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 TO:
(ER 15/0211)

Filed Electronically

August 4, 2015

Ms. Lori Robertson,
Guam Program Management Office
Naval Facilities Engineering Command, Pacific, Attn:
09PA, Public Affairs Office, 258
Makalapa Drive, Suite 100, JBPHH, HI
96860–3134.

Subject: Review of the Draft Environmental Impact Statement (DEIS)/ Overseas Environmental Impact Statement, Department of Defense (DOD), Department of the Navy, Commonwealth of the Northern Mariana Islands (CJMT) Joint Military Training, islands of Tinian and Pagan

Dear Ms. Robertson,

Thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS)/ Overseas Environmental Impact Statement, Department of Defense (DOD), Department of the Navy, Commonwealth of the Northern Mariana Islands (CJMT) Joint Military Training, islands of Tinian and Pagan.

The Department of the Interior has received and reviewed the subject document and our comments have been prepared under the authority of and in accordance with provisions of the National Environmental Policy Act (NEPA) of 1969 [42 U.S.C. 4321 *et seq*.; 83 Stat. 852], as amended, the Fish and Wildlife Coordination Act (FWCA) of 1934 [16 U.S.C. 661 *et seq*.; 48 Stat. 401], as amended, the Endangered Species Act (ESA) of 1973 [16 USC 1531 *et seq*.; 87 Stat. 884], as amended, and other authorities mandating Service review for impacts on trust

resources.

The Department has the following comments for your consideration:

Terrestrial Habitat

General Comments

The National Park Service (NPS) represents the Secretary of the Interior for the National Natural Landmarks program and the National Historic Landmarks program, and is charged by the Secretary with the administration of the Historic Preservation Fund Grants program in Micronesia. The Tinian Landing Beaches, Ushi Point and North Fields National Historic Landmark are located on Tinian Island.

We appreciate the efforts that the Department of Defense (DoD) has made to share information on the proposed actions, in particular the historical and archaeological data. Additionally, DoD's work to document Traditional Cultural Properties is acknowledged as particularly helpful. DoD staff have been willing to listen and compromise as the National Historic Preservation Act (NHPA) Section 106 Consultation has continued for the last several months. Some of the concerns conveyed by consulting parties during the consultation have been addressed to some degree in the current proposed actions.

On the other hand, the U.S. Fish and Wildlife Service has had limited dialogue with DoD about this proposed action and notes that formal consultation under the Endangered Species Act (ESA) has not been officially initiated. In section ES.3.2 Agency Consultation, the statement that various consultations are underway are assumed to represent that early technical assistance has been provided by FWS. To date, FWS records show the DoD has only sent a request for adequacy with a species list for the proposed action. No communication has occurred as it relates to potential effects on migratory bird species.

We believe that the current level of military training on Tinian is sustainable, maintaining the integrity of the National Historic Landmark (NHL). We believe the No Action Alternative is the only proposed action on Tinian that would not significantly impact the cultural and natural resources. In the No Action Alternative, DoD training and activities on Tinian would continue within the current approved plans and actions.

However, all alternatives, excluding the no action alternative, utilize most sea turtle nesting beaches on both Tinian and Pagan. As the project moves forward to the FEIS phase, we recommend DoD evaluate additional alternatives especially those which reduce impacts to sea

turtle nesting beaches.

We recommend that additional clarification of the proposed actions be included in the Final Environmental Impact Statement (FEIS). In general we find that the proposed action is not described in enough detail to provide a sound basis for analyzing the effects of the actions through the full life cycle of the proposed action.

Ammunition

Although specific types of training will vary, we recommend that the estimated annual maximum values for rounds of ammunition fired at each range be provided in the FEIS. Maximum values should also be provided for flights and other sources of noise disturbance.

We suggest that DoD use only "green ammunition" for their small arms training, for any of the actions that may be approved. NPS has over 12 years' experience as do several other federal agencies, with green ammunition that does not include lead and copper that can leach into the environment and be ingested by wildlife. Bird species are particularly susceptible to lead poisoning. Please contact the Federal Law Enforcement Training Center (FLETC) for further information on green ammunition.

Impacts

The DEIS contains limited information both for Tinian and Pagan on how impacts will be mitigated. Specifically the DEIS does not adequately address the loss of acres associated with the 937ac (379 ha) Federal Aviation Administration (FAA) mitigation site. Additionally, potential mitigation proposed via reforestation or enhancement of 6.3 ac (2.5 ha) of limestone forest habitat and possible enhancement of an unspecified amount in other habitats (described throughout the document, but summarized in Table 4.9-11) on Tinian is not sufficient to mitigate impacts from the removal of 1,883 ac (762 ha) of forested and herbaceous scrub habitats proposed for the preferred alternative (Alternative 2).

On both islands, all training alternatives call for extensive leveling of ground and clearing of vegetation. These can only be accomplished by use of tracked, blade vehicles such as dozers. Dozer actions are likely to damage unknown resources including archaeological sites where integrity, resources, and information will be lost forever. We do not believe the DEIS adequately addresses how these resources will be documented or their damage mitigated. Loss of forest habitat on Tinian and Pagan due to construction and vegetation clearing and operational impacts

will cause significant negative impacts to natural resources.

Decreases in populations of native species are unlikely to be mitigated by any action other than the No Action alternative. We recommend the FEIS include a larger area of mitigation with a detailed mitigation plan that describes how enhancement will be implemented and includes monitoring and adaptive management to ensure success.

We recommend reforestation and enhancement of limestone forest habitat and enhancement of an unspecified amount of other habitats on Tinian for potential mitigation as per FWS' earlier comments (letter dated May 10, 2013) for the CJMT Notice of Intent. We recommend significant and practical commitments to mitigation with assurances, in keeping with the 2011 Mitigation Guidance provided by the Council on Environmental Quality (CEQ).

This includes specific plans for how enhancement will be implemented with monitoring and adaptive management to ensure success to mitigate for impacts to these habitats, given the selected alternative.

