



United States Department of the Interior

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In Reply Refer To:
PN-04-246

Colonel Jeffrey C. Smith
U.S. Army, Deputy Chief of Staff, Engineer
U.S. Army Space and Missile Defense Command
P.O. Box 1500
Huntsville, Alabama 35807-3801

Dear Colonel Smith:

Subject: Biological Opinion on the Effects of the Minuteman III Modification on Nesting Habitat for the Green turtle (*Chelonia mydas*).

Dear Colonel Smith:

This responds to your September 15, 2004, request for consultation under section 3-4.5.3 (Procedures for Consultation on Endangered Resources) of the U.S. Army at Kwajalein Atoll (USAKA) Environmental Standards (UES) (8th edition) for the proposed Draft Environmental Assessment (DEA) Minuteman III Modifications (MMII), August 24, 2004. The U.S. Air Force (USAF) is the action agency for this project and is proposing to modify MMIII flight tests in which the re-entry vehicle (RV) portion of the MMIII missile terminates in either the Pacific Ocean (Kwajalein Bight), the shallow marine environment near Illeginni Islet, or on Illeginni Islet, a USAKA-controlled area at Kwajalein Atoll, Republic of the Marshall Islands (RMI). The proposed project is to increase the number of flight tests from 3 or 4 per year by two additional flight tests in fiscal years 2005 and 2006; and beginning in 2006, Mark 12 RVs would be replaced with Mark 21 RVs. This document represents the U.S. Fish and Wildlife Service's (Service) biological opinion (BO) on the effects of the proposed project on the green turtle (*Chelonia mydas*), a federally listed threatened species under the U.S. Endangered Species Act, and USAKA Species of Concern for which consultation is triggered under the UES (section 3-4.5.3).

This BO is based on the following information: 1) the USAF August 24, 2004 DEA; 2) biological literature (see Literature Cited section at the end of the document); and 3) other information sources. Our log number for this consultation is PN-04-246. Copies of pertinent materials and documentation are maintained in an administrative record in our Pacific Islands Fish and Wildlife Office in Honolulu, Hawaii.

Consultation History

- August 24, 2004: The USAF released the DEA to the public on August 24, 2004. The DEA serves as the Notice of Proposed Action (NPA) for a Document of Environmental Protection (DEP) and the Biological Assessment (BA) for species consultation under the UES.
- September 15, 2004: The Space and Missile Defense Command initiates consultation under the UES based on its determination that the proposed MMIII project may adversely affect green turtle (*Chelonia mydas*) nesting habitat at Illeginni Islet, Kwajalein Atoll, Republic of the Marshall Islands.

BIOLOGICAL OPINION

Description of the Proposed Action

This project description summarizes information taken from the August, 2004 DEA. The proposed action is a modification of an existing program in which MMIII missiles launched from Vandenberg Air Force Base, California, cross the central North Pacific, and impact within the Mid-Atoll Corridor Impact Area, USAKA, Republic of the Marshall Islands. This area includes a broad area of the mid-section of Kwajalein Atoll. The intent of the flight test is to target either the vicinity of Illeginni Islet or the deep ocean east reef locations. Most RVs targeted for the vicinity of Illeginni will impact in the deep ocean area south of Illeginni. A small number of RV flights may impact in the vicinity of Illeginni Island or the reef flats over the life of the program. The action proposes to modify the existing MMIII program with: new hardware for the Mark 21 RV; new electronic signal generators; changes to software programs and data collection systems; modifications to system test and evaluation hardware/software; personnel training; and an evaluation of the modified MMIII missile flight test.

Under normal circumstances, approximately three or four MMIII test flights are conducted each year. Four additional flight tests may be conducted in 2005 and 2006, with two tests scheduled between June and August, 2005, and two tests scheduled between February and September, 2006. RVs may contain quantities of hazardous materials that include high explosives, Beryllium (Be), Depleted Uranium (DU), and batteries. Only one RV per year is planned to contain high explosives, and would be targeted for the vicinity of Illeginni Island. A small number of RV flights may impact in the vicinity of Illeginni Island or the reef flats over the life of the program. RVs that impact on Illeginni Islet, or in the shallow nearshore marine environment near Illeginni, will form a crater. Sediments are displaced by the RV and ejected, along with RV debris, up to 100 meters (m) from the crater.

