

Appendix H ESA Section 7 Consultations

DRAFT INTERAGENCY SECTION 7 BIOLOGICAL EVALUATION FORM for the Interim Visitor Services Plan for Midway Atoll National Wildlife Refuge, Battle of Midway National Memorial, and Midway Atoll Special Management Area

Originating Persons: Barry Stieglitz, Barry Christenson, John Klavitter, Barbara Maxfield
Telephone Number: 808.792.9540
Date: September 26, 2006

I. Region: 1 - Hawaiian and Pacific Islands National Wildlife Refuge Complex, Honolulu, Hawaii

II. U.S. Fish and Wildlife Service (Service) Activity:

The Service is proposing to implement an interim visitor services plan at Midway Atoll National Wildlife Refuge, Battle of Midway National Memorial, and Midway Atoll Special Management Area (Midway Atoll) to satisfy requirements of the National Wildlife Refuge System Improvement Act of 1997 and to allow the public the opportunity for education and interpretation of wildlife and historic resources and compatible wildlife-dependent recreation.

III. Species and Habitat:

A. Listed species and/or their critical habitat within the action area:

1. Green sea turtle (*Chelonia mydas*), threatened

Green sea turtles occur at Midway Atoll. They are seen in the waters of the lagoon, along certain shorelines, in and around surrounding coral reefs, and in deeper pelagic waters. No turtle nesting had been documented until successfully hatched eggs were discovered on Spit Islet in July 2006 (Service unpub. data). High surf uncovered the eggs which probably hatched the previous year.

2. Hawksbill sea turtle (*Eretmochelys imbricata*), endangered

Hawksbill sea turtles are infrequently seen in the lagoon.

3. Leatherback sea turtle (*Dermochelys coriacea*), endangered

One leatherback sea turtle washed up dead at Midway Atoll in the early 1990s (D. Williams, Service, pers. comm.).

4. Loggerhead sea turtle (*Caretta caretta*), threatened

At least one loggerhead sea turtle with a satellite tag spent time in refuge waters in 2003 (G. Balazs, National Marine Fisheries Service (NMFS), pers. comm.).

5. Hawaiian monk seals (*Monachus schauinslandi*), endangered

About 65 endangered Hawaiian monk seals are usually present at Midway Atoll at any one time, and pupping levels have increased significantly since 1996, with a record number of 17 in 2004 (L. Laniawe, NMFS, pers. comm.). However, survivorship of juveniles is low and the species is highly endangered.

Portions of Midway Atoll have been designated as critical habitat for the Hawaiian monk seal, including all beach areas, sand spits and islets, including all beach crest vegetation to its deepest extent inland, lagoon waters, inner reef waters, and ocean waters out to a depth of 20 fathoms (except for Sand Island and its harbor) (50 CFR, Part 226, Vol. 53, No. 102, May 28, 1988).

6. Humpback whale (*Megaptera novaeangliae*), endangered

Humpback whales are infrequently seen in deeper pelagic waters.

7. Sperm whale (*Physeter macrocephalus*), endangered

Only one sighting has been recorded at Midway Atoll. A sperm whale washed up dead on the surrounding coral reef in the late 1990s (N. Hoffman, Service, pers. comm.). The skeleton is currently on display outside the Service visitor center at Midway Atoll.

B. Proposed species and/or proposed critical habitat within the action area:

No proposed listed species or critical habitat occurs at Midway Atoll.

C. Candidate species within the action area:

No marine candidate species have been observed at Midway Atoll.

D. Species/habitat occurrence

1. Green sea turtle

Green sea turtles have been observed in nearshore and offshore waters of Midway Atoll, so all marine waters are potential habitat. The first and only documented nest was found on the southeastern shores of Spit Island (Fig. 1). The highest concentration of basking green sea turtles occurs on 200-m section of beach on Sand Island called "Turtle Beach." The maximum number of turtles observed at one time was 28 (J. Klavitter, Service, pers. obs.).

The following is derived from Balazs et al. (2001). Juvenile turtles regularly feed on algae such as *Spyridia filamentosa* and *Centoceras clavulatum* growing on the iron seawalls and on wind-driven pelagic invertebrates that accumulated along the seawalls. Foraging on *Codium cuneatum* by subadults and adults takes place outside the atoll along the southern side. A small seagrass foraging pasture of *Halophila hawaiiiana* occurs inside the atoll adjacent to the Cargo Pier. Turtles are routinely sighted between the Inner Harbor and the Cargo Pier. A sonic tag placed on an adult male revealed long periods of resting at 6-8 m, probably under the Fuel and Cargo Piers.

2. Hawksbill sea turtle

Hawksbill sea turtles are infrequently seen in the lagoon.

3. Leatherback sea turtle

Since only one leatherback has ever been observed at Midway Atoll, the species is most likely very uncommon within the refuge, probably only occasionally migrating through deep, pelagic waters. Recent satellite tagging studies show that leatherback turtles tagged on coast of California coast migrated through the Hawaiian archipelago on their way to an area just north of Australasia (TOPP 2006).

4. Loggerhead sea turtle

Very little information is known about loggerhead sea turtles within Midway Atoll refuge waters. Since only one loggerhead has been recorded in the vicinity of Midway Atoll through satellite tagging studies, the species is most likely very uncommon within the refuge, probably only occasionally found in deep pelagic waters.

5. Hawaiian monk seal

Hawaiian monk seals are found resting on the beaches of Sand, Eastern, and Spit Islands as well as portions of the emergent coral reef (Fig. 1). The seals forage within the atoll, near the fringing reef, and outside the reef (Stewart 2004). The majority of the pups are born on Eastern and Spit Islands, but 3 pups were born on Sand Island in 2006 (NMFS unpub. data). The births on Sand Island occurred at Frigate Point, the middle of West Beach, and at Rusty Bucket. Pups have also been born at Turtle Beach and one was born on the boat ramp in the Inner Harbor in 2002. This female had been recently attacked by a large shark and had severe gaping wounds throughout her mid section. She gave birth to a still-born pup on the boat ramp. She remained on or near the boat ramp for several weeks while she healed. Pupping on Sand Island has been rare, especially prior to 2002, and may be related to the fact that humans live on Sand Island and are not allowed access to Spit or Eastern except for scientific research. Since 2002 there have been 12 to 65 people stationed at Midway Atoll, down from approximately 150 people between 1996 and 2002.