Please include the benefits of feral goat removal in the FEIS and include more detail on how they will be eradicated, and how these activities will avoid or minimize disturbance to native species (e.g., fruit bats or megapodes). Further, please include a description of how these efforts will be maintained. We suggest DoD provide a commitment to ungulate control, fencing and eradication for forest enhancement areas in the FEIS.

It is not possible to know the actual overall impacts that will occur to natural resources over the years when the training is taking place after the ROD. To account for the impacts of different amounts and kinds and places of training as they change and of unforeseen invasive species' impacts, and for related changes in conditions of living resources, we recommend that the FEIS include the provision for adaptive management. Periodic reviews of conditions of the living resources at the islands containing training areas should be made by qualified scientists with options to change training plans in response to changes documented by these reviews.

Green and hawksbill sea turtles (Chelonia mydas and Eretmochelys imbricata)

Baseline information in the DEIS on green and hawksbill sea turtle (collectively, sea turtles) nesting beaches in the proposed area is lacking, especially for Pagan. Neither DoD, nor CNMI resource agencies have regular monitoring data for sea turtle nesting on Pagan, and recent surveys to support this DEIS did not adequately determine the use of Pagan beaches by nesting sea turtles. Tinian beaches within the Military Lease Area (MLA) have been monitored monthly

by the U.S. Navy, but only data between 1998 and 2007 are examined in Appendix M4, which summarizes sea turtle nesting information from Tinian.

Discussion in Appendix M4 acknowledges a discrepancy between U.S. Navy surveys and CNMI Department of Lands and Natural Resources (DLNR) surveys, with CNMI DLNR surveys estimating more nests. To better understand the effects of the proposed action, please include data from both CNMI and U.S. Navy surveys. We recommend that additional surveys be conducted on Pagan to gather baseline information that will allow for impacts analysis and determination of commensurate mitigation.

Endangered hawksbill sea turtles (Eretmochelys imbricate) and threatened green sea turtles (Chelonia mydas) of the population segment of the Central West Pacific can reasonably be assumed to be present at Tinian and Pagan. All alternatives in the DEIS for both Tinian and Pagan, utilize multiple sea turtle nesting beaches for military training activities which will likely result in significant impacts to nesting sea turtles by altering beach topography and incurring regular human disturbance.

Table 2.4-2 estimates over 2,000 cartridge casing landings will occur on Tinian beaches annually with any alternative, but does not specify how these will be distributed by beach. Please include this information in the FEIS. We recommend the DoD consider an alternative that consolidates their activities to fewer beaches, and implementing monitoring and conservation measures that will benefit sea turtles on unused beaches or on beaches where no vehicle training will occur.

Suggested mitigation of monitoring and protecting turtle nests seem futile when the up to 2,000 proposed landings per year on Tinian beaches and construction of a ramp at Unai Chulu will eliminate turtles from nesting.

On Pagan, the DEIS concludes there are no sea turtle nesting beaches, from only a single set of observations limited to July of 2013. Sea turtles on other Mariana Islands are known to nest in other months. Alternatives to identify which nesting sites are most critical and to exclude these from the proposed activities should be presented in the FEIS. The Green Sea Turtles of the distinct population segment including the Marianas are proposed to be re-listed as “endangered” by USFWS. The FEIS should also consider the cultural importance of turtles to CNMI residents.

There are strong feelings over being restricted by the U.S. Federal Government from all traditional taking of turtles, while the DoD will be allowed new taking by training actions. Consultation with the USFWS on threatened and endangered plants and animals must be

completed before the ROD, and concerns of the CNMI DLNR must be addressed in the FEIS.

The proposed buffers around sea turtle nests are not adequately described in the DEIS and therefore it is unclear how avoidance measures will offset impacts to nesting sea turtles and how much mitigation may be necessary. Please describe the proposed buffers more fully in the FEIS, including how buffers will ensure that nests are avoided by vehicles and personnel on foot. While placing 20-foot buffers around detected nests will reduce disturbance to nests and hatchlings, ongoing training activities on beaches, and in near-shore waters, will likely disturb nesting females and decrease their nesting activities.

We recommend the FEIS provide clarification and a definition of "pre-hatch hole," which is mentioned in one of the proposed mitigation measures for sea turtles. Increasing the frequency of monitoring to at least weekly during nesting season will provide necessary information to infer the age of nests and whether they have hatched instead of trying to discern a "pre-hatch hole" on a nest. If monitoring only occurs prior to training activities in addition to the proposed monthly monitoring, the DoD will not be able to determine when nests are laid or hatched, and therefore will be unable to determine if nests remain in use or are no longer active.

It is unclear from the information provided how the proposed buffers will be maintained while nests are active. We recommend that buffers stay in place until nests are known to have hatched. Monitoring should be conducted weekly, at a minimum, to determine the age of nests so avoidance and minimization measures can be implemented. In the FEIS, please clarify what type of nest avoidance will be needed, and how nests will be monitored.

Green sea turtles (*C. mydas*) in the Mariana Islands are currently proposed to be uplisted from threatened to endangered (NMFS and USFWS 2015). Only about 6,500 nesting females are thought to be present within the distinct population segment (DPS) that includes the Mariana Islands, in addition to Micronesia (referred to as the Central West Pacific DPS) (NMFS and USFWS 2015). The beaches on Tinian and Pagan may be important to the recovery of this DPS, which is already at a relatively low number. We recommend the FEIS evaluate the importance of these beaches to the DPS as a whole, and the impact the proposed action will have on the recovery of the Central West Pacific DPS for green sea turtles.

Mariana common moorhen (Gallinula chloropus guami)

The DEIS states that impacts to Mariana common moorhen are less than significant (LSI). Considering peak noise levels that would reach Lake Hagoi, impacts to the Mahalang complex, and peak noise levels that would reach the Bateha wetlands, we believe significant impacts are

possible. Information in the DEIS is not sufficiently detailed to make a determination on the possible significance of impacts. In the FEIS, please provide a more detailed analysis of noise levels, the latest scientific literature on impacts of noise to this or a similar species, and of the possible habituation of this or a similar species to live-fire training activities.