Debris is recovered when RVs impact on Illeginni Islet, or in the shallow marine environment, within approximately 152 to 305 m from the shoreline, or when RVs impact in the ocean at depths less than 30 m. RVs that impact in the ocean at depths greater than 30 m are not recovered.

Debris is excavated from impact sites with the use of a backhoe. Excavated material is screened and RV debris is recovered. RV impact holes are back-filled with displaced coralline algae, mollusc sediments, rubble and rocks. The DEA indicates that some RV debris (small fragments millimeters in size) will never be recovered from the environment.

Conservation Measures

The following list of activities represent actions that USAKA and the USAF will undertake to avoid or minimize impacts to green turtle nesting habitat at Illeginni Islet. The Service believes implementation of these actions will result in significant steps towards offsetting sea turtle nesting habitat losses at Illeginni Islet.

- 1.a. USAKA, in coordination with the USAF, RMI and USFWS, will support establishment of a sea turtle nesting preserve at Eniwetak Islet.
- 1.b. USAKA will initiate consultation with the RMI to establish protocols to ensure that unauthorized personnel will not have access to Eniwetak. The protocols will address such issues as periodic inspections, removal of trespassers, sanctions for violation of access restrictions and public awareness activities. Public awareness activities may include public meetings, advertisements (newspaper and radio), or other media and signage at Eniwetak.
- 1.c. USAKA will monitor beaches at Eniwetak Islet for sea turtle nesting success. Inspections for sea turtle nests, egg incubation and hatchling success will be made on a monthly basis during peak nesting periods (May – November).
- 1.d. USAKA will maintain nesting beaches at Eniwetak Islet by removing marine debris or other hazards that may impede female haul-out, nesting, egg incubation, and hatchling migration to the ocean.
- 1.e. USAKA, USAF and DOE/LLNL will inspect beach areas for active nests at Illeginni prior to each RV impact. If eggs are discovered, they will be moved to Eniwetak Islet, in coordination with the USFWS and USAKA Environmental Office. Protocols for relocating eggs from nests at Illeginni to nests at Eniwetak will be provided by the USFWS to USAKA upon request.

Status of the Species/Critical Habitat

Information in this section is taken from the *Recovery Plan for U.S. Pacific Populations of the Green Turtle* (NMFS and USFWS, 1998), unless otherwise noted.

Species Description

The green turtle (*Chelonia mydas*) is the largest member of the marine turtle family CHELONIIDAE and is found throughout the Pacific, Indian, and Atlantic oceans and the Mediterranean Sea. Green turtles are distinguished from other sea turtles by their smooth carapace with four pairs of lateral scutes, a single pair of prefrontal scutes, and a lower jaw-edge that is coarsely serrated. Adult green turtles may weigh more than 100 kilograms (kg) and exceed one meter in carapace length. The common name of this species refers to the green color of its subdermal fat. The carapace color of adult turtles ranges from light to dark brown, sometimes with an olive cast, radiating or wavy lines, and/or dark blotches. The plastron typically is yellowish to orange, and in the east Pacific often has a grayish cast.

The major taxonomic split within this species is between populations in the Atlantic/Mediterranean and populations in the Pacific/Indian oceans. Although the populations of green turtle in the East Pacific have traditionally been referred to as a distinct subspecies (*C. mydas agassizii*), this distinction as yet has no documented genetic basis. Nevertheless, mitochondrial DNA studies have revealed fixed or near-fixed genotypic differences among nesting populations. This genetic substructure underlies the natal-beach homing behavior of reproductive female turtles. For management and conservation purposes, each nesting population must be treated as an independent demographic unit.