6. Humpback whale

Very little information is known about humpback whale within Midway Atoll refuge waters. All of the infrequent sightings have been in deep pelagic waters of the refuge.

7. Sperm whale

Since only one Sperm whale has ever been recorded at Midway Atoll, they are most likely only occasional visitors as they pass through refuge waters during migration. They most likely occur in deep pelagic waters.

IV. Geographic area and location:

Midway Atoll is an insular territory of the United States administered by the Service as a National Wildlife Refuge, and is part of the Hawaiian Islands archipelago that lies to the northwest of the seven main Hawaiian Islands. The refuge encompasses a total of 235,473 ha

(581,864 acres, Fig. 3) and consists of three islands: Sand 452 ha (1,117 acres), Eastern 136 ha (336 acres), and Spit Island 6 ha (15 acres, Klavitter 2004). The total submerged area (everything underwater, including areas inside the atoll) is 234,877 ha (580,394 acres). Of this amount, approximately 245 ha (605 acres) are emergent reef. Total upland area (all the dry land inside the atoll) is 594 ha (1,468 acres). The Refuge boundaries are circular in nature and extend 22.2 km (12 nautical miles) out from the fringing coral reef. The airfield (58 ha, 143 acres) is located on Sand Island. For purposes of this assessment, the proposed action area is the entire area of Midway Atoll National Wildlife Refuge and Special Management Area, 581,864 acres, which is roughly a 12-nautical mile circle surrounding the atoll.

A. Ecoregion Number and Name:

Region 1, Pacific Islands Ecoregion.

B. County and State:

Midway Atoll is not part of any State.

C. Section, township, and range (or latitude and longitude):

Midway Atoll is at latitude 28.2° N, longitude 177.3° W.

D. Distance and direction to nearest town:

Midway Atoll is located approximately 2,012 km (1,250 miles) northwest of Honolulu, Hawaii.

V. Description of proposed action:

The Service is proposing to implement an interim visitor services plan at Midway Atoll to allow the public the opportunity for education and interpretation of wildlife and historic resources and compatible wildlife-dependent recreation.

The interim visitor services plan would be overseen by the Service. It was developed by visitor services specialists in close coordination with Refuge managers and biologists. The objective of the visitor services plan at Midway Atoll is to provide high quality, compatible wildlife or historic related education and recreational experiences. The visitor services plan would include the following activities:

- (1) Wildlife observation and photography
- (2) Participatory management/research program
- (3) Environmental education and interpretation
- (4) Airport operation (for non-administrative purposes)
- (5) Nonwildlife-dependent beach use
- (6) Nonwildlife-related sports
- (7) Amateur radio operation

In order to ensure protection of wildlife and a safe and enjoyable visitor experience, the total number of overnight visitors allowed on the refuge at any one time will be limited to 30 people in 2007 and 50 people in 2008 and beyond. This number may be exceeded for short duration (less than a day) prearranged visits by ocean vessels or aircraft. In these cases, visitor activities are closely supervised and primarily consist of guided tours or participation in commemorative events. No public use activities will extend from Midway Atoll to other nearby parts of the Monument, such as Kure or Pearl and Hermes Reef.

For the next 5 years (2007-2011), visitor programs will operate from November through July, which coincides with the albatross season on Midway Atoll. The months of August through October are reserved for planned construction activities. Very few rooms will be available during these months due to the number of contractors on island, and aircraft capacity will be needed both for contractors and supplies. To ensure the safety of visitors and enhance their experience on Midway Atoll, visitor programs will be concentrated in this 9-month time frame.

The goals and objectives for the visitor services program at Midway Atoll National Wildlife Refuge/Battle of Midway National Memorial are summarized in the table below. More detailed information, including strategies, is discussed in the visitor services plan (Service 2006a). Unless otherwise stated, the objectives and strategies will be completed by Service staff and begin upon plan approval.

Management Goals	Objectives
<i>Goal 1.</i> Conserve and restore the natural diversity and abundance of native plants and animals, both terrestrial and marine, at Midway Atoll, emphasizing seabirds and shorebirds, threatened and endangered species, and coastal and marine communities within the Northwestern Hawaiian Islands ecosystem.	<i>Objective 1.1</i> Incorporate at least 75 percent of visitors staying 3 days or longer into the refuge volunteer program for habitat restoration.
	<i>Objective 1.2</i> Provide 30 percent of visitors staying 3 days or longer opportunities to observe wildlife population monitoring
	<i>Objective 1.3</i> Continue efforts to support the habitat restoration program sponsored by the Friends of Midway Atoll National Wildlife Refuge.
<i>Goal 2.</i> Offer visitors, residents, and people afar opportunities to discover, enjoy, and appreciate the Northwestern Hawaiian Islands ecosystem through wildlife-dependent activities.	<i>Objective 2.1</i> During 2007, provide visitor opportunities for at least 100 overnight visitors.
	<i>Objective 2.2</i> During 2008, reestablish a regularly scheduled visitor services program for at least 500 overnight visitors.
	<i>Objective 2.3</i> Provide visitor opportunities for private sailboats and up to three cruise ships per year.
	<i>Objective 2.4</i> Ensure all visitors feel welcome, enjoy a safe experience, and understand refuge rules and regulations during their stay on Midway Atoll.

	<i>Objective 2.5</i> Within 3 years, improve wildlife viewing and photography opportunities for all visitors to Midway Atoll.
	<i>Objective 2.6</i> Work with and encourage qualified groups or individuals to develop specialized programs at Midway Atoll in wildlife monitoring, photography, and art in 2008 and beyond.
	<i>Objective 2.7</i> Develop and provide biennial wildlife-dependent teacher workshops targeting a mix of science teachers and teachers who do not have a strong science background or interest.
	<i>Objective 2.8:</i> Beginning in 2008, facilitate at least two opportunities per year for accredited colleges, universities, or private/nonprofit environmental or historical organizations to conduct wildlife-dependent college level courses or administer informal educational camps.
	<i>Objective 2.9:</i> In 2008, initiate a distance learning program from Midway Atoll to bring the Northwestern Hawaiian Islands Marine National Monument to classrooms across the Nation.
	<i>Objective 2.10</i> By 2008, improve onsite interpretation and interpretive facilities to better educate visitors about Midway Atoll and the Northwestern Hawaiian Islands.
	<i>Objective 2.11</i> By 2008, develop at least two offsite exhibits and programs to educate the general public about the Northwestern Hawaiian Islands and Midway Atoll National Wildlife Refuge in particular.
	<i>Objective 2.12</i> Allow residents and visitors to engage in other recreational uses on Midway Atoll that have been determined to be compatible with the mission of the National Wildlife Refuge System and the purposes of the refuge.
	<i>Objective 2.13</i> On a continuing basis, maintain outreach efforts to Midway Atoll's diverse key publics to update them on the visitor program and wildlife-oriented news stories.
	<i>Objective 2.14</i> By November 2007, evaluate the effectiveness of the visitor program marketing effort.
<i>Goal 3.</i> Honor, maintain, and interpret the unique historical resources of Midway Atoll, with emphasis on its status as the Battle of Midway National Memorial.	<i>Objective 3.1</i> By 2008, improve onsite interpretation and interpretive facilities to better educate visitors about the Battle of Midway National Memorial and Midway Atoll's early history.
	<i>Objective 3.2</i> By 2008, develop at least two offsite exhibits to educate the general public about the Battle of Midway National Memorial.