Noise levels from the proposed action may negatively affect the Mariana common moorhen on Tinian. This species is wary, seldom venture out into open water, and prefer vegetated edges of wetlands (Baker 1951, p. 129). Due to their relatively secretive behavior, moorhen vocalization is a very important factor in the location and identification of other Mariana common moorhens, territory defense, mate attraction, and feeding. Complex and varied calls are common in this species (Taylor 1998, p.492).

If these calls are masked by anthropogenic noises, communication between birds will be hampered and can have serious consequences in direct negative fitness consequences (Slabbekoorn and Ripmeester 2007). For example, masking of communication necessary for territory defense and mate attraction may have a negative impact on reproductive success and exclude birds from otherwise suitable habitat (Halfwerk et al. 2011, p. 210).

Noise generated by large-caliber weapons would expose moorhens at Lake Hagoi, to 77 decibels C-weighted day-night average sound level, and 124 decibels and 135 decibels peak during neutral and unfavorable weather conditions, respectively. These noise levels at Lake Hagoi could limit the use of this wetland by moorhens. Lake Hagoi is considered primary habitat for the Mariana common moorhen, and the use of this wetland by this species is essential to its recovery (USFWS 1994).

For effects to be adequately determined, please include in the FEIS the frequency of weapon discharge over the 20 weeks, and note particularly the frequencies during breeding periods.

Use of the seasonal wetlands by Mariana common moorhen on Tinian also may be negatively affected by training activities, especially within the Mahalang Complex, in the High Hazard Impact Area. Because wetland habitat is limited, ephemeral wetlands provide new food resources and habitat for Mariana common moorhens (Takano and Haig 2004).

Increased noise from aircraft overflights and landing on the runway directly east of Lake Hagoi and training within and adjacent to seasonal wetlands could negatively affect Mariana common moorhens. In the FEIS, please include an analyses of the potential impacts to the Mariana common moorhen population on Tinian, determine whether or not the effects of the proposed action is LSI, and explain how the proposed action does not preclude meeting the recovery

objectives for this species.

We recommend maintaining the DoD "No Training Areas" at Lake Hagoi and at the two Bateha wetlands sites. Maintaining these areas would help avoid further impacts to Mariana common moorhens. In addition, the noise disturbance to Mariana common moorhens may need to be mitigated if the results of the analysis we recommended above indicates that such mitigation is necessary. Mitigation should be commensurate with the loss of habitat at Mahalang Complex and described in the FEIS.

Micronesian megapode (Megapodius laperouse laperouse)

The DEIS states "Megapodes persist on Farallon de Medinilla (FDM) and do not appear to be affected by the noise levels associated with live-fire training and aircraft overflights on that range" (Section 4.9). This may not be accurate as personnel are unable to appropriately survey FDM to accurately determine the status of megapodes due to safety issues on the island. Please include in the FEIS a more thorough analysis of the effect of the proposed training activities on FDM on Megapodes. Also, please include in the FEIS the best management practices that personnel on foot will use to avoid impacts to megapodes and their habitat on the southern portion of Pagan where vehicle use and live-fire training will be prohibited.

Methods of ungulate control are not described in enough detail in the DEIS to evaluate their potential for success. Please provide a more detailed description of the implementation of ungulate control and its outcomes. We recommend DoD work with us to develop a detailed ungulate control plan for inclusion in the FEIS.

Mariana fruit bat (Pteropus mariannus mariannus)

The preferred alternative for Pagan will largely be concentrated on the northern part of the island. While the largest bat colonies were detected in the southern part of the island, bats are known to forage and roost in the northern part of Pagan as well. Because Pagan harbors the highest number of bats in the northern islands of the CNMI, impact to Pagan bats can negatively affect the recovery prospects of all bats in the northern islands of the Mariana archipelago. The closest population of a comparable size in the Marianas is in Rota, which is likely too far to contribute to emigration to islands north of FDM.

Similar to other resources, the magnitude of this proposed action presents significant challenges to mitigate impacts for bats due to the vast amount of roosting and foraging area encompassed by the military training areas. We suggest that the mitigation challenges could potentially be

addressed in the FEIS by consolidating training into smaller spaces, and expanding conservation and mitigation in areas important to this species. Any proposed mitigation that involves forest enhancement should include out-planting of trees that are known to be appropriate foraging and roosting trees for bats in both Tinian and Pagan.

Tinian monarch (Monarcha takatsukae)

The DEIS estimates the number of Tinian monarchs that would be displaced by construction activities (about 6,600 birds, or 7.2 percent of the total estimated population of 91,420), but does not estimate the number of Tinian monarchs that would be displaced by operations. In the FEIS, please estimate number of birds that will likely be displaced by operations and analyze the effects of such displacement on these birds.

The DEIS refers to a limited number of references and studies that support the conclusion that monarchs may not suffer from major noise disturbance. We recommend the FEIS provide a more robust analysis of the effects of noise disturbance and any other type of effects due to both construction and operations.

The DoD proposes to prepare a Tinian Forest Bird Monitoring and Tinian Monarch Management Plan. Please provide a commitment to implementation of these plans in the FEIS. We further recommend that the FEIS include adaptive management plans and a defined commitment by DoD to address and mitigate declines that are above those that were predicted and analyzed in the FEIS.

Other species proposed for listing

Much of the proposed construction and operations will not include areas with proposed listed plants and invertebrates. However, to ensure the detection of proposed listed plant and invertebrate species that may have been missed on previous surveys and determine if the project may be having impacts to these species, the FEIS should include a commitment to surveys for these species. These surveys should occur on a regular basis and within remaining patches of habitat and near the project footprint, as training continues.

