysticetes) and toothed whales and dolphins (Odontocetes) produce a wide variety of sounds in many different behavioral contexts. These sounds can include tonal calls, clicks, whistles, and pulsed sounds, which cover a wide range of frequencies depending on the species and sound type produced. For instance, bottlenose dolphin clicks and whistles have a dominant frequency range of 110–130 kHz and 3.5–14.5 kHz, respectively (Au 1993). In addition, sperm whale clicks range in frequency from 0.1 kHz-30 kHz, with dominant energy in two bands (2–4 kHz and 10–16 kHz) (Richardson et al. 1995). Blue and fin whales produce low-frequency moans at frequencies of 10–25 Hz. Colonies of snapping shrimp can generate sounds at frequencies of 2–15 kHz.

I.3.4 ANTHROPOGENIC SOURCES OF UNDERWATER SOUND

In addition to sounds generated during Navy training and testing, other non-Navy activities also introduce similar types of anthropogenic (human-generated) sound into the ocean from a number of sources, including non-military vessel traffic, industrial operations onshore (pile driving), seismic profiling for oil exploration, oil drilling, underwater explosions, and in-air sources that can enter the water. Noise levels resulting from human activities in coastal and offshore areas are increasing; however, there are few historical records of ambient noise data to substantiate the level of increase. Some studies have documented increases in ambient noise off California over the last several decades (Andrew et al. 2002, McDonald et al. 2006, McDonald et al. 2008).

Commercial shipping is the most widespread source of human-made, low-frequency (0–1,000 Hz) noise in the oceans and may contribute more than 75 percent of all human-made sound in the sea (International Council for the Exploration of the Sea 2005), particularly in coastal areas and near shipping lanes (see Figure 3.12-1 for commercial shipping lanes in the Study Area). There are approximately 20,000 large commercial vessels at sea worldwide at any given time. Because low-frequency sounds carry for long distances, a large vessel emitting sound at 6.8 Hz can be detected 75–250 nautical miles away (Polefka 2004). The dominant component of low-frequency ambient noise is commercial tankers, which contribute twice as much noise as cargo vessels and at least 100 times as much noise as research vessels (Hatch et al. 2008). Most of these sounds are produced as a result of propeller cavitation (when air spaces created by the motion of propellers collapse) (Southall et al. 2007).

High-intensity, low-frequency impulse sounds are emitted during seismic surveys to determine the structure and composition of the geological formations below the sea bed to identify potential hydrocarbon reservoirs (i.e., oil and gas exploration) (Simmonds et al. 2003).

I.3.5 AERIAL SOUNDS

Aerial sounds may be produced by physical, biological, or anthropogenic sources. These sounds may be transmitted across the air-water interface as well. Of the physical sources of sound, surf noise is one of the most dominant. The highest sound levels from surf are typically low frequency (below 100 Hz). Biological sources of sound can be a significant contribution to the noise level in coastal environments

such as areas occupied by highly vocal sea lions. Anthropogenic noise sources like ships, industrial sites, cars, and airplanes are also potential contributors.

I.3.6 NAVY SOURCES OF SOUND IN THE WATER

Many of the Navy's proposed activities may introduce sound into the ocean. The type of sound will determine how that source is measured and evaluated for potential impacts to the environment. All of the Navy-produced sounds may be categorized as impulse or non-impulse. Impulse sounds feature a very rapid increase to high pressures, followed by a rapid return to the static pressure. Impulse sounds are often produced by processes involving a rapid release of energy or mechanical impacts (Hamernik and Hsueh 1991). Non-impulse sounds lack the rapid rise time and can have longer durations than impulse sounds. Non-impulse sound can be continuous or intermittent. See Figure I-4 for examples of impulse and non-impulse underwater sound sources.