The green turtle was listed in 1978 as threatened under the Endangered Species Act (Act) throughout its Pacific range because of overexploitation, habitat loss, lack of regulation and adequate enforcement, and evidence of declining numbers. Populations nesting in Florida and on the Pacific coast of Mexico are classified as endangered under the Act. The green turtle is also classified as endangered worldwide by the International Union for the Conservation of Nature and Natural Resources, and it is listed in Appendix 1 of the Convention on International Trade in Endangered Species of Wild Fauna and Flora. Because of its status as a federally and internationally protected species, green turtles were included among other sensitive animals afforded special protection at USAKA under the UES in 1995. In 1998, the National Marine Fisheries Service and the U.S. Fish and Wildlife Service completed a recovery plan for the U.S. Pacific populations of the species.

Life history

Throughout their range, adult green turtles typically are resident in foraging areas (*e.g.* seagrass or macro-algae habitats). Periodically, turtles migrate long distances to breeding areas where copulation and nesting take place. Mating usually terminates when nesting has commenced. Based on growth rates observed in wild green turtles, females are thought to reach sexual maturity at 25 years of age or later (Eckert, 1993). Reproductive females generally nest every year, but may skip years. Adult males may migrate and breed every year. Females emerge from the sea to nest 25-35 days after copulation. Green turtles may lay up to six clutches in one season, and each clutch may contain about 100 eggs. After the female has laid the eggs and covered them, the eggs incubate in the soil for up to two months (mean = 64.5 days Balazs

1980). Hatchlings are photopositive and may be disoriented from their search for the sea by artificial light.

Green turtles prefer areas where surface water temperatures are no lower than about 20°C in the coldest month; for example, during warm spells (*e.g.*, El Niño), green turtles may be found considerably north of their normal distribution. Based on the behavior of post-hatchlings and juveniles raised in captivity, it is presumed that those in pelagic habitats live and feed at or near the ocean surface, and that their dives do not normally exceed several meters in depth (NMFS and USFWS, 1998). The maximum recorded dive depth for an adult green turtle was 110 meters (NMFS and USFWS, 1998), while subadults routinely dive 20 meters for 9-23 minutes, with a maximum recorded dive of 66 minutes (NMFS and USFWS, 1998). Additionally, it is presumed that drift lines or surface current convergences are preferential zones due to increased densities of likely food items. In the western Atlantic, drift lines commonly contain floating *Sargassum* capable of providing small turtles with shelter and sufficient buoyancy to raft upon (NMFS and USFWS, 1998).

Sea turtle gender is primarily determined by nest temperature (Mrosovsky and Yntema 1980; Yntema and Mrosovsky 1980; and Morreale et al., 1982). Clutches produced between 27°C and 31°C are usually mixed gender. Eggs incubated when average temperatures fall below 27°C during the middle trimester produce males, while females are usually produced when temperatures exceed 31°C (Alvarado and Figueroa, 1987).

Most green turtles appear to have a nearly exclusive herbivorous diet, consisting primarily of sea grass and algae (Wetherall *et al.*, 1993). In some areas, such as along the eastern Pacific coast, green turtles display carnivory, feeding on molluscs and polychaetes, fish, fish eggs, and jellyfish. In the Hawaiian Islands, green turtles are site specific, feeding consistently in the same areas on preferred substrates, which vary by location and between islands (NMFS and USFWS, 1998).

Population Dynamics

The absolute number of green turtles in any population is difficult to assess. The size of a population typically can only be measured as the relative abundance of nesting females. Because an individual female may only nest once every two or more years, even these measures are very rough estimates.

Historical and recent accelerated rates of exploitation of green turtles have led to significant declines in their distribution and resulted in fewer and smaller remaining breeding sites. In the western Pacific, the only major (greater than 2,000 nesting females) populations of green turtles occur in Australia and Malaysia. Smaller colonies occur in the insular Pacific islands of Polynesia, Micronesia, and Melanesia (Wetherall *et al.*, 1993) and at French Frigate Shoals (FFS) and scattered locations in the Hawaiian Archipelago (Balazs, 1995). In the Marshall Islands, Bikar Atoll may support between 100 and 500 nesting females (Puleloa and Kilma, 1992), and between 25 and 100 nests may occur at Erikub, Jemo and possibly Ailinginae Atolls

(Puleloa and Kilma, 1992). Other atolls may support low level nesting (less than 25 nests) activities, but little information is available concerning current breeding success in these areas.