The DEIS states that vehicle use and live-fire training will be prohibited in the southern portion of Pagan and lists other activities that are prohibited in southern Pagan, including "…digging or excavation without prior approval." We recommend that the FEIS include best management practices that will minimize or avoid impact to tree snails and native vegetation for personnel on foot. A more clear description of the type of digging or excavation that may be needed and why,

including the types of approval that would be necessary should also be included in the FEIS. We recommend that the FEIS describe measures that will be used to minimize disturbance to listed and proposed listed species and their habitats during digging or excavation activities.

Migratory Birds

The DEIS invokes the "Military Readiness Rule" as justification for take of MBTA-protected species. The Military Readiness Rule at 50 CFR 21.15 does not alleviate DoD of the responsibility to fully analyze impacts of the proposed activity to all MBTA-protected species present. The DEIS states that operation of the LTR is a military readiness activity and will have no significant impacts on any MBTA species present, but does not provide the analyses to support that statement.

The DEIS identifies 38 MBTA-protected species on Tinian and 12 on Pagan, but only analyzes impacts to 3 forest birds, grouped together. Impacts to species likely to be affected by this action, including seabirds and shorebirds, should be fully analyzed to determine whether or not those impacts are significant. In particular, the DEIS acknowledges the presence of numerous seabird and shorebird species, including a colony of white terns. These species have potential to be significantly impacted by both the construction and operation phases of the project. We request that the FEIS include a complete analysis of impacts to these species.

The military readiness rule states that authorization for take may be suspended or withdrawn if "… the Armed Forces have not implemented conservation measures…that would significantly reduce take of the migratory bird species affected by the military readiness activity." (50 CR 21.15(b)(2)(i)(B)). The Resource Management Measures listed in Section 4.9.2 do not reduce take of migratory birds that would occur as a result of the proposed action.

We recommend the FEIS include identification and description of proposed conservation measures to reduce take of birds impacted by the proposed action, describe how enhancement will be implemented, and include monitoring and adaptive management to ensure success.

We do not believe the one study on noise impacts quoted in the DEIS is sufficient evidence to claim that there will be no noise impacts to birds from the proposed action. As previously explained for the Mariana common moorhen, noise pollution affects birds in myriad ways, including impacts that would not be important to humans or laboratory animals. Fireworks can be considered analogous to muzzle blast, and have been shown to adversely impact seabirds (Larkin et al 1996, Stephenson et al 2012, Weigand and McChesney 2008).

Additionally, while there is some evidence that birds can become habituated to certain types of noise, such as pyrotechnics used to haze birds away from crop fields, habituation does not always occur. A comparison of the past and present situation at one shooting range showed that roosting shorebirds still responded to shooting activities, despite the fact that shooting had been going on there for about 40 years (Smit and Visser 1993).

Deleterious effects of chronic noise exposure to birds have been shown to begin at levels as low as 30 decibels, and any noise between 30 and 70 decibels has been shown to elicit avoidance behaviors and to create masking (Bowles 1995, Wright et al 2010). While birds may recover from isolated or infrequent noise occurrences, chronic noise has been shown to be detrimental, and impulsive noise can be more damaging than steady noise.

We recommend that the FEIS contain a more detailed analysis of the noise that will be present at the LTRs, and the associated impacts to MBTA-protected species during the operations phase of the project.

The DEIS acknowledges that "… munitions constituents, in particular heavy metals (i.e., lead, nickel, chromium, cadmium, and copper), do not break down easily and tend to build up in surface soils…", but the potential impacts to birds of lead ingestion are not discussed. Lead poisoning through ingestion of spent ammunition is a known cause of detrimental behavioral effects at subchronic levels, and can cause direct mortality for many bird species.

We request that the FEIS contain an estimate of the amount of lead that will be deposited on the LTRs, analyses of the potential impacts to birds, and avoidance and minimization measures to prevent morbidity or mortality from lead ingestion. Further, we suggest that DoD use only "green ammunition" for their small arms training, for any of the actions that may be approved. Bird species are particularly susceptible to lead poisoning. Please contact the Federal Law Enforcement Training Center (FLETC) for further information on green ammunition.

International Broadcasting Bureau

Two of the DEIS's alternatives in Tinian, including the preferred alternative, involve removing and relocating the International Broadcasting Bureau (IBB) from its current location in Tinian.

The DEIS does not adequately address the impacts of this relocation to other places on Tinian, or to Saipan, Rota, or Guam. Please provide a more thorough analysis of the effect of relocation and propose mitigation for the impacts. We recommend that the final decision on the relocation of the IBB is made before the finalization of the FEIS so that the effects and the mitigation can

be properly considered.

We recommend keeping the IBB relocation within the current proposed action footprint or MLA rather than moving the IBB to other islands. This recommendation avoids and minimizes impacts to listed species to the greatest extent practicable. All other proposed relocation sites outside Tinian, contain ecologically sensitive areas: the Sabana Conservation Area and critical habitat on Rota, habitat for multiple listed species in the Marpi area of Saipan, and recovery habitat for multiple listed species in the Finegayan area of Guam.

Pagan Island Inland Waters

To protect high value resources, we recommend that upland Lake Sanhalom and its source springs be excluded from the impact area by moving the boundary of the impact area eastward. For Alternatives 1 or 2 we recommend that a 100-meter buffer zone is established around lowland Lake Sanhiyon and its adjacent tidally influenced wetlands to avoid disturbance to these fragile and unique ecosystems including the black sand berm between the ocean and Lake Sanhiyon.

Please include an analysis for the potential impacts to both the Lake Sanhiyon and Lake Sanhalom ecosystems from the proposed impact, live-fire, and maneuver activities in the FEIS. We are also requesting avoidance and minimization measures in a mitigation plan for the impacts.

Cumulative impacts

Chapter 5 of the DEIS includes a list of anticipated projects. The proposed action will also likely displace a number of cattle ranchers and occupants currently using the MLA on Tinian. Valuable natural resources such as limestone forests are in southern Tinian, on non-MLA land. If the current activities in the MLA relocate, they are likely to impact resources and habitat in southern Tinian. These actions are directly related to the proposed action.