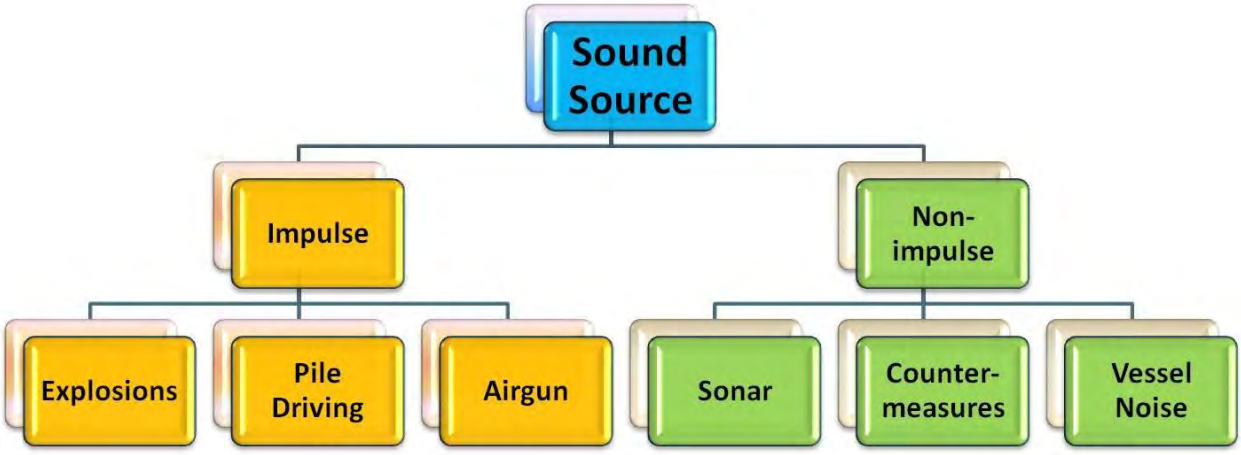


Figure I-4: Examples of Impulse and Non-impulse Sound Sources

I.4 SOUND METRICS

I.4.1 PRESSURE

Various sound pressure metrics are illustrated in Figure I-5 for a (a) non-impulse, and (b) an impulse sound. Sound pressure varies differently with time for non-impulse and impulse sounds. As shown in Figure I-5, the non-impulse sound has a relatively gradual rise in pressure from static pressure (the ambient pressure without the added sound), while the impulse sound has a near-instantaneous rise to a higher peak pressure. The peak pressure shown on both illustrations is the maximum absolute value of the instantaneous sound pressure during a specified time interval, which accounts for the values of peak pressures below the static (ambient) pressure (American National Standards Institute 1994). Peak-to-peak pressure is the difference between the maximum and minimum sound pressures. The root-mean-squared sound pressure is often used to describe the average pressure level of sounds. As the name suggests, this method takes the square root of the average squared sound pressure values over a time interval. The duration of this time interval can have a strong effect on the measured root-mean-squared sound pressure for a given sound, especially where pressure levels vary significantly, as during an impulse. If the analysis duration includes a significant portion of the waveform after the impulse has ended and the pressure has returned to near static, the root-mean-squared level would be relatively low. If the analysis duration includes the highest pressures of the impulse and excludes the portion of the waveform after the impulse has terminated, the root-mean-squared level would be comparatively

high. For this reason, it is important to specify the duration used to calculate the root-mean-squared pressure for impulse sounds.

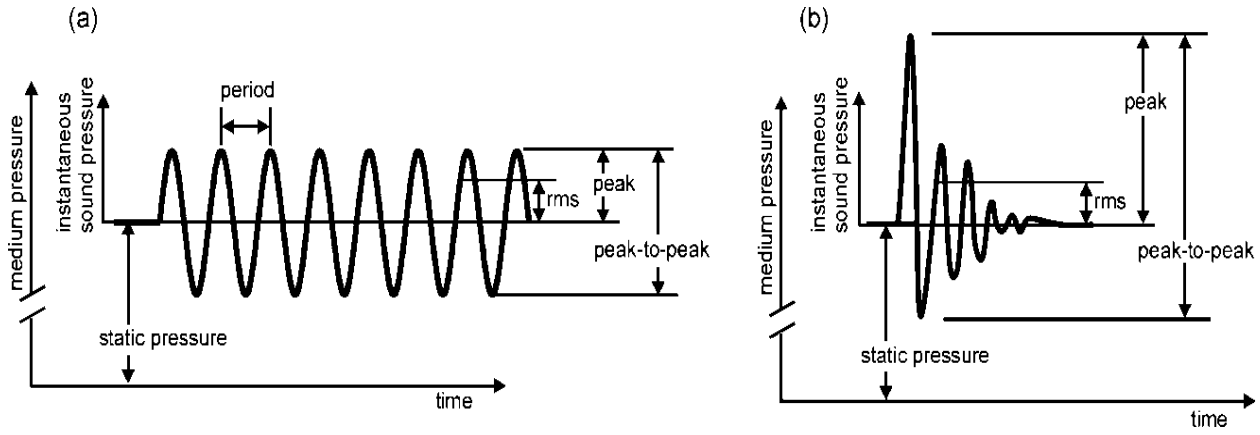


Figure I-5: Various Sound Pressure Metrics for a Hypothetical (a) Pure Tone (Non-Impulse) and (b) Impulse Sound

I.4.2 SOUND PRESSURE LEVEL

Because mammalian ears can detect large pressure ranges and humans judge the relative loudness of sounds by the ratio of the sound pressures (a logarithmic behavior), sound pressure level is described by taking the logarithm of the ratio of the sound pressure to a reference pressure (American National Standards Institute 1994). Use of a logarithmic scale compresses the wide range of pressure values into a more usable numerical scale.