Although attempts have been made to model the population dynamics of green turtles, few data are available that describe key life history traits, such as growth rates, recruitment, and mortality that influence the population variability and stability of this species (Chaloupka and Musick 1997).

Status and Distribution

Green turtles are declining throughout the Pacific Ocean as a direct consequence of overexploitation and habitat loss (Eckert, 1993). Recovery efforts are hampered by the lack of information about the numbers, distribution, and migration patterns of turtles in most U.S. Pacific populations. Although quantitative assessment of declines also is limited, the continuing decline in this species is the result primarily of harvesting of eggs and adults by humans and nesting habitat due to human development-related activities. Furthermore, nesting sites will not be replenished by the recruitment of turtles from other nesting sites because of the species high fidelity to natal beaches. In the green turtle recovery plan, this directed take is identified as a “major problem” throughout U.S. Pacific territories and the Freely Associated States (FAS: *i.e.*, Republic of the Marshall Islands, Federated States of Micronesia and the Republic of Palau). Severe exploitation of turtles and their eggs in recent decades throughout their range reflects important socio-cultural and economic changes in the Pacific (and throughout the green turtle’s range). Specifically, these changes include: 1) erosion of traditional restrictions limiting the number of turtles taken by increased use of island residents; 2) modernized hunting gear; 3) easier boat access to remote islands; 4) extensive commercial exploitation for turtle products in both domestic markets and international trade; and 5) loss of the spiritual/cultural significance of turtles.

Continued poaching, incidental take by sport and commercial fishing gear, and the incidence and severity of tumors caused by a fibropapilloma disease in Hawaii, all act to compromise the green turtle’s recovery. Fibropapilloma is often fatal and its etiology is unknown.

Environmental Baseline

The environmental baseline describes the status of the species and factors affecting the environment of the species or critical habitat in the proposed action area contemporaneous with the consultation in process. In this case, the baseline includes RMI, local, and private actions that affect the species at the time the consultation begins. Unrelated Federal actions that have already undergone consultation are also a part of the environmental baseline. Federal actions within the action area that may benefit listed species or critical habitat are also included in the environmental baseline.

Status of species within the action area

In the Marshall Islands, sea turtle nesting generally occurs between May and November, with some exceptions of nesting observed in December. At Illeginni Islet, the western shoreline (inter-islet reef flat) and northwestern shoreline (lagoon facing) are suitable nesting locations for green turtles (USFWS and NMFS, 2000). Three nest pits were observed at the western shoreline by Service and NMFS biologists in 1996 (USFWS and NMFS, 1996).

Factors affecting species environment within the action area

Few data are available with which to assess population dynamics for this or any sea turtle species. The Marshall Islands population of green turtles is at risk from human harvest of adults, juveniles and eggs; incidental take by fishing gear; marine debris; egg and hatchling predation by rats; and loss of nesting habitat due to human encroachment and construction in areas previously used by sea turtles (McCoy, 2004). The vast majority of green turtles nesting in the Marshall Islands may be highly sensitive to any perturbations that take place at existing nesting sites.

Existing activities that affect green turtles at Illeginni Islet include: 1) RV's have been documented to impact and contaminate sea turtle nesting habitat at Illeginni Islet; 2) general USAKA operations (*e.g.*, maintenance of existing infrastructure, refurbishment activities and heli-pad) which may interrupt attempts by female green turtles to haul-out and nest on the islet; 3) release of hazardous materials during the detonation of unexploded ordnance at the designated ordnance burn site (western end of islet) which may disturb egg incubation, sea turtle haul-out, or hatchling migration to the ocean; 4) the harvest of green turtle eggs, juveniles and adults by humans for subsistence purposes; and 5) egg and hatchling predation by rats (*Rattus* sp).