Please include an impact analysis and appropriate mitigation for this anticipated result in the FEIS.

Invasive Species

Any increases in training supported by shipping vessels and aircraft presents increased risk of introducing invasive species like the Brown Tree Snake, Coconut Rhinoceros Beetle, Little Fire Ant and the Solenopsis invicta Fire Ant from Okinawa. Detection and controls for all such

invasives at origins and at destination sites in CNMI must be required mitigation.

Appendix D (Table D-1, page D-11) Brown Treesnake (BTS) Interdiction

We recommend this section of the FEIS include language covering 100-percent redundant BTS inspections to be conducted at all receiving sites by canine detector teams for any arriving aircraft, vessel and associated cargo from Guam to the CNMI. In addition, this section proposes 100-percent inspection of all outgoing aircraft and cargo via ship and air from Guam to the CNMI with canine detector teams as well as inspections on Guam that are held in snake-free quarantine areas for all cargo transported to Tinian and when feasible to Pagan.

We recommend the phrase, "when feasible to Pagan" be deleted and replaced by: "require inspection of cargo and holding in a snake-free quarantine area on Guam when cargo is destined to both Tinian and Pagan". Both Tinian and Pagan require the same level of screening/BTS quarantine effort. When the Regional Biosecurity Plan is finalized, we also encourage the DoD to work cooperatively with PIFWO to develop and implement interdiction and control protocols applicable to CJMT activities.

Marine Habitat

Alternatives analyzed in the DEIS include amphibious beach landings. However the construction of a landing ramp at Unai Babui was not considered in the alternative analysis. Please incorporate this activity in an evaluation of the various alternatives by using various numbers of beaches, various levels of construction, and analyzing impacts associated with a range of options in the FEIS.

Executive Summary (ES.3.2 Agency Consultation)

We note that this section of the DEIS includes a list of various consultation that are underway, but does not include the Fish and Wildlife Coordination Act (FWCA). We recommend the FEIS include recognition of DoD's responsibilities under FWCA, and initiate those actions in regards to all actions that may control or modify waters of the United States.

Table 4.20-3

The proposed mitigation measures in Table 4.20-3 are incomplete and in some cases are inappropriate types of mitigation to offset losses of marine resources. Marine species awareness

training is not an appropriate measure to mitigate the losses associated with near shore marine impacts. Mooring buoys and fish aggregation devices are generally not considered appropriate as mitigation activities due to the difficulty in measuring benefits from such mitigation measures. The FEIS should include the appropriate types and scale of mitigation requirements.

We note that the scale and complexity of mitigation for some proposed actions may be extraordinarily high as discussed below. Based on the scale of impact, we provide specific concerns and recommendations in the following paragraphs.

Tinian

Conclusions for operational impacts seem to be based on the areal comparison of impact areas to total coral reef area on Tinian. Despite the varying levels of amphibious activities at each beach, a determination of significant impact (SI) for operations would be justifiable at Unai Babui and Unai Masalok with the proper comparisons and evaluation. This is further reinforced by considering that the proposed action involves the use of landing craft air cushion (LCACs), and in light of the coral resources reported in section 4.10 and Appendix M2.

We recommend changing the listed operational impacts for Unai Babui and Unai Masalok to SI.

Unai Chulu

The proposed construction of an in-water landing area at Unai Chulu is estimated to directly impact 10.3 ac (4.2 ha) with another 10.3 ac (4.2 ha) of indirect impact. The construction of such a structure underwater at a remote location with little existing marine habitat degradation poses a significant challenge for offsetting the anticipated marine resource losses. If the proposed action is selected, the direct loss of resources from construction will require compensatory mitigation as per the 2008 Compensatory Mitigation for Losses to Aquatic Resources (33 CFR Parts 325 & 326; 40 CFR Part 230).

Compensatory mitigation for this scale of impact will be difficult, and we are unsure if this scale is practically achievable on Tinian. The suggested mitigation options in Table 4.10-7 are not sufficient and will need to be expanded in order to adequately achieve a scale of mitigation that will meet legal requirements under the 2008 rule.

Appendix D

Best management practices listed in Appendix D only briefly discuss mitigation measures to reduce sedimentation impacts that arise during construction and rubble movement

post-construction and may be inadequate. We recommend that the FEIS include a sedimentation control plan that includes: data on anticipated sedimentation impacts; specific measures to be implemented; a monitoring strategy to measure effectiveness; and post-construction benthic monitoring to document sedimentation impacts.

Appendix D does not include any BMPs for the indirect impacts associated with excess rubble generation due construction activities. Impacts associated with excess rubble generation have been well documented for vessel groundings. This particular issue has been successfully addressed in the past. Please include measures to remove excess rubble generation on coral reefs in the FEIS.

Appendix J

An additional concern associated with a major modification of the reef crest is the increased coastal erosion associated with the higher wave energy reaching the beach. This erosion may have severe impacts on the inner reef flat and beach. Although the conclusion of the analysis in Appendix J was that the breach in the reef crest caused by the proposed construction "should not significantly alter shoreline coastal processes and cause erosion of the beach," the report also states, "The limited spatial extent and volume of sand at Babui and Chulu suggests that the beaches are vulnerable to either natural or man-made perturbations."

The report further states, "the prevailing wave and current dynamics of both sites would act to rebuild the beaches over time, although it is not known how quickly or to what degree," which further adds to the uncertainty. Please provide a more thorough evaluation and discussion on how the DoD will provide required compensatory mitigation for the associated marine resource losses in the FEIS.

Unai Babui and Unai Masalok

Table 2.4-2

Potential impacts associated with LCAC landings at Unai Babui and Unai Masalok are inadequately described in the DEIS. Please provide more technical information on the impact that operation of such vehicles may have on benthic communities. Based on their individual potential impact and the number of the planned landings (Table 2.4-2), the cumulative impacts from LCAC landings will be significant for coral and marine habitats.