	<i>Objective 3.3</i> Working with partners, offer special events on Midway Atoll and at other offsite locations that honor its history.
	<i>Objective 3.4</i> Seek grant funds to bring at least two groups of volunteers to Midway Atoll each year to work on historic restoration projects under the guidance of the Service's cultural resources staff and/or historic preservation specialists.
	<i>Objective 3.5</i> Provide at least 15 percent of visitors staying 3 days or longer opportunities to assist with historic preservation tasks and activities.

VI. Explanations of impacts of Action and methods to reduce adverse effects:

A number of means to avoid adverse effects to refuge natural resources were designed into the visitor services plan. Many of these are described in the Environmental Assessment and refuge compatibility determinations (Service 2006a,b). The Service would provide the necessary resources to implement the visitor services plan and ensure that the program is environmentally sensitive and minimizes human disturbances to wildlife. This would be done by: (1) providing sufficient staffing; (2) defining permitted activities; (3) providing guidelines for uses; (4) designating open and closed areas; (5) providing a high level of public information (previsit packets, staff and visitor orientations, lectures, brochures, guided tours and static displays); (6) restricting access to and within sensitive wildlife areas; (7) systematically monitoring visitor impacts on wildlife and implementing visitor program changes as determined necessary by the refuge manager; and (8) coordinating with other natural resource agencies in the development and implementation of the visitor program.

1) Wildlife observation and photography

Hawaiian monk seals and/or green sea turtles swimming or resting on beaches may be disturbed. Visitor programs will be designed and managed to minimize or eliminate these impacts. However, even with proper management and execution of a well run program, certain behavioral responses may occur that are not easily observable.

Increased use of refuge waters also increases the potential for interaction/disturbance by boats, kayaks, or snorkelers/divers with monk seals and sea turtles. Any action of pursuit or annoyance from boats potentially disturbs marine mammals in the wild by causing disruption of their behavioral patterns or displacement from essential habitat areas, especially if the animals are resting. Boats could run over turtles especially between Inner Harbor and the Fuel Pier.

Methods to reduce adverse effects

- The beaches on Spit and Eastern Island will be closed to visitors as well as the southern and western beaches on Sand Island. Boats will not be allowed to travel closer than

500 feet from these closed beaches, except for guided tours to tie up to the pier on Eastern Island.

- Visitors and residents are provided orientation materials and related information to minimize disturbance to wildlife. All visitors and new residents are required to go through orientation immediately upon arrival or immediately the next day in the case of an unusually late arrival.
- Professional photographers who desire access to areas not generally accessible to the public will be put under Special Use Permits that stipulate more detailed access restrictions and regulations to protect wildlife. At the discretion of the Refuge Manager, Service staff may be assigned to accompany professional photographers into particularly sensitive areas.
- All trips to Eastern Island for wildlife observation and/or photography will be closely supervised by Service staff or Service-approved guides. The number of visitor tours of Eastern Island will be controlled by the refuge manager (typically only one or two per week), and generally will be completed within a 2-hour period. Spit Island will be off limits for wildlife observers and photographers unless they accompany Service staff or permitted researchers during authorized project visits.
- Guided kayaking tours will be closely supervised by Service staff or Service-approved guides. Buffer zones using the NOAA Watchable Wildlife suggested distance of 50 meters will be enforced as well as closures of selected lagoon areas to minimize disturbance of marine life, for example, a monk seal with pup. Visitors will be advised of proper actions to avoid disturbance and all tours will follow planned routes designed to minimize disturbance and avoid sensitive areas. Kayak guides will be trained at estimating the 50-meter distance and will be responsible for keeping the entire group together. Since West Beach is a known pupping area, the buffer zone around known mom/pup pairs will be increased to 150 meters during the entire time the pair is on the beach. The NMFS seal biologist on Midway will keep refuge staff informed of new mom/pup pairs and their known locations. No kayaking will be allowed near Eastern or Spit Islands.
- Power boat operators will slow to allow visitor observation of monk seals and turtles, but will neither pursue nor specifically seek them out. Power boats will travel at less than 5 mph in the Inner Harbor and from the Inner Harbor to the Cargo Pier so turtles are not accidentally run over.
- Snorkel trips will be limited to 8 persons per guide and SCUBA trips to 6 persons per guide. This will help ensure that the group stays together for safety reasons and to prevent visitors from straying into sensitive areas or approaching swimming monk seals or turtles. Selected snorkel locations will be chosen to offer good wildlife viewing and a safe anchor point for the visitor boat. These sites will be marked with a buoy to ensure that boats do not stray into sensitive areas.
- Visitors and their luggage will go through an inspection for insects and plants prior to departing Honolulu, and again when leaving Midway Atoll to reduce the possibility of alien species introductions. Visitors will be asked to clean their shoes and other clothing

before coming to Midway Atoll through advance introductory materials. Anyone bringing snorkel or dive gear to Midway will be required to treat it to prevent the inadvertent introduction or transmission of alien species.

- Only four stroke outboard motors will be used for visitor program boats. These motors are quieter than two stroke motors and will not exceed the Level A or Level B acoustic threshold for disturbance to marine mammals. No other loud sounds will be associated with this program. To further minimize possible acoustic impacts, boat operators will be advised to slow when approached by dolphins and proceed without stopping via the most direct route around the main body to their destination.
- Boats taking visitors to Eastern Island or snorkeling may encounter spinner dolphins or, less frequently, green sea turtles while traversing the lagoon. Hawaiian monk seals are only rarely observed swimming in the lagoon. Boat operators will be fully briefed on known resting areas of spinner dolphins in the lagoon (figure 1) and routes to and from snorkel sites will be plotted to avoid these areas.