Effects of the Action

Turtle nesting habitat may be destroyed if an RV impacts at Illeginni or during post-impact cleanup-related activities (USAF, 2004). In the event an RV impacts on or heavy equipment traverses across turtle nesting habitat, it is possible that turtle eggs may be severely damaged or destroyed, and that the suitability of the habitat for future successful nesting may be eliminated by associated physical changes to that habitat.

The overall effect of the action would not benefit green turtles and other wildlife on Illeginni Islet. RV impacts and recovery activities are expected to result in degradation to shoreline areas that support such habitat, affecting the ability of sea turtle nesting activities to stabilize. Without the action, it is feasible that sea turtle nesting may stabilize, particularly if other negative influences could be eliminated or controlled in concert. These activities may result in take in the form of harm or harassment of green turtles by precluding females from haul-out and nesting, preventing normal embryonic development, disturbing or destroying turtle nests, and compromising hatchling growth and success.

Certain components of the RV are comprised of Depleted Uranium (DU), a heavy metal, and Beryllium (Be). When an RV impacts on Illeginni Islet or the shallow nearshore marine environment, it breaks up. As heavy metals mix into the Illeginni environment, they may present an exposure risk, primarily to animals. Exposure to toxic levels of heavy metals has been documented in test animals to result in growth anomalies, tumors, pneumonitis, hypersensitivity, cancer and death (T.C. Pellmar *et.al.*, 1999; Hoffman *et al.*, 2003; Klaassen *et al.*, 1986; and Lewis 1998).

Soil sampling for Be was conducted at an RV impact site in 1992 that resulted in the identification of Be concentrations of about 5 parts per million, very near background levels. Though Be and DU are known to be highly insoluble (USAF, 2004), sea turtles have not been evaluated for toxic exposure to DU or BE, and it is feasible that the health of nesting females, embryos, and hatchlings at Illeginni may be degraded, resulting in reduced ability of the animal to resist diseases, successfully evade predators, forage or reproduce.

The USFWS and NMFS have recently collected tissue samples of organisms in the vicinity of Illeginni Islet. The samples are being currently analyzed at the Lawrence Livermore National Laboratories (LLNL). Evaluation of these samples is the beginning of a process to determine the potential for toxic exposure of DU and BE to sea turtles.

Finally, a single RV landing on Illeginni can produce a crater approximately 15 feet deep and 25 feet across and eject sediments (*e.g.*, primarily coral rubble) up to 100 m from the crater across the islet. Just one such event has the potential to essentially render viable sea turtle nesting habitat permanently unsuitable for successful nesting, and injure or kill hatchlings at Illeginni Islet.

Cumulative Effects of Non-Federal Activities

Cumulative effects include the effects of future RMI, local, or private actions that are reasonably certain to occur in the action area considered in this BO. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 3-4.5.3 of the UES.

Though Illeginni Islet is a USAKA-leased islet and closed to public access, it is possible that humans may gain access to the islet and harvest eggs or adult green sea turtles.

Conclusion

After reviewing the current status of the green turtle, the environmental baseline for the action area, the effects of the proposed shoreline stabilization, and the cumulative effects, it is the Service's biological opinion that the proposed action (along with the reasonable and prudent measures/and conservation measures) is not likely to jeopardize the continued existence of this species. No critical habitat has been designated for this species; therefore, none will be affected.

INCIDENTAL TAKE STATEMENT

Section 3-4.8.1 of the UES prohibits the take of endangered and threatened species, respectively. Incidental take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. Harass is defined as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

The measures described below are non-discretionary, and must be undertaken so that they become binding conditions. Because USAKA has command over all United States Government activities at USAKA-controlled islands, the Mid-Atoll Corridor, and USAKA-controlled activities within the RMI, these measures will be implemented by USAKA. However, the USAF must support implementation of these measures in coordination with USAKA. Furthermore, the USAF has a continuing duty to regulate the activity, in coordination with USAKA, covered by this incidental take statement. If the USAF (1) fails to support implementation of the terms and conditions or (2) fails to adhere to the terms and conditions of the incidental take statement, USAKA and the RMI may seek to enforce the terms. In order to monitor the impact of incidental take, the USAF must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement.