Sound levels are normally expressed in dB. To express a pressure *X* in decibels using a reference pressure X_{ref}, the equation is:

$$20\log_{10}\left(\frac{X}{X_{ref}}\right)$$

The pressure *X* is the root-mean-square value of the pressure. When a value is presented in decibels, it is important to specify the value and units of the reference pressure. Normally the decibel value is given, followed by the text "re," meaning "with reference to," and the value and unit of the reference pressure. The standard reference pressures are 1 µPa for water and 20 µPa for air (American National Standards Institute 1994). It is important to note that, because of the difference in reference units between air and water, the same absolute pressures would result in different dB values for each medium.

I.4.3 SOUND EXPOSURE LEVEL

When analyzing effects on marine animals from multiple moderate-level sounds, it is necessary to have a metric that quantifies cumulative exposure(s) (American National Standards Institute 1994). The Sound Exposure Level (SEL) can be thought of as a composite metric that represents both the intensity of a sound and its duration. Individual time-varying noise events (e.g., a series of sonar pings) have two

main characteristics: (1) a sound level that changes throughout the event and (2) a period of time during which the source is exposed to the sound. Cumulative SEL provides a measure of the net impact of the entire acoustic event, but it does not directly represent the sound level heard at any given time. Sound exposure level is determined by calculating the decibel level of the cumulative sum-of-squared pressures over the duration of a sound, with units of dB re 1 µPa-squared second (μPa^2-s) for sounds in water.

Some rules of thumb for SEL are as follows:

- The numeric value of SEL is equal to the sound pressure level of a one-second sound that has the same total energy as the exposure event. If the sound duration is one second, sound pressure level and SEL have the same numeric value (but not the same reference quantities). For example, a one-second sound with a sound pressure level of 100 dB re 1 µPa has a SEL of 100 dB re 1 μPa^2-s.
- If the sound duration is constant but the sound pressure level changes, SEL will change by the same number of decibels as the sound pressure level.
- If the sound pressure level is held constant and the duration (*T*) changes, SEL will change as a function of $10\log_{10}(T)$:

    - $10\log_{10}(10) = 10$, so increasing duration by a factor of 10 raises SEL by 10 dB.
    - $10\log_{10}(0.1) = -10$, so decreasing duration by a factor of 10 lowers SEL by 10 dB.
    - Since $10\log_{10}(2) \approx 3$, so doubling the duration increases SEL by 3 dB.
    - $10\log_{10}(1/2) \approx -3$, so halving the duration lowers SEL by 3 dB.

Figure I-6 illustrates the summation of energy for a succession of sonar pings. In this hypothetical case, each ping has the same duration and sound pressure level. The SEL at a particular location from each individual ping is 100 dB re 1 μPa^2-s (red circles). The upper, blue curve shows the running total or cumulative SEL.

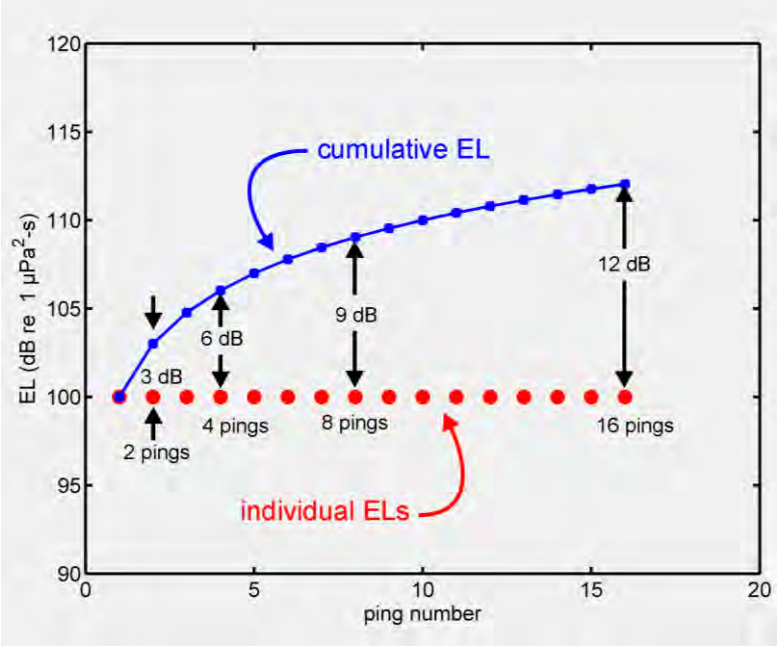


Figure I-6: Summation of Acoustic Energy (Cumulative Exposure Level, or Sound Exposure Level) from a Hypothetical, Intermittently Pinging, Stationary Sound Source (EL = Exposure Level)

After the first ping, the cumulative SEL is 100 dB re 1 μPa^2-s. Since each ping has the same duration and sound pressure level, receiving two pings is the same as receiving a single ping with twice the duration. The cumulative SEL from two pings is therefore 103 dB re 1 μPa^2-s. The cumulative SEL from four pings is 3 dB higher than the cumulative SEL from two pings, or 106 dB re 1 μPa^2-s. Each doubling of the number of pings increases the cumulative SEL by 3 dB.