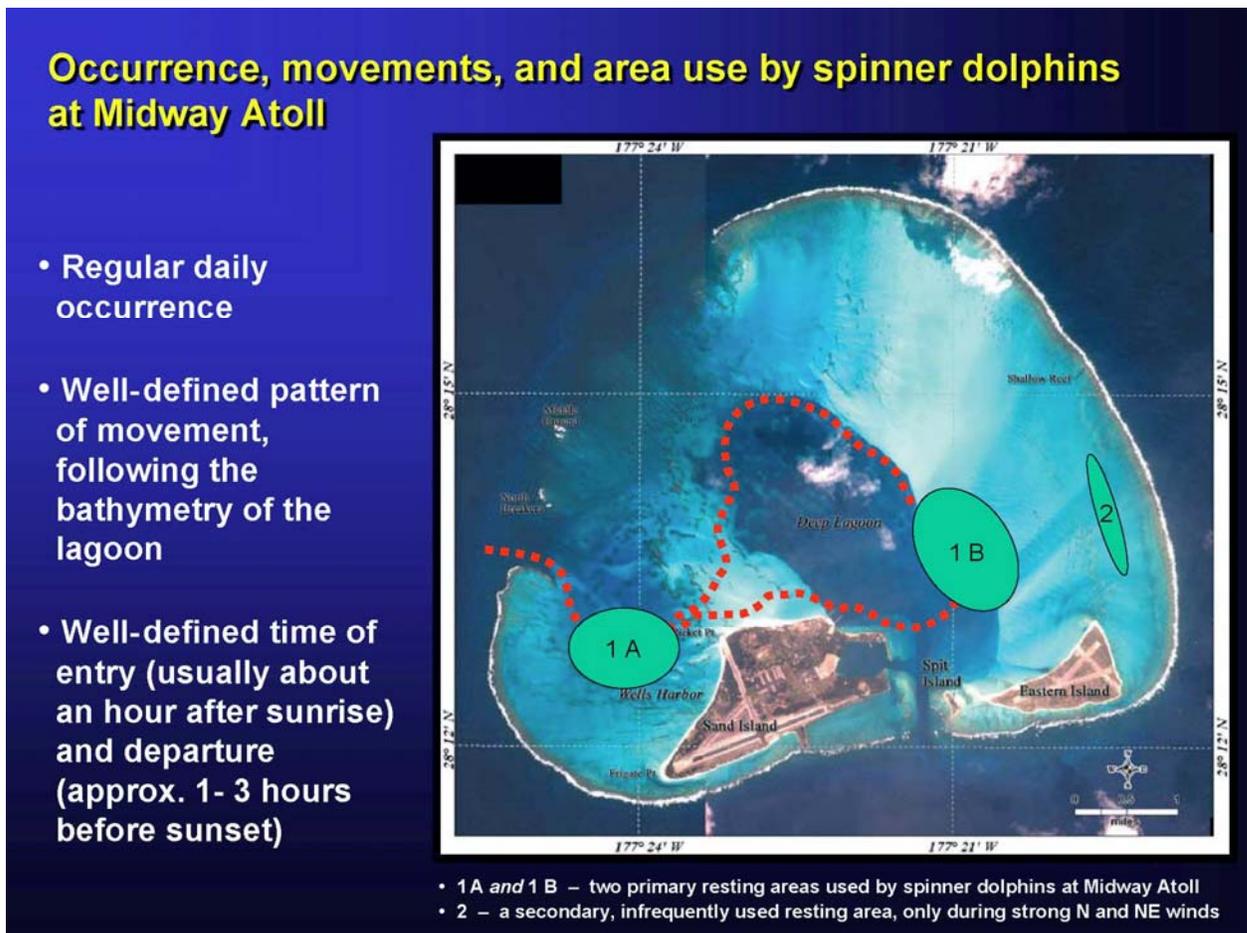


Figure 1. Occurrence, movements, and area use by Hawaiian spinner dolphins at Midway Atoll. (courtesy of Dr. Leszek Karczmarkski)

- Refuge biological staff will work with the NMFS seal biologist stationed on Midway to develop a monitoring plan to assess impacts to Hawaiian monk seals from the visitor program. This plan will be based on the existing data set of seal sightings on Sand Island over the past 10 years. Long term trend analysis of use of the Sand Island beaches by monk seals should allow the biologists to determine if there is a noticeable change in seal beach use over time.
- A review of files documenting past visitor violations of closed beaches and/or monk seal disturbance shows that many of the people had not received orientation to the refuge and closed areas. Strict compliance with the orientation policy will address many of those types of violations in the planned visitor program. Some of the documented violations were clearly due to poor or nonexistent signing. A new sign plan will be developed by refuge staff and all signs put in place prior to 2008. Temporary signs may be used during the trial period in 2007. However, records also clearly show the need for a Law Enforcement Officer who works in the field full time ensuring that refuge regulations are enforced. A full time officer will be stationed at Midway prior to implementation of the full scale visitor program. Prior to that time, law enforcement needs will be met through periodic use of officers on short-term details. Documented violations that occur during periods without an officer in place will be handled through an affidavit process by which the officer is provided specific details of the incident that are legally adequate for issuance of a Notice of Violation.

2) Participatory management/research program

This activity is planned mostly for the terrestrial environment, but some beach cleanups are planned. Seals or turtles, especially those resting in the thick vegetation, could be disturbed.

Methods to reduce adverse effects

- All participating visitors will attend the initial orientation and will be thoroughly briefed by the Service or Service-trained personnel on the approved and prohibited activities.
- Participants involved in beach cleanup will be supervised by Service personnel or Service-approved cooperators and focus on the “open” beaches. “Closed” beaches will be cleaned only when monk seals are not present and on a quarterly basis. No tow board cleanups of reefs will be done by visitor/participants.

3) Environmental education and interpretation

Environmental Education

Impacts from visitors attending scheduled workshops, participating in walking or biking interpretive tours, or self-guided tours on Sand Island will be minimal. All of these activities will occur on hard surfaced roads with very limited wildlife disturbance.

Minimal to no impact on refuge purposes is anticipated from off-site programs, since educational demonstrations will be conducted or supervised by trained Service staff or Service-approved guides.