Amount or Extent of Incidental Take

The Service anticipates incidental take to occur in the form of harm or harassment to the breeding success or loss of up to three green turtle nests or injury or loss of up to 300 hatchlings per year as a result of project-related RV impacts at Illeginni Islet.

Effect of the Take

The Service does not believe that this level of incidental take is likely to result in jeopardy to the species or destruction or adverse modification of critical habitat, as critical habitat is not designated in the project area. The level of take is not likely to result in jeopardy because the overall effect of the action will likely affect no more than three green turtle nests or 300 hatchlings per year at Illeginni Islet. Furthermore, these losses are expected to be offset by the implementation of conservation measures to protect green sea turtle nesting habitat at Eniwetak Islet. It is expected that about three sea turtle nests with an anticipated production of up to 300 green sea turtle hatchlings per year will be protected in perpetuity at Eniwetak Islet.

Reasonable and Prudent Measures

The reasonable and prudent measures given below, with their implementing terms and conditions, are designed to minimize the impacts of incidental take that might otherwise result from the proposed actions. If, during the course of the actions, the level of incidental take is exceeded, the action agency is required to reinitiate consultation and review the reasonable and prudent measures provided in this biological opinion. In addition, the Army must cease the activities that caused the taking; must immediately provide an explanation of the causes of the taking; and must review with the Service the need for possible modification of the reasonable and prudent measures. The Army will offset unavoidable impacts through the implementation of the conservation measures as described in the Project Description.

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the impacts on green turtles.

- (1) Minimize the number of nests destroyed.
- (2) Monitor and report any incidental take that occurs.

Terms and Conditions

In order to be exempt from the prohibitions of section 3-4.8.1 of the UES, the USAF must comply with the following terms and conditions, which implement reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

In order to implement reasonable and prudent measure 1 above, the following term and condition applies:

1. The USAF will target the RVs away from the known sea turtle nesting areas within the Mid-Atoll Corridor Impact Area.

In order to implement reasonable and prudent measure 2 above, the following terms and conditions apply:

- 2.a. The USAF will submit an annual report by December 31 of each year to USAKA for the MMHIRV test flights, if any, that would have impacted in the vicinity of Illeginni Island. The USAKA Environmental Management Office will forward the report to the PIFWO Field Supervisor at the above address documenting take of green turtle and suggesting ways to further minimize incidental take at Illeginni Islet.
- 2.b. The USAF will work with the USAKA Environmental Management Office to inspect the RV impact zones to assess sea turtle mortality after each mission.

The PIFWO believes no more than 3 nests per year will be precluded from reaching complete incubation (*i.e.*, hatching). The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of this BO and review of the reasonable and prudent measures provided. The USAF must immediately provide an explanation of the causes of the taking and review with the USFWS the need for possible modification of the reasonable and prudent measures.

Conservation Recommendations

Federal agencies may carry out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or develop information. When recommendations are provided, they relate only to the proposed action and do not necessarily represent complete fulfillment of an agency's responsibilities for the species.

- 1.a. The USAF may support eradication of all species of rats from Eniwetak and maintain this islet as a rodent free environment to encourage incubation and hatchling success.
- 1.b. The USAF may conduct a risk analysis of sea turtle exposure to DU and Beat Illeginni. Rats (*Rattus* sp) that occur within the vicinity of sea turtle nesting sites may be used as surrogates to supplement this analysis. The analysis should evaluate concentrations of DU or Be in the kidney, liver, bone and lung tissue.

This concludes consultation on the action described in the August 24, 2004 Draft EA for the Minuteman III Modification. Reinitiation of consultation is required where discretionary Federal agency involvement or control over the action has been retained and if: 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; 3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or 4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount of extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Colonel Smith

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If you have any questions concerning this BO, please contact Marine Ecologist Kevin Foster (phone: 808/792-9420; fax: 808/792-9581).

Sincerely,

Gina Shultz
Acting Field Supervisor

cc: NMFS- PIRO
EPA-San Francisco
USAF
USAKA
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