The potential landing sites for LCACs are presented at specific locations. However, it is

uncertain how accurately and consistently the vessels can land at these specific sites. We believe clarification is needed on this issue in the FEIS and address whether a potential increase in the proposed landing sites is needed as well.

As the analysis currently stands, the proposed narrow landing sites may represent an underestimation of impacts to marine resources.

Tinian Harbor

The infrastructure at the commercial harbor is not in good condition, and there is currently only a single pier which is capable of supporting the offloading of island supplies. With the level of construction proposed on the island, it is uncertain if the harbor can support this increase in its present state. We are concerned that in-water work at the harbor may need to occur due to its present condition and would be appropriately analyzed as part of this proposed action.

We recommend that DoD evaluate the adequacy of the harbor and its facilities in light of the proposed construction on the island and include any appropriate analysis for additional work needed in the FEIS.

Pagan

Not all beaches have equal vulnerability as the DEIS stated that, "Gold and South Beach are rich and complex reefs and proposed operation activities would impact a larger number of coral colonies and species..." Impacts to South Beach are estimated to be 72 ac (29 ha) of the 121 ac (49 ha) proposed on Pagan. This beach is also one of the most coral-rich beaches (Figure 4.10-16 shows some areas as high as 40-50 percent and 50-60 percent coral cover) affected by the proposed action including LCAC landings.

Given that this single beach comprises 60 percent of the proposed operational impact area, and that the impacts to this beach would be significant, we recommend that the operational impacts for amphibious landings on Pagan be listed as SI. Gold Beach is also referred to a rich and complex reef and for similar reason should be considered as a SI.

Given the varying level of impacts associated with different beaches, we recommend analyzing the impacts to individual beaches.

The DEIS states that there will be "flagging or marking of particular coral heads at Green Beach to avoid during training operations." However, it is not clear how and when this will be done.

Please provide further clarification on this avoidance measure in the FEIS.

Appendix M2

Appendix M2 provides some limited information regarding North Beach, but complete surveys were not conducted. Preliminary data suggests the area has significant resources, but based on this limited information, the DEIS concludes that the impacts will be LSI. We recommend that additional information be collected at this site and the potential impacts be re-evaluated before completion of the FEIS.

Section 4.18.2

The proposed breakwater analyzed in this section would have significant impacts to coral, but there is no discussion of options to constructing the breakwater that might achieve its purposes with fewer impacts. Please include a discussion of alternatives or options to the dock and breakwater on Pagan.

Potential issues not fully addressed in the DEIS

The DEIS does not address potential impacts from terrestrial erosion associated with issues such as live fire (particularly in the High Impact Hazard Area) and potential wildland fires associated with those actions. Field artillery including indirect firing positions are proposed adjacent to Gold and South Beaches. Activities at these sites, particularly regular vehicle traffic in support of the artillery, have the potential to erode the friable volcanic soils characteristic of Pagan, with subsequent translated effects to adjacent reefs as a result of land-based sediment inputs.

We recommend that the risk of such indirect, land-based impacts to coral reefs, and methods by which they might be avoided, minimized, or mitigated, should be analyzed and discussed in the FEIS for Pagan.

Additionally, the potential direct and indirect effects of the proposed actions will have significant adverse effects that could directly impact cultural and natural resources on Tinian and Pagan. There is limited analysis in the DEIS about the effects of the actions on natural, cultural, and historic resources by the proposed actions. There needs to be additional research and recognition of these resources and analysis of impacts on their traditional values and uses by CNMI residents before completing a FEIS and ROD. More alternatives that would be less harming to the resources should be presented.

Access by the public to the lands owned by the people of the CNMI, but leased to DoD for

training would be significantly limited by all training alternatives. This would be significant impacts to both residents and tourists who desire to visit these important sites. As tourism is the primary economic driver of the CNMI economy, this will be a significant financial loss to the economy. Further, the resources accessed by residents and tourists may be altered and damaged resulting in their value being diminished.

This was not adequately addressed in the environmental justice section of the DEIS.

All training alternatives include use of the historic runways of the NHL on Tinian, by aircraft and support vehicles. These historic runways are slowly breaking down through age, weather, and use. We are concerned that increased use will further deteriorate the resource at an increased pace and negatively impact the historic integrity. How will DoD avoid, minimize and/or mitigate this impact?

The proposed action specifies that five beaches on Pagan, (Unai Apan, Unai Shomohon, Unai Palapala, Unai Dikiki, and Unai Regusa) are proposed for amphibious exercises. However, no cultural resource surveys have been done of the five areas offshore of these beaches. Presented photographic evidence from WWII indicates that there are likely submerged cultural resources (sunken ships), adjacent to at least one beach.

Finally, the proposed action does not address how the current residents of Pagan will treated. An NPS staffer met 15 residents of Pagan on a research trip by vessel in June. Some residents live on Pagan year-round.

Summary

This proposal has challenging components both in the terrestrial and aquatic environments. The basis of our comments is to more fully understand the implications of the proposal. In the FEIS please include: more complete information on terrestrial and marine resources; a more thorough potential project impacts analysis that could lead to determination of the least environmentally damaging alternative practicable; and a clearer commitment to avoid unnecessary impacts, minimize unavoidable impacts, and adequately compensate or mitigate the latter.

The island of Pagan contains no NPS designated properties, but does contain many sites that are eligible for inclusion on the National Register of Historic Places and are identified as such in the DEIS. Additionally, we recognize the variety and health of the natural resources on and around Pagan. We believe that proposed actions on Pagan will significantly impact the cultural and natural resources in a very significant way. Many of the resources on Pagan are rare and in

pristine condition and would be damaged or lost by the proposed actions.