Interpretation

Minimal impact to refuge purposes is anticipated as described in the above “guided walks and bicycle tours” section. Additional potential impact to monk seals and green sea turtles may occur if visitors and residents wander off self-guided interpretive walks.

Cruise ships that visit Midway Atoll are required to anchor outside the harbor entrance channel and to ferry their passengers to shore via ship’s tenders. Tenders could run over turtles in the Inner Harbor. Gray or blackwater discharge from cruise ships could adversely affect coral or possibly monk seals or green sea turtles.

Evening programs at various indoor locations.

No anticipated impacts are anticipated due to indoor locations.

Eastern Island tours.

Tours will be restricted to the historical runways, limiting the disturbance to seals and turtles. Impacts will also be associated with the increased number of boat landings at the Eastern Pier. Launching boats down the Sand Island boat ramp could disturb seals that often haul out and rest there.

Methods to reduce adverse effects

- All onsite environmental education will be closely supervised by Service staff and Service-approved guides, as well as by accompanying teachers.
- All students will be subject to the same restrictions (e.g., beach closures, distances from monk seals, etc.) as other visitors.
- All guided Sand Island tours will be led by Service or Service-approved interpreters and will be adjusted on the spot to avoid disturbance of seals and turtles.
- No more than 25 people will be led at one time on guided walks and bicycle tours, except during cruise ship visits. Cruise ship visitors are accompanied by chaperones and guided along well-marked paved roads, primarily in the historic part of town.
- All visitors will attend an orientation upon (or before) arrival and be given appropriate narrative and graphic material to clearly indicate which areas are open for visitor use and to clarify regulations in force to protect wildlife and habitat. Cruise ship visitors receive an orientation from a Service representative onboard ship or by handouts specific to their visit to Midway Atoll.

- Signing along self-guided trails will identify approved areas for beach access, wildlife observation, etc. Service and cooperators staff will monitor visitor use to assess and respond to incidents of noncompliance with refuge regulations. Vegetative screening will be used to ensure that visitors do not walk off trails.
- Interpreters will clearly explain the rationale for access restrictions and the actions that will be taken to enforce regulations.
- The frequency, duration, and route of guided Eastern Island tours will be modified, as needed, to avoid disturbance to seals and turtles.
- Boats will not be launched on the Sand Island ramp if an injured seal or pup is present or if a seal is in the middle of the ramp.
- Cruise ships will be given a specific location for safe anchorage outside the channel entrance. Service personnel will work with NOAA to identify the best location for this anchorage prior to the first cruise ship arrival under the new monument regulations. Shuttle boats will be instructed to drive 15 mph or less in the Inner Harbor and watch for turtles and seals.
- Cruise ships will be prohibited from discharging of any gray or black water during their anchorage period and for the entire period they are within monument waters. They will be advised of this requirement during event planning and reminded again just prior to arrival. Any detected violation of this requirement will be cause for barring of this cruise line from any future stops at Midway Atoll NWR and will be pursued as a violation of refuge regulations. Refuge staff will seek assistance from NOAA to use currently available sonar or other technology to assess the suitability for anchoring cruise ships just out from the harbor channel entrance. Sites determined to be suitable will be marked by GPS and that site transmitted to visiting ships. Cruise ships will also be advised that due to possible impacts to whales, the speed limit within the monument as they approach Midway is 10 knots.
- Due to concern over the introduction of invasive marine species into Midway Atoll and the monument, refuge staff will work with NOAA Oceans Service to develop a protocol for hull cleanliness requirements for cruise ships and sailboats.

4) Airport operation (for non-administrative purposes)

Seals located at Frigate Point have been observed to lift their heads and look up when airplanes fly over just before landing or take off. The seals return to their previous behavior (mostly resting) within minutes. This effect seems minimal and would be difficult to totally reduce. No other species listed above are affected.

5) Nonwildlife-dependent beach use

Minimal to no negative impacts to refuge resources are expected from this activity. Visitors could displace resting monk seals from preferred beach areas if refuge visitor guidelines regarding beach use are not followed.

Methods to reduce adverse effects

- Beach areas occupied by resting monk seals will be signed with small portable seal shaped placards placed 50 m from the seals to advise visitors of the seals presence so they do not inadvertently cause disturbance.
- Swimmers will be advised to leave the water if a monk seal approaches them in the water.

6) Nonwildlife-related sports

These activities include swimming, biking, jogging, volleyball, tennis, and other sports inside of the gym. These activities will present little or no impact to listed species. Swimmers could accidentally swim close to monk seals and turtles.

Methods to reduce adverse effects

- Closed areas will be posted and regulations strictly enforced. Residents and visitors will be informed about closed area restrictions through orientation sessions and posted notices.
- Bicycling and jogging will be limited to paved and gravel roads and trails during daylight hours only (sunrise to sunset).
- A 50 m approach restriction for seals and turtles will be strictly enforced. If a seal moved to within this distance of the volleyball court, the area would not be used (or the game stopped) until the seal voluntarily left the area.

7) Ham radio operation

Ham radio operation will not occur on the beaches or in the marine environment, so need species listed in this document should be affected.

VII.Literature Cited

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Stewart, B. 2004. Geographic patterns of foraging dispersion of the Hawaiian monk seals (*Monachus schauinslandi*) in the Northwestern Hawaiian Islands. Administrative report. Hubbs-SeaWorld Research Institute. San Diego, CA.

VIII. Effect determination and response requested: [* = optional]

A. Listed species/designated critical habitat:

<u>Determination</u>	<u>Response requested</u>
no effect/no adverse modification (species: _____)	____ *Concurrence
may affect, but is not likely to adversely affect species/adversely modify critical habitat (species: threatened green sea turtle; endangered hawksbill sea turtle, endangered leatherback sea turtle, threatened loggerhead sea turtle, endangered Hawaiian monk seal, endangered humpback whale, endangered sperm whale)	<u>_X_</u> Concurrence
may affect, and is likely to adversely affect species/adversely modify critical habitat (species: _____)	____ Formal Consultation

B. Proposed species/proposed critical habitat:

<u>Determination</u>	<u>Response requested</u>
Not applicable	
no effect on proposed species/no adverse modification of proposed critical habitat (species: _____)	____ *Concurrence
is likely to jeopardize proposed species/adversely modify proposed critical habitat (species: _____)	____ Conference

C. Candidate species:

Determination

Response requested

Not applicable

no effect

(species: _____)

____ *Concurrence

is likely to jeopardize candidate species

(species: _____)