Figure I-7 shows a more realistic example where the individual pings do not have the same sound pressure level or SEL. These data were recorded from a stationary hydrophone as a sound source approached, passed, and moved away from the hydrophone. As the source approached the hydrophone, the received sound pressure level from each ping increased, causing the SEL of each ping to increase. After the source passed the hydrophone, the received sound pressure level and SEL from each ping decreased as the source moved farther away (downward trend of red line), although the cumulative SEL increased with each additional ping received (slight upward trend of blue line). The main contributions are from those pings with the highest individual SELs. Individual pings with SELs 10 dB or more below the ping with the highest level contribute little (less than 0.5 dB) to the total cumulative SEL. This is shown in Figure I-7 where only a small error is introduced by summing the energy from the eight individual pings with SEL greater than 185 dB re 1 μPa^2-s (black line), as opposed to including all pings (blue line).

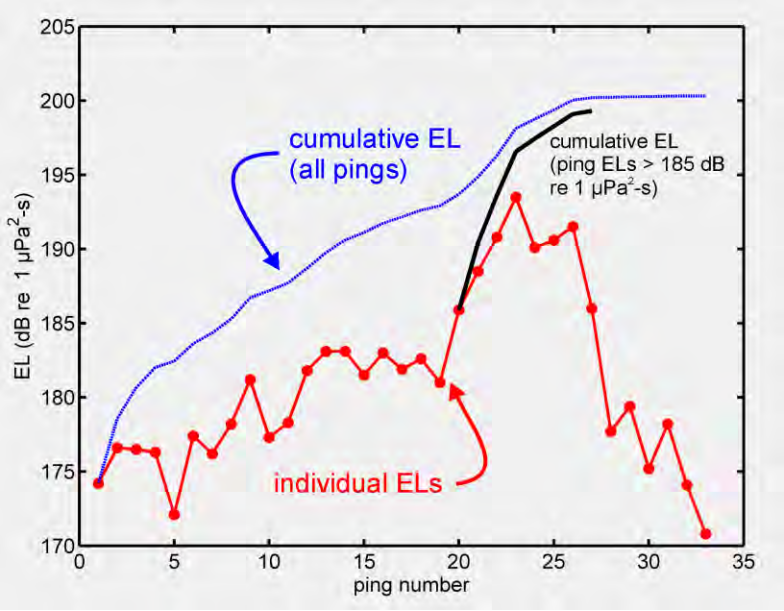


Figure I-7: Cumulative Sound Exposure Level under Realistic Conditions with a Moving, Intermittently Pinging Sound Source (Cumulative Exposure Level = Sound Exposure Level)

Impulse (Pascal-seconds)

Impulse is a metric used to describe the pressure and time component of an intense shock wave from an explosive source. The impulse calculation takes into account the magnitude and duration of the initial peak positive pressure, which is the portion of an impulse sound most likely to be associated with damage. Specifically, impulse is the time integral of the initial peak positive pressure with units Pascal-seconds. The peak positive pressure for an impulse sound is shown in Figure I-5 as the first and largest pressure peak above static pressure. This metric is used to assess potential injurious effects from explosives.

I.4.4 AUDITORY WEIGHTING FUNCTIONS

Animals, including humans, are not equally sensitive to sounds across their entire hearing range. The subjective judgment of a sound level by a receiver such as an animal is known as loudness. Two sounds received at the same sound pressure level (an objective measurement), but at two different frequencies, may be perceived by an animal at two different loudness levels depending on its hearing sensitivity (lowest sound pressure level at which a sound is first audible) at the two different frequencies. Furthermore, two different species may judge the relative loudness of the two sounds differently.

Auditory weighting functions are a method common in human hearing risk analysis to account for differences in hearing sensitivity at various frequencies. This concept can be applied to other species as well. When used in analyzing the impacts of sound on an animal, auditory weighting functions adjust received sound levels to emphasize ranges of best hearing and de-emphasize ranges of less or no sensitivity. A-weighted sound levels, often seen in units of "dBA," (A-weighted decibels) are frequency-weighted to account for the sensitivity of the human ear to a barely audible sound. Many measurements of sound in air appear as A-weighted decibels in the literature because the intent of the authors is often to assess noise impacts on humans.

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