UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

March 26, 2009

Nora Macariola-See
Project Manager, EV21
Naval Facilities Engineering Command, Pacific
258 Makalapa Drive, Suite 100
Pearl Harbor, HI 96860-3134

Subject: EPA comments on the Mariana Islands Range Complex (MIRC) Draft Environmental Impact Statement/Overseas Environmental Impact Statement, Mariana Islands (CEQ# 20090017)

Dear Ms. Macariola-See:

The U.S. Environmental Protection Agency (EPA) has reviewed the above-referenced document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act. Our detailed comments are enclosed.

Based on our review, we have rated the Draft Environmental Impact Statement/Overseas Environmental Impact Statement (DEIS) as Environmental Concerns – Insufficient Information (EC-2) (see enclosed "Summary of Rating Definitions"). The DEIS assesses the impacts from military training; research, development, testing, and evaluation activities; and range upgrades within the MIRC. We have concerns regarding potential impacts to coral reef ecosystems, water quality, and the threatened green sea turtle. We also believe the impact assessment approach does not fully assess all impacts, and that the DEIS frequently concludes that project impacts will not be significant without substantiating these conclusions.

The impact assessment approach focused on identifying impacts from individual training activities that occur at multiple training locations; however, the impact assessment did not fully consider stressors resulting from multiple training activities occurring at the same location. In addition, the DEIS does not sufficiently distinguish among the impacts of the alternatives, nor does it consider the cumulative impacts to resources from the training and other actions that will occur as part of the planned expansion of U.S. military facilities and relocation of U.S. military personnel to Guam and the Commonwealth of the Northern Mariana Islands (Guam military buildup).

We believe that a geography-based or training site-specific approach would improve the impact assessment, and could reveal significant impacts to resources at some potential training locations. Site-specific information regarding direct, indirect, and cumulative impacts is

important for decision-makers and the public, and should be considered in the selection of training sites for exercises. We recommend a geography-based approach be adopted for the Final EIS.

We also recommend an alternative be evaluated with additional mitigation measures. For example, we suggest a mitigated alternative that avoids, to the greatest extent possible, training activities in the Marianas Trench Marine National Monument, an area recognized for its biological and scientific importance.

EPA appreciates the opportunity to review this DEIS. When the Final EIS is released for public review, please send one copy to the address above (mail code: CED-2). If you have any questions, please contact me at (415) 972-3521, or contact Karen Vitulano, the lead reviewer for this project, at 415-947-4178 or vitulano.karen@epa.gov.

Sincerely,

Kathleen M. Goforth, Manager
Environmental Review Office (CED-2)

Enclosure: Summary of EPA Rating Definitions
EPA's Detailed Comments

cc: Frank Rabauliman, Director, CNMI Division of Environmental Quality
Brian Bearden, CNMI Division of Environmental Quality
John Joyner, CNMI Office of Coastal Resources Management
Michael Molina, U.S. Fish and Wildlife Service
George Young, Frank Dayton, U.S. Army Corps of Engineers
Gerry Davis, National Marine Fisheries Service
Lorilee Crisostomo, Administrator, Guam Environmental Protection Agency
Mike Gawel, Guam Environmental Protection Agency

SUMMARY OF EPA RATING DEFINITIONS

This rating system was developed as a means to summarize EPA's 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 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 must 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 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."

EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT, MARIANA ISLANDS RANGE COMPLEX (MIRC), MARIANA ISLANDS, MARCH 26, 2009

Insufficient Disclosure of Impacts

EPA is concerned that the impacts from the proposed action are not properly disclosed in the DEIS; conclusions of insignificance are not substantiated; and the lack of knowledge regarding resource impacts is presented as indicative of no impact. These trends are evident throughout the document, and suggest that impacts may have been underestimated. A possible reason for these deficiencies could be the impact assessment approach, which was not geography-specific. The impact assessment identified possible impacts from each individual training action and then identified the locations where such an activity would occur. This approach failed to consider the multiple stressors occurring from the different activities occurring at the same location, and seems to have resulted in a piecemeal view of impacts. The result of this approach is a largely ineffective assessment of impacts that does not consider the cumulative impacts of the Guam military buildup[1] and associated training on some of the same locations, nor other cumulative impact stressors such as those resulting from climate change. A geography-based approach of assessing impacts to particular training locations would have been much more informative and could have considered cumulative impacts in an effective manner. As a result of the approach taken, the DEIS seems to have averaged the impacts over the very large training area of the MIRC[2] and concluded that impacts would be localized and temporary, and thus insignificant. Except for the open ocean, most training locations are distinct, and each should have received an impact assessment for the resources contained therein.

In addition to the insufficiencies described above, the comparison of alternatives does not meaningfully express the differences in impacts. Tables presented at the end of each impact section simply state that impacts of Alternatives 1 and 2 would be "more", "slightly more", or "similar to" the no action alternative (existing training levels), in some cases indicating that the impacts would be the same as the no action alternative, despite additional stressors acknowledged in the document. This falls short of the Council on Environmental Quality's (CEQ) direction in 40 CFR 1502.14 that the analyses "should 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".

The following are specific examples of the above concerns:

> Soil impacts. The DEIS well documents the substantial erosion that is occurring on Farrallon de Medinilla (FDM) and acknowledges that bombing is contributing to this impact. It states that most of the existing training locations 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).

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[1] Relocation of U.S. Marine Corps Forces to Guam, Enhancement of Infrastructure and Logistic Capabilities, Improvement of Pier/Waterfront Infrastructure for Transient U.S. Navy Nuclear Aircraft Carrier (CVN) at Naval Base Guam, and Placement of a U.S. Army Ballistic Missile Defense (BMD) Task Force in Guam

[2] 501,873 square nautical miles (nm^2) of ocean, 64 nm^2 of land across 5 islands, and 63,000 nm^2 of airspace

The DEIS concludes that surface soil changes would be minimal (p. ES-16) and that impacts to geological resources would not be significant (3.1-23) 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).

Water quality impacts. The DEIS acknowledges unavoidable effects on ocean and surface water quality, including the introduction of hazardous materials from munitions, the contamination of surface drainage areas from runoff, siltation and sediment plumes, and disruption of sediments with above-average loads of organic materials and toxic metals offshore of training locations (p. 3.3-24), yet concludes that *no* short-term impacts or long-term impacts to water resources would occur (p. ES-17).

Sonar impacts on fish. The DEIS acknowledges that data regarding sonar impacts on fish is "exceedingly limited" (p. 3.9-54), documents a study that showed a statistically significant post-exposure mortality of 20 to 30%, notes that the problem with the assessment is that there are so many differences in the studies, including species, precise sound source, and spectrum of the sound, that it *is hard to even speculate* (p. 3.9-45) as to impacts, yet concluded that *no impacts* on fish are anticipated from sonar use (p. ES-23).

Impacts from noise. The DEIS concludes that no sensitive receptors (residential land uses, schools, libraries, hospitals and churches) are likely to be exposed to sound by sound-generating training events (p. 3.5-25) and that the impacts for the preferred Alternative 1 are the same as the no action alternative (p. 3.5-25, ES-17). This conclusion appears unsubstantiated, given that implementation of Alternative 1 would result in ISR/Strike aircraft events out of Andersen Air Force Base increasing by 45% over the current level (p. ES-11). The DEIS identifies an expanded noise contour showing a larger amount of off-base area impacted above 65 DNL[3], and a much larger area greater than 60 DNL. EPA recommends a DNL below 55 for outdoor noise levels.

> *Recommendation:* EPA recommends the impact analysis be training site-specific to facilitate more realistic and defensible impact conclusions. The Final EIS (FEIS) should attempt to discriminate among the impacts of the alternatives to a greater extent. For example, the FEIS could differentiate the degree to which erosion processes would be accelerated by each alternative, or the net deposition rate of training materials, etc, across the alternatives.

Mitigation disclosure and effectiveness

Mitigation measures are not well defined in the DEIS. There are references to protective measures, but specific actions are rarely identified, and when they are, no discussion of the effectiveness of mitigation generally occurs. It is important that mitigation measures be discussed, especially if they are the basis for concluding that impacts will not be significant or

[3] Day-Night Average A-Weighted Sound Level

not occur at all. Results of monitoring of training impacts would also be helpful to include in mitigation discussions.

> *Recommendation:* EPA recommends including in the FEIS a section in each resource chapter that identifies mitigation measures and discusses their effectiveness and likelihood of implementation. Monitoring efforts should be included. Information should also be provided regarding how destruction, loss, or injury from Department of Defense activities will be monitored in the Marianas Trench Marine National Monument per the requirement in the Presidential Proclamation that requires coordination with the Department of Interior or Commence, and mitigation/restoration (p. 3.6-20).

Marine Communities/Corals

Insufficient Impact Assessment

The Draft Environmental Impact Statement (DEIS) evaluates impacts to marine communities, including coral communities and reefs (Section 3.6); however, the evaluation is insufficient for the following reasons:

Coral resources were not fully identified. There are no maps of these resources included; the DEIS includes only vague narrative descriptions of locations which tend to underestimate the value of the resource. Areas with coral coverage, even in low percentages, constitute coral reef ecosystems, and impacts to these ecosystems should be disclosed in the EIS. The DEIS does not mention coral communities in waters surrounding FDM[4] at all.

Impacts to coral reefs from amphibious vehicles, especially Landing Craft Air Cushion (LCAC) vehicles, were not discussed. We are aware from personal communications with EPA staff and the National Marine Fisheries Service that previous exercises on Dadi Beach in Guam have resulted in substantial damage to corals. Impacts from LCAC vehicles to coral communities and reefs should be identified under vessel movements and assessed. Impacts for all alternatives were deemed to be the same (p. 3.6-2) despite the fact that Alternative 1 will include 6 additional amphibious landing activities, as well as over the beach training, at landing locations on Tinian and Guam (3.10-35).

Indirect impacts from sedimentation were not fully assessed. Sedimentation impacts were mentioned for some activities, but not considered in the impact assessment. Sedimentation impacts from: increases in the number and size of underwater detonations at Agate Bay (from 10 net exposive weight (NEW) to 20 NEW); erosion from the "severely degraded" geological resources at Tarague Beach from the live fire range (p. 3.1-22); and the substantial erosion at Farrallon de Medinilla (FDM) (3.1-17, 23), would continue to contribute to ongoing erosion, runoff, and sediment pluming, and would impact offshore coral reefs.

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[4] Spalding et al. 2001. World Atlas of Coral Reefs, 2001, and http://ccmaserver.nos.noaa.gov/products/biogeography/us_pac_terr/htm/maps/33_cover.pdf

Cumulative impacts from the dredging expected for the new CVN berth as part of the Guam military build-up were not considered. The Navy is actively planning for the proposed CVN berth in Apra Harbor, which will involve substantial dredging and coral impacts. These impacts are reasonably foreseeable and should be discussed. No section discussing marine communities exists in the cumulative impacts chapter, and discussion of all cumulative impacts associated with the Guam buildup is deferred to the Joint Guam Program Office EIS; this is not consistent with 40 CFR 1502.16 and 1508.8.

> *Recommendation:* EPA recommends improvements to the impact assessment for marine communities, including coral communities and reefs per the comments above. All indirect and cumulative impacts should be identified and assessed. Mitigation measures to avoid impacts should be discussed, and we recommend their inclusion in the proposed action. For scheduled events, we recommend the Navy avoid training activities that result in sediment disturbance during coral spawning periods.
>
> The DEIS states in the fish impacts chapter that "Navy mitigation measures include avoidance of areas of high productivity, discussed in Section 3.6 (Marine Communities), where some fish species tend to concentrate, further reducing the probability of habitat disturbance and injury or mortality" (p. 3.9-59). There is no mention of this mitigation in Section 3.6 (Marine Communities) or elsewhere in the DEIS; however, we strongly support this mitigation. Please clarify this mitigation measure.

Avoid LCAC and amphibious training on Dankulo Beach

We recommend the Navy amend the proposed action such that Unai Dankulo (Long Beach) is not utilized for amphibious landing activities, especially LCAC landings. The DEIS states that only Unai Chulu has been used for LCAC training (p. 3.11-27), but the preferred Alternative 1 proposes to increase amphibious landing activities and over the beach training by 6 annual training events and repeatedly notes that Unai Dankulo has the capability to support LCAC landings with craft landing zone and beach improvements (p. 2-8).

Amphibious landings are likely to impact coral reefs by physical contact and propeller wash. Such impacts would be minimized by confining amphibious landings to a minimum number of beaches previously used for these landings. The DEIS indicates that Unai Dankulo is the largest beach on Tinian and has a continuous reef crest across the entire run of the beach (3.1-14). An online map also shows coral reef and hardbottom extending the entire beach (http://www.coris.noaa.gov/activities/coral_demographics/05_CNMI.pdf). Avoiding new training-related impacts to this resource would be more protective than utilizing it, even with protective measures, and would be more consistent with Executive Order 13089 – Coral Reef Protection. Additionally, the DEIS does not identify the needed beach improvements that would accompany the use of Unai Dankulo, nor the impacts associated with these improvements.

The DEIS states that Navy mitigation measures include avoidance of areas of high productivity (p. 3.9-59). The DEIS identifies the region surrounding Tinian as showing elevated primary production (p.3.6-10).

Finally, since Unai Dankulo is a known nesting location for the threatened green sea turtle (p. 3.8-25), and is one of the beaches most often utilized by the turtles (p. 3.8-16), avoiding use of this beach will also provide better protection for this species, more so than would the implementation of protective measures. Green sea turtle populations, including those within the MIRC, are in serious decline throughout the Pacific Ocean (p. 3.8-15).

> *Recommendation:* Confine amphibious landings to a minimum number of beaches previously used for these landings, and avoid training and beach improvements on Unai Dankulo (Long Beach).

Water Quality

Impacts from munitions

The DEIS identifies the potential for contamination from munitions components including various heavy metals releases from sonobouys (p. 3.1-21), leaching of hazardous bomb materials (p. 3.2-15), release of cyanide from torpedoes (p. 3.2-17), various explosives compounds such as ammonium perchlorate, picric acid, etc. (p. 3.2-19), and organic chemicals from underwater detonations (p. 3.2-20). The Navy concludes that there would be no long-term degradation of water resources and no short-term impacts (p. ES-17) because contaminants would be diluted in the ocean (p. 3.2-15).

We understand the assumption regarding ocean dilution; however, the assumption should be substantiated with monitoring data. Because of the cumulative impacts to ocean water quality, good stewardship can no longer assume that the size of the ocean will dilute and disperse all pollutants to safe levels, especially considering that metals such as copper and lead bioaccumulate in marine organisms. We recommend monitoring of range areas to validate the Navy's conclusions that impacts would not result in long-term degradation of water resources. A good example is the Air Force assessment of the environmental effects of radio-frequency chaff (p. 3.2-23), which included toxicity tests using marine organisms. Designated activity zones for underwater detonations, which the DEIS states would concentrate contamination (p. 3.1-21), are possible study sites for monitoring, as are sediments offshore of training locations, which the DEIS identifies as having above-average loads of organic materials and certain toxic metals (p. 3.3-24).

The DEIS does not adequately assess the potential water quality impacts from the existing and proposed increases in munitions contaminants on FDM. The Range Condition Assessment (RCA) identifies FDM as a significant source of munitions contaminants from historic bombing. The RCA and DEIS conclude that, while there are no data nor modeling to predict transport or transformation of munitions constituents, no further analysis is required since there are no human receptors on the island. This does not speak to impacts to ecological receptors. We disagree that no further analysis is required to assess the risk of off-range release of munitions constituents (3.2-15), since eco-receptors were not considered.

Finally, the DEIS identifies the Clean Water Act as an applicable law with which the armed services must comply (p. ES-8, 1-16), and part of the impact assessment methodology includes "whether the proposed activities would violate laws or regulations adopted to protect or manage the water resource system" (p. 3.3-1). We agree that training practices should be carried out in compliance with requirements of the Clean Water Act. The EIS should describe this compliance more clearly. The DEIS states that water pollutants associated with Navy training activities are released into the ocean and that their release is regulated in accordance with appropriate regulatory permits (p. 3.3-8), but it is not clear to which permits this statement refers.

> *Recommendation*: The Navy should conduct the necessary monitoring to substantiate the assumptions being made regarding the lack of impacts from munitions releases into the ocean environment and from FDM as a source of munitions contaminants.
>
> In the FEIS, clarify the manner in which the proposed action will comply with the Clean Water Act and other laws or regulations adopted to protect or manage the water resource system. Identify the type(s) of permits that regulate the release of water pollutants associated with Navy training activities into the ocean.

Disclosure of SINKEX contaminants

The DEIS references the General Permit issued by EPA under the Marine Protection, Research, and Sanctuaries Act (MPRSA) for the sinking exercise (SINKEX). It should be noted that the requirements of both the 1999 EPA/Navy agreement and the SINKEX General Permit under 40 CFR 229.2 are to be met in order to comply with the MPRSA SINKEX General Permit. The 1999 agreement letter, which contains specific requirements, is not mentioned.

The DEIS refers to the potential for floating non-hazardous expended material to be lost (to become persistent seabed litter) or washed ashore as flotsam (p. 3.2-22). It should be noted that the SINKEX general permit under the MPRSA states that "Before sinking, appropriate measures shall be taken by qualified personnel at a Navy or other certified facility to remove to the maximum extent practicable all materials which may degrade the marine environment, including without limitation removing from the hulls other pollutants and all readily detachable material capable of creating debris or contributing to chemical pollution." If the sinking exercise could create floating non-hazardous expended material that will create persistent marine debris or has the potential to wash ashore, the Navy should attempt to remove such material from the marine environment.

Additionally, while disposal of materials during SINKEX is a permitted activity, the EIS should disclose the amount of polychlorinated biphenyls (PCBs) that would be disposed into the ocean under each of the project alternatives.

> *Recommendations:* The General Permit and EPA/Navy agreement required initial monitoring data. EPA recommends a summary of these data, as well as an estimate of PCBs that would be left in place under each project alternative, be included in the Final EIS for disclosure.

EPA also recommends that specific text be provided detailing the environmental preparation the Navy undertakes to minimize the impacts that SINKEX may have on the marine environment. More specifically, there should be a discussion pertaining to how the Navy meets the conditions of the MPRSA General Permit (which includes the requirements in the 1999 Navy/EPA agreement).

Finally, we recommend the following changes to the document text:

- On p.3.3-22, under the heading "3.2.2.3.3 Aerial and Surface Targets," there is text that states "The vessels used as targets are selected from a list of CNO approved vessels that have been cleaned in accordance with USEPA guidelines." This sentence should be re-written as follows: "The vessels used as targets are selected from a list of CNO approved vessels that have been cleaned ~~in accordance with USEPA guidelines~~ according to the requirements set forth under Section 102 of the Marine Protection, Research, and Sanctuaries Act (40 CFR § 229.2) and the August 1999 Navy/EPA Agreement that details vessel preparation requirements to address PCBs under the SINKEX permit."
- On p. ES-8, the Marine Protection, Research and Sanctuaries Act (MPRSA) should be added to the list of applicable environmental requirements.

Limited Range of Alternatives

The DEIS evaluates a limited range of alternatives. The alternatives analysis of this DEIS would be much improved by including alternatives that represent a more diverse level and mix of training instead of formulating alternatives that simply build upon one another. The inclusion of an alternative with additional appropriate mitigation (40 CFR 1502.14(f)) would also expand the range of alternatives. The use of geographic and/or temporal exclusions can potentially be effective in reducing impacts to marine resources. EPA recommended, in our scoping comments (letter dated July 16, 2007), that such a mitigated alternative be evaluated. We note that the DEIS did not even consider this suggestion in the section discussing alternatives considered but dismissed (Section 2.2.2).

Recommendation: EPA recommends an alternative with additional mitigation measures be developed in the Final EIS, and that an alternative with geographic and/or temporal exclusions be considered. We recommend the identification of geographic areas where training exclusions would be especially beneficial to environmental resources, such as the Marianas Trench Marine National Monument[5] and discussion of how excluding such an area would affect training goals and the underlying purpose and need.

[5] The Presidential Proclamation did not prohibit Department of Defense activities in the Marianas Trench Marine National Monument, however, the value of its marine resources should prompt the Navy to avoid impacts to the greatest extent practicable.

Impacts to Marine Mammals from Mid-frequency Active (MFA) Sonar
EPA has concerns regarding increased impacts to marine mammals from MFA sonar over historic exposure levels. The DEIS estimates that the preferred Alternative 1 will increase the number of behaviorally harassed animals by 9,543 (from 67,872 to 77,415); increase the number of animals experiencing temporary hearing loss lasting several minutes to several days by 149 (from 1,097 to 1,246); and double the animals experiencing permanent hearing loss (from 1 to 2) (pp. 3.7-181 – 3.7-182). The proposed action will also include low-frequency active sonar (LFA), which unlike MFA sonar, can travel great distances. Impacts from LFA sonar were evaluated in the Surveillance Towed Array Sensor System (SURTASS) Low Frequency Active (LFA) EIS.

We are also concerned that the impact assessment methodology seemed to assume a uniform distribution of animals. The DEIS states that "Uniform animal distribution is overlaid onto the calculated sound fields to assess if animals are physically present at sufficient received sound levels to be considered "exposed" to the sound" (p. 3.7-62). In its descriptions of the distribution of various marine mammals in the MIRC, based on the Mariana Islands Sea Turtle and Cetacean Survey (2007), marine mammals appear to be concentrated in certain areas, mainly associated with the Marianas Trench or other bathymetric relief (Section 3.7.2). Additionally, the assessment methodology does not seem sufficiently conservative since it does not estimate indirect impacts/secondary effects, and counts a maximum of a single take within a 24 hour period regardless of additional harassment (p. 3.2-68).

The DEIS recognizes that there are many unknowns in assessing the effects and significance of marine mammal responses to sound exposures but concludes that no significant impacts to marine mammals will occur for all the project alternatives (p. 3.7-181). Applying the criteria for assessing significance under the Council on Environmental Quality (CEQ) Regulations, especially the degree to which the effects on the quality of the human environment are likely to be highly (scientifically) controversial, the degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks, and the degree to which the action may adversely affect endangered or threatened species (40 CFR 1508.27(4),(5) and (9) respectively), these impacts are potentially significant under NEPA. We understand the Navy is working with the National Marine Fisheries Service to obtain a Letter of Authorization under the Marine Mammal Protection Act.

> *Recommendation:* We recommend the Navy consider the scientific controversy, uncertain/unknown risks, and presence of threatened and endangered species in assessing significance of impacts from MFA sonar on marine resources. EPA recommends the Navy not exceed the historic exposure levels in the MIRC, and operate sonar at the lowest practicable level to achieve mandated training levels. We recommend the approach taken for the Hawaii Range Complex be utilized, where an additional alternative was created for the Final EIS that held sonar use at existing levels while increasing training activity.
>
> The DEIS should recognize the Marianas Trench as an areas of greater biological significance and avoid this area to the greatest extent practicable.

Additional Comments

Biological Resources. EPA has concerns regarding the potential introduction of the invasive brown-tree snake (BTS) to Tinian or other locations in the Northern Mariana Islands. The DEIS states that, for Tinian and Saipan, sightings in shipments and in the wild have increased through the 1990s and early 2000s, and a reliable sighting was reported from Saipan in April 2008 (p. 3.11-55). We encourage the Navy to work closely with the U.S. Fish and Wildlife Service (USFWS) to ensure the BTS Interdiction Plans are adequate to mitigate this potential impact and are sufficiently funded.

Additionally, we have concerns regarding impacts to wildlife and threatened and endangered species in the MIRC training areas. The Navy should work with USFWS and the National Oceanic and Atmospheric Service (NOAA) to address impacts to these resources through the Section 7 consultations and additional interagency coordination as necessary to gain concurrence from these agencies regarding project impact assessment and mitigation.

Paleontological resources. The DEIS states that "Because the location, extent and quality of paleontological resources in the MIRC are unknown and the impacts of training, if any, on these resources can be mitigated, this resource will not be evaluated herein" (p. 3.1-1). It is not clear how impacts to these resources can be mitigated if they are unknown.