____ Conference

Initiating Office:

Project Leader, Hawaiian and Pacific Islands
National Wildlife Refuge Complex

Date

Deputy Project Leader, Hawaiian and Pacific Islands
National Wildlife Refuge Complex

Date

Attachments

Reviewing ESO Evaluation:

A. Concurrence _____ Nonconcurrency _____

B. Formal consultation required _____

C. Conference required _____

D. Informal conference required _____

E. Remarks (attach additional pages as needed):

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U.S. DEPARTMENT OF COMMERCE
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NOV 13 2007

Mr. Barry Stieglitz
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Re: Endangered Species Act Informal Consultation: Interim Visitor Services Plan for Midway Atoll National Wildlife Refuge (U.S. Fish & Wildlife Service)

Dear Mr. Stieglitz:

This correspondence is in response to your request for consultation under the Endangered Species Act (ESA) of 1973, 16 U.S.C. §1536. On August 24, 2006, the U.S. Fish and Wildlife Service (USFWS) requested that the National Marine Fisheries Service (NMFS) review a draft Biological Evaluation (BE) describing effects of implementation of USFWS's Interim Visitor Services Plan (VSP) at Midway Atoll on species listed as threatened or endangered under the Endangered Species Act. NMFS provided comments to USFWS on iterations of the BE and VSP several times between September 2006 and May 2007. USFWS finalized the BE on May 21, 2007, and requested concurrence under Section 7 of the ESA that implementation of the VSP may affect, but is not likely to adversely affect, species under NMFS jurisdiction. In June and July 2007, NMFS requested that USFWS more fully develop its monitoring plan for implementation of the VSP. On October 18, 2007, USFWS amended the VSP with a draft Monitoring Plan, and submitted it to NMFS as the final component of the proposed action.

Proposed Action and Action Area

The proposed action and action area, as described in the BE (USFWS 2007), are hereby incorporated by reference and summarized below. USFWS proposes to carry out an interim VSP at Midway Atoll in 2007 – 2011. The objective of the VSP is to provide high quality, compatible wildlife or historic related education and recreational experiences to the public over five years. The VSP includes visitor activities during the months of November through July, and construction activities on land during the months of August through October. Visitor activities will include wildlife observation, a participatory management/research program, environmental education, and other activities. The total number of overnight visitors allowed on the refuge at any one time will be limited to 30 people in 2007 and 40 people in 2008 and beyond. Construction activities will be limited to Sand Island and only occur on land.



The proposed action includes measures to reduce effects on ESA-listed species under NMFS jurisdiction, and are hereby incorporated by reference and summarized below. USFWS will:

1. Conduct orientation programs for all visitors with regard to maintaining a 150 feet (50 m) approach distance for seals and turtles, and access restrictions for sensitive areas;
2. Enforce distance approach limits for monk seals and turtles and access restrictions;
3. Maintain and enforce power boat and kayak approach limits around sensitive areas;
4. Accompany photographers into particularly sensitive areas;
5. Supervise all trips to Eastern Island for wildlife observation and/or photography;
6. Limit visitor tours of Eastern Island to once a week for no longer than a 3-hour period;
7. Prevent access to Spit Island unless accompanied by USFWS-approved staff and/or guides or permitted researchers during authorized project visits;
8. Closely supervise kayaking tours;
9. Require vessels involved in visitor activities to return to dock at least one hour before sunset;
10. Brief boat operators on preferred monk seal haul out, swimming/foraging, and pupping sites, so they can be avoided when boats are traveling to and from Eastern Island;
11. Guide all snorkel and diving observational tours in a manner that minimizes disturbance of ESA-listed species;
12. Implement a monitoring plan to determine if the proposed action results in an increase in monk seal disturbance;
13. Ensure law enforcement capability for enforcement of refuge regulations;
14. Limit guided walks and bicycle tours to 25 people or less;
15. Post signs along self-guided trails to identify approved areas for beach access, wildlife observation, etc.;
16. Plan the frequency, duration, and route of guided Eastern Island tours to avoid disturbance to seals and turtles;
17. Avoid launching boats from the Sand Island ramp if an injured seal or pup is present or if a seal is in the middle of the ramp;
18. Require cruise ships to anchor at a specific location outside the channel ships outside Hawaiian monk seal critical habitat, and away from foraging areas for seals and turtles;
19. Limit shuttle boat vessel speeds to 10 km per hr (kph) or less in the Inner Harbor;
20. Prohibit cruise ships from discharging any gray or black water during their anchorage period and while in monument waters;
21. Limit cruise ship tenders speeds to 18.5 kph or less;
22. Require visitor program boats to use four-stroke engines in order to minimize noise;
23. Train visitors on how to avoid disturbance to wildlife, especially Hawaiian monk seals and sea turtles, and how to recognize behavioral indicators of disturbance;
24. Sign beach areas occupied by resting monk seals with small portable seal-shaped placards placed 150 ft from the seals to advise visitors of the seal's presence;
25. Advise swimmers to leave the water if a monk seal or sea turtle approaches them;
26. Train beach users on how to respond if approached on the beach by a monk seal or sea turtle;
27. Turn off lights at the volleyball courts if disturbance is documented for sea turtles (and their nestlings) and/or monk seals; and
28. Implement adaptive management triggers and responses as a means of addressing negative impacts to protected marine species.

The action area is the entire Midway Atoll National Wildlife Refuge and Special Management Area, roughly a 12-nautical mile circle surrounding the atoll. Midway Atoll is an insular territory of the U.S. administered by the USFWS as a National Wildlife Refuge. The Refuge encompasses a total of 235,473 hectares (ha) [581,864 acres (ac)] and includes: Sand (452 ha; 1,117 ac), Eastern (136 ha; 336 ac), and Spit Island 6 ha (15 ac). Eastern and Spit Islands are uninhabited. Sand Island is 1.8 miles long by 1.2 miles wide. Sand Island was the site of a U.S. Naval Base from about 1939 until 1993. The USFWS maintained an overlay refuge at the site from 1988, until full authority was transferred to the USFWS in October 1996.