Proposed edits

Chapter	Section	Page	Line	Comment
ES		ES-1		Introduction does not state if this DEIS addresses the Unconstrained Training Concept, Appendix C.
ES	General			Document does not address requirements of 16 U.S.C. 470h-2(f) and 36 CFR Part 800.10(f) "to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark…" regarding the impacts on the resources and values of the National Historic Landmarks on Tinian, and on Saipan.
ES	General			The Programmatic Agreement of 2011 commits to maintaining public access to military leased lands in North Tinian along Eighth Avenue as a mitigating measure for Guam and CNMI Military Relocation EIS of 2011. This commitment needs to be addressed in this new DEIS.
ES	ES.3.2	ES-5		Please add NHPA Section 110(f), National Park Service.
ES	5.1	ES-14		Two anticipated projects: Relocation of the International Broadcasting Bureau, Tinian; and a New Dock and

				Breakwater, Pagan are foreseeable actions but are not addressed.
ES	ES.5.2.4	ES-16		There is no designation of where the amphibious attack vehicles and other track and heavy vehicles will drive when going from one area to another. Suggest designating travel routes.
ES	Table ES-1	ES-18		It is not clear when the Categorical Exclusion was completed. Add date for clarity.
ES	Fig ES-3	ES-25		Tinian, All Action Alternatives has areas marked "No Training Area". Three are wetlands, but fourth immediately east of North Field cannot be located in DEIS.
ES	Table ES-4	ES-54		Summary of Impacts for Tinian Alternatives for Recreation, LSI relative construction is incorrect when the areas will be closed during construction.
ES	Table ES-4	ES-51-ES-55		Table does not list cultural resources by a site number or name, but only by development terms such as "Range Complex A". Impacts are summarized by abbreviations such as "SI" for significant impact, and "LSI" for less than significant. An objective evaluation should be accomplished utilizing process and terminology found in 36 CFR Part 800, and completed by site number and/or name.

ES	Table ES-5			Summary of Impacts for Pagan Alternatives for Cultural Impacts only summarizes with “LSI”. An analysis is needed.
ES	ES-6	ES-64-ES-65		Table states no mitigation currently proposed for the Shinto Shrine and Hinode American Memorial. The names for these two historic features should be clarified as NKK Shinto Shrine, and Hinode Shinto Shrine. An avoidance or relocation alternative should be presented.
ES		ES-70-ES-71		Consider including bird, reptile, mollusk, flatworm and amphibian species, or change to “non-native plant and animal”. Snakes should not be exempt.
ES		ES-73-ES-74		Where are Potential Mitigation projects listed? Table ES-6? Or Section 4.20?
ES	ES-6	ES-75 ES-77		Table refers to the consultation process under Section 106 of NHPA, but not by name. Concurrent requirements exist to address impacts under NEPA and NHPA rather than refer to another document.
2	2.2	2-7		Specific information on the types of aircraft and weapons should be included. Specific impacts can be anticipated from various aircraft and weapons.
2	2.2-3	2-15		There is a need to state cumulative

				Unit(s) training.
2	2.2.4.2-2.2.4.4.1	2-16-2-22		Need to specify equipment proposed, ie. M1A1 Abrams battle tanks?
2	2.2.4.3	2-18		Will all maneuver areas be subject to the combined level Range and Training Area scenarios?
2	2.3.3.1	2-28		Alternatives characterized the airfield on Pagan as “inactive”. This is incorrect as occasional small civilian fixed wing and helicopters utilize the field.
2	2.4.1	2-31		Although “Best Management Practices” are in Apendix D, “Standard Operating Procedures” are not listed in DEIS. Only 2 BMPs are listed for cultural resources. The Secretary of the Interior’s Standards for Rehabilitation should be provided. Second item, post-review discoveries, is confusing. Avoidance of cultural resources should be a BMP.
2	2.4.1.2.12.4	2-62		Pages and Figure 2.4-11 describes laydown along Runways B,C, and D which would be an adverse effect to the NHL. How is this consistent with the Secretary of the Interior’s Standards for Rehabilitation?
2	2.4.1.2.12.4	2-62		Describes alteration of Unai Chulu, that would significantly alter the character of the NHL. Landing beach has a seaward component.

2	2.4.1.3.5	2-70		Does not list aviation gunfire and bombing support components of training.
3	3.2.4	3	~17	Earthquake magnitudes are no longer measured "on the Richter Scale". Proper phrasing would be "... 40 earthquakes of magnitude 6.5 to 8.1 have occurred ..."
3	3.2.5.2.2	3-11	~21	Add "volcanic ash fall" to list of possible geologic hazards for Tinian.
3	3.2.5.2.2.x	3-11		Add a section for Tinian under Geologic Hazards "Volcanic Activity" 1. Volcanic ash erupted by the Northern Mariana volcanoes north of Saipan are capable of affecting affecting operations on Tinian. Trace amounts of ash from recent eruptions of Pagan and Anatahan have fallen on Tinian. Ash transported at flight altitudes above Tinian can disrupt air travel to/from the island. Similarly, clouds of SO2 gas erupted by the volcanoes and blown to Tinian can be a health concern for people with respiratory ailments.
3	3.2.6.2.2.1	3-21	line ~13	The volcano monitoring network will also monitor seismic activity including a couple of stations monitoring ground acceleration, critical to do a preliminary damage assessment in the

				event of a large earthquake. Suggest "A volcano monitoring network provides ground acceleration information for preliminary estimates of damage to infrastructure on Pagan resulting from a strong earthquake. The same network would also aid the National Oceanic and Atmospheric Administration in characterizing the tsunami threat when a large regional earthquake occurs."
3	3.11	3-196		Lacking specific information on the cultural resources that potentially will be affected.
3	3.11	3-196		There is a statement that "Currently, Department of Defense actions within this area are covered by two Programmatic Agreements – one for military training activities relating to the Mariana Islands Range Complex EIS/OEIS (DoN 2010a) and one for Guam and CNMI Military Relocation EIS (DoN 2010b) to establish four ranges on Tinian." There is a need to explain exactly what that means relative to the actions under this DEIS.
3	3.17.5.1	3-302	~4	"The active volcano located on Northern Pagan is monitored by the U.S. Geological Survey via satellite" could be misleading as the term "monitoring" can mean different things to different people.. USGS does use satellite data to detect activity, but there is no forecasting capability, and

				lag times between the onset of activity and detection could be hours. Suggest "The U.S. Geological Survey tracks and confirms eruptive activity using satellite data."
4	4.2.3.1.1.1	4-9		Description of construction proposed for Unai Chulu would alter the character of the historic landing beach, an adverse impact. This is not consistent with Table ES-4, page ES-56 finding of LSI (Less than Significant Impact).
4	4.2.3.1.2			Operation Impacts, does not have a discussion on Maneuver Areas. Combined maneuvers can be expected to result in serious disturbance of soils and cultural resources near the surface. We are particularly concerned with tracked vehicles, and any digging such as fox holes or defensive trenches.
4	4.5	3-196		Noise impacts should include the cultural resources located within the NHL on Saipan which can reasonably be anticipated.
4	4.11	4-327		We suggest that impacts to cultural resources should itemize each cultural resource, the source of the impacts, and the expected results of these impacts.
4	4.11.1	4-327		Section discusses “The analysis also considers potential impacts to other kinds of resources that may not be eligible for the National Register of

				Historic Places…" This appears to describe traditional cultural practices and traditional cultural properties and should be described and evaluated here.
4	4.11.1	4-327		Operations should be described more than "range use". Impacts at each Range Complex have been verbally described yet this detail is absent here.
4	4.11.2.1	4-328		Avoidance and Minimization Measures should be detailed for each cultural resource including maps.
4	4.11.2.2			Relying on future determined "Best Management Practices" and "Standard Operating Procedures" may or may not result in adequate mitigation. These practices and procedures should be identified and in place prior to any construction and use under this action.
4	4.11.3			Increased use of North Field NHL runways by aircraft and vehicles will further deteriorate the old pavement and suffer loss of historic fabric and integrity of the Landmark.
4	4.11.3.1.1	4-334		Table 4.11-1 states there are 9 historic properties in Range Complex B and then discussion page 4-331 states "No resources of cultural importance were identified within Range Complex B". Analysis of Range Complex D states "the Landmark would be significantly impacted by ground disturbance…", but it is considered "beneficial". Next

				paragraph states “No resources of cultural importance were identified within Range Complex D.” Range Complex D is on North Field NHL. This section seems inaccurate or inconsistent and should be reevaluated.
4	4.11.3.1.2	4-334-337		Statements “Resources of cultural importance, such as cemeteries, memorials, or potential areas with medicinal plants, would not be directly impacted at these training assets by training operations” and “Therefore, intermittent and temporary loss of public access is not considered a significant indirect impact to cultural resources” are conclusions not supported by any factual analysis. Analysis is needed.
4	4.11-8	4-351		Table 4.11-8 Summary of Potential Mitigation Measures for Tinian Alternatives is vague but could be described with meaningful description.
4	4.11.4.1.1	4-353-4-355		Pagan, Construction Impacts (alternative 1). Clearing of 600 acres in the High Impact Area north and 167 acres in the isthmus is concluded as “minimal”. This is not supported by analysis. Then page 4-354 states no construction will occur in the landing beaches. This is not logical if a dock and breakwater are anticipated. Another statement “Both of these areas have a low potential for

				containing historic properties". The EIS should identify the cultural resources and how they will be impacted.
4	4.11.4.1.2	4-355-4-358		Operation Impacts fails to specifically describe cultural resources, sources of impacts, and expected impacts. "Former residents indicate that there are probably at least eight latte villages located primarily along the coastal areas", yet no survey is cited to document and allow avoidance.
4	4.11- 14	4-363		Summary of Potential Mitigation Measures for Pagan Alternatives provides no specifics on impacts and offers no specific mitigation.
4	Tables			While the document identifies cultural resources within the Area of Potential Effects for the proposed action, there is no document produced to satisfy Section 800.5 of the ACHP Section 106 regulations titled "Assessment of adverse effects". Tables in chapter 4 attempt to categorize the effects with conclusions such as LSI: less than significant impact. The DEIS should identify adverse effects on identified resources and then identify mitigations proposed to those effects.
5	5.3.17.2.1	5-85	~23	"The active volcano located on Northern Pagan is monitored by the U.S. Geological Survey via satellite" could be misleading as the term

				"monitoring" can mean different things to different people.. USGS does use satellite data to detect activity, but there is no forecasting capability, and lag times between the onset of activity and detection could be hours. Suggest "The U.S. Geological Survey tracks and confirms eruptive activity using satellite data."
5	5.3.17.2.2	5-86	1	Suggest "... U.S. Geological Survey volcano monitoring network that was installed in 2013 ..."
5	5.3.17.2.4	5-86	~24	Suggest "The volcanic activity monitoring network could be considered to have a beneficial impact to human health and safety because it provides the infrastructure to collect data that allows advance notice of pending volcanic hazards, not only to Pagan and the need for evacuation there, but to the entire region warning of possible drifting clouds of ash and gas that can affect air transportation and activities on Saipan, Tinian, and Guam. Such a network also aids in characterizing regional earthquakes and the tsunami threat posed by large regional earthquakes "

We would be pleased to discuss these issues further with you in order to thoroughly cover impacts this designation would have.

Thank you for the opportunity to review this project.

Sincerely,

Patricia Sanderson Port
Regional Environmental Officer

cc: OEPC-Staff Contact: Lisa Chetnik Treichel, (202) 208-7116; lisa_treichel@ios.doi.gov
NPS Staff Contact: Jim Richardson, (671) 477-7278, ext 1003 jim_richardson@nps.gov
USGS-Staff Contact: Tom Murray, (907) 786-7443; tlmurray@usgs.gov
FWS-Staff Contact: Kathleen Moynan, (503) 231-2228; kathleen_moynan@fws.gov