Listed Species and Critical Habitat That May Be Affected

USFWS determined in the BE that the following seven ESA-listed species under NMFS's jurisdiction may be affected by the proposed action: The green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricata*), leatherback sea turtle (*Dermochelys coriacea*), loggerhead sea turtle (*Caretta caretta*), humpback whale (*Megaptera novaeangliae*), sperm whale (*Physeter macrocephalus*), and Hawaiian monk seal (*Monachus schauinslandi*). The only designated critical habitat for these species occurring within the action area is for the Hawaiian monk seal; NMFS designated critical habitat for this species on May 26, 1988, from shore to a depth of 20 fathoms in ten areas of the Northwestern Hawaiian Islands (NWHI), including Midway Atoll (except Sand Island and its harbor; 53 CFR 18988). Species information is summarized below for these seven listed species, including occurrence within the action area.

The green sea turtle was listed as threatened on July 28, 1978 (43 CFR 32800), except for breeding populations found in Florida and the Pacific coast of Mexico, which were listed as endangered. The biology, habitat, and conservation status of this species is described in a recent status review (NMFS & USFWS 2007a). Green sea turtles occur in waters around the NWHI and all Main Hawaiian Islands (MHI). Green sea turtles have been observed in the waters of Midway Atoll swimming, nesting, and foraging in a few main areas. The highest concentration of basking green turtles occurs on a 140 m section of beach on Sand Island known as Turtle Beach. Turtles are routinely sighted between the Inner Harbor and the Cargo Pier (BE, p. 2-2).

The hawksbill sea turtle was listed as endangered on June 2, 1970, under the Endangered Species Conservation Act of 1969 (35 CFR 8490). The biology, habitat, and conservation status of this species is described in a recent status review (NMFS & USFWS 2007b). Hawksbill sea turtles occur occasionally in waters around the MHI. This species is considered rare to nonexistent in most localities, but are known to nest primarily on several small sand beaches on Maui, Oahu, Molokai and Hawaii Island. Although Midway Atoll may provide marine feeding grounds for hawksbill turtles, hawksbill turtles have not been observed at Midway over the last five years (BE, p. 2-3).

The leatherback sea turtle was listed as endangered on June 2, 1970, under the Endangered Species Conservation Act of 1969 (35 CFR 8490). The biology, habitat, and conservation status of this species is described in a recent status review (NMFS & USFWS 2007c). Leatherback sea turtles do not nest or usually come close to Hawaiian shores, though they are regularly seen offshore in deep water. To date, only one leatherback turtle has been observed in Midway (BE, p. 2-3).

The loggerhead sea turtle was listed as threatened on July 28, 1978 (43 CFR 32800). The biology, habitat, and conservation status of this species is described in a recent status review (NMFS & USFWS 2007d). Loggerhead sea turtles are occasionally found in waters around the MHI. To date, only one loggerhead has been recorded in the vicinity of Midway Atoll through satellite tagging studies. No known nesting events have been documented on Midway (BE, p. 2-3).

The humpback whale was listed as endangered on December 2, 1970, under the Endangered Species Conservation Act of 1969 (35 CFR 18319). The biology, habitat, and conservation status of this species is described in the recovery plan (NMFS 1991). In the western North Pacific area, humpbacks migrate between feeding areas in the Gulf of Alaska during the summer, and wintering grounds in the Hawaiian Islands during the summer. Thus, they are common around the MHI between October and May, especially between November and April when adults and calves are abundant around Maui, Molokai, Kahoolawe, Lanai, and Penguin Bank. In contrast, humpbacks are infrequently seen in Midway Atoll Refuge, even during the winter (BE, p. 2-2; Nishiwaki, 1972). A factor that may limit abundance at Midway is seawater temperature because humpbacks typically remain in waters warmer than 21.1 °C during the winter (Rasmussen *et al.*, 2007). A 2007 visual and acoustic survey across the NWHI did not detect humpback whales in waters colder than 21.1 °C, which included Midway Atoll (Johnston *et al.*, 2007).

The sperm whale was listed as endangered on December 2, 1970, under the Endangered Species Conservation Act of 1969 (35 CFR 18319). The biology, habitat, and conservation status of this species is described in the recovery plan (NMFS 2006). During the winter, sperm whales occur in Hawaiian waters. Despite only one record of a sperm whale occurring within the action area (BE, p. 2-2), several sperm whales were observed nearby in a summer/fall 2002 shipboard line-transect survey of waters within the U.S. EEZ of the Hawaiian Islands. The survey recorded 43 sperm whale sightings throughout the survey area that included Midway Atoll (Barlow 2003).

The Hawaiian monk seal was listed as endangered on November 23, 1976 (41 CFR 51611). The biology, habitat, and conservation status of this species is described in the *Recovery Plan for the Hawaiian Monk Seal* (NMFS 2007). This species is endemic to the Hawaiian Archipelago, with an estimated total population of 1,202 individuals. The majority of the population occurs in the NWHI, including on Midway, which supports a population of 60 individuals (NMFS 2007). Seals forage extensively within the lagoon, near the fringing reef, and outside the reef at Midway Atoll, and haul out to rest on the beaches of Sand, Eastern, and Spit Islands as well as portions of the emergent coral reef. Pupping has increased dramatically at Midway Atoll since the early 1990s. Although the majority of the pups are born on Eastern and Spit islands, three pups were born on Sand Island in 2006. The births on Sand Island occurred at Frigate Point, the middle of West Beach, and at Rusty Bucket. Pups were also born at Turtle Beach and one was born on the boat ramp in the Inner Harbor in 2002. Reef Hotel, a popular snorkeling location, appears to be an important reef haul-out location for monk seals (BE, p. 2-1).

Effects of the Proposed Action

NMFS used the following information to determine effects of the proposed action: Multiple iterations of the draft BE and draft VSP, the final 5-21-07 BE and VSP, other information on USFWS's VSP website <http://www.fws.gov/midway/VSP/MidwayVSPindex.html> (such as the 10-18-07 draft Monitoring Plan), all literature cited in this letter, and meetings, phone calls, and emails between USFWS and NMFS staff that took place from 8-24-06 to 10-25-07.

Based on the rarity of sightings, no known nesting, and tendency to remain far from land within the action area, the proposed action is unlikely to affect the leatherback, loggerhead, and hawksbill sea turtles. Therefore, we conclude that the proposed action will have no effect on these three species, and thus they are not considered further in this consultation.

In order to concur that a proposed action is not likely to adversely affect listed species, NMFS must find that the effects of the proposed action are expected to be insignificant or discountable, as defined in the joint USFWS-NMFS Endangered Species Consultation Handbook: (1) insignificant effects relate to the size of the impact and should never reach the scale where take occurs; and (2) discountable effects are those that are extremely unlikely to occur (USFWS-NMFS 1998). This standard was applied in the following analysis of effects of the proposed action on the green sea turtle, the humpback whale, the sperm whale, the Hawaiian monk seal, and the Hawaiian monk seal's designated critical habitat. Our analysis considered several potential stressors, including:

1. Vessel disturbance/collisions;
2. Pollution from potential vessel groundings and discharge;
3. Anchor strikes and entanglement;
4. Direct human disturbance in the water from marine sports activities (green sea turtles and Hawaiian monk seals only);
5. Direct human disturbance on land from residents and visitors (Hawaiian monk seals only).

Our effects analysis for the green sea turtle is restricted to visitor impacts in the marine environment. Visitor impacts to sea turtle terrestrial habitat have been analyzed by USFWS's Intra-agency BE (USFWS 2007), as it has management authority over these same turtles on land.

1. Vessel disturbance/collisions.

Humpback whales may be exposed to close approaches from ships or ship strikes from cruise ships, tenders, and other watercraft due to the proposed action. Possible physiological and behavioral responses of humpback whales to approaching vessels include changes in respiration rate, increased swimming speed, fewer long dives, or spending more time submerged (Baker *et al.* 1983, Bauer and Herman 1986). Smaller pods of whales and pods with calves seemed more responsive to approaching vessels (Bauer and Herman 1986). Currently, one to three cruise ships per year starting in 2008 are expected to visit Midway. Once anchored in designated zones, tenders will ferry passengers to and from the cruise ship and Midway pier. From 1975-2007, most of the reported vessels that were involved in collisions with humpback whales were small to medium sized boats (19 – 80 feet), and there were no reports involving large ships (Lammers

et al., 2003; NMFS unpublished data). In addition, recent scientific evidence demonstrated that wintering humpback whales did not occur in waters cooler than 21.1 °C (Rasmussen *et al.*, 2007), which may explain why these whales were not observed near Midway Atoll in a 2007 survey (Johnston *et al.*, 2007).

Likewise, sperm whales may be exposed to close approaches from ships or ship strikes from cruise ships, tenders, and other watercraft due to the proposed action. However, none of the more than 30 reported vessel-cetacean collisions in Hawaiian waters in 1975-2007 involved sperm whales (Lammers *et al.*, 2003; NMFS unpublished data). Similarly, though stranding deaths in other cetacean species are often linked to collisions, there was no evidence that collisions caused the deaths of any of 48 stranded sperm whales that were studied in the U.S. in 1975 – 1996 (Laist *et al.* 2001).

Green sea turtles at or near the surface are vulnerable to collisions with motor boats or their propellers. In a study of green turtle avoidance of motorboats, all turtles on the surface avoided boats going 4 kph, but only 45 percent and 60 percent of turtles on the surface avoided boats going 11 kph and 18 kph, respectively (Hazel *et al.* 2007). Thus, although boat operators in the action area cannot exceed 10 kph, turtles may still be at risk of collisions. However, boat operators are expected to be able to observe and avoid turtles on the surface because the boats will be moving no more than 10 kph.

There are no documented records of Hawaiian monk seals that were struck by vessels, thus vessel avoidance and collisions are not identified as a threat in the recovery plan (NMFS 2007). Likewise, though it is possible that vessels could be grounded on reefs or other shallow areas within designated monk seal critical habitat, the likelihood of grounding is considered extremely low because of the small number of vessels that will be operating within the action area due to the proposed action.

Thus, given the small number of cruise ships visiting Midway, the low likelihood of collisions with cruise ships, tender speed limits, ship/tender operator monitoring for protected species, and other measures, we expect insignificant and discountable effects from vessel disturbance and collisions to humpback whales, sperm whales, green sea turtles, Hawaiian monk seals, and critical habitat for the Hawaiian monk seal, due to the proposed action.

2. Pollution from potential vessel groundings and discharge.

Unintentional vessel groundings could release hazardous materials, including oil or fuel spills, and lost gear that creates entanglement hazards, thereby presenting serious hazards to humpback whales, green sea turtles, and Hawaiian monk seals. However, the likelihood of grounding is considered extremely low because of the small number of vessels that will be operating within the action area due to the proposed action. In the event of a vessel grounding, USFWS has an existing oil spill response plan for Midway Atoll that can be employed as needed to minimize pollution effects to the marine environment, and USFWS would also retrieve any entanglement hazards.

Discharge of gray or black water is prohibited during their anchorage period and for the entire period they are within NWHI Monument waters. USFWS prohibits any vessel discharge, and will bar violators from future visits at Midway. Given the low likelihood of groundings, the response plan for groundings, and the penalties for illegal discharges, we expect insignificant and discountable effects from vessel groundings and discharge on humpback whales, sperm whales, green sea turtles, Hawaiian monk seals, and critical habitat for the Hawaiian monk seal, due to the proposed action.

3. Anchor strikes and entanglement.

As green sea turtles and Hawaiian monk seals have been documented throughout Midway waters, including the Inner Harbor and Cargo Pier, it is possible that an animal may be struck by a fast-sinking anchor. However, given that anchors will be lowered slowly, anchorage will be away from foraging areas for sea turtles and monk seals, and vessel operators will monitor for presence of sea turtles and monk seals during anchoring, we expect that anchor strikes pose insignificant and discountable effects to green sea turtles, Hawaiian monk seals, and other ESA-listed species due to the proposed action.

Marine mammals often become entangled with objects such as fishing nets, fishing lines, mooring lines, and anchor gear. Drowning is the most serious potential effect of entanglement for air breathing marine animals such as humpback whales, sperm whales, green sea turtles, and Hawaiian monk seals. Other effects include slow amputation of an entangled appendage, or long-term dragging of entangled marine debris. However, given that boat operators will vigilantly monitor the area to avoid sea turtles and marine mammals when anchoring and mooring, and that a very small number of vessels will be operating in the action area, we expect that entanglement poses insignificant and discountable effects on humpback whales, sperm whales, green sea turtles, Hawaiian monk seals, and critical habitat for the Hawaiian monk seal, due to the proposed action.

4. Direct human disturbance in the water from marine sports activities (green sea turtles and Hawaiian monk seals only).

Human encounters with green sea turtles and Hawaiian monk seals in the water during marine sports activities such as kayaking and snorkeling are likely. However, given limitations on approach distances to green sea turtles and Hawaiian monk seals, visitor education regarding approach distances, tight supervision of group tours, USFWS commitment to enforcement of approach distances, extensive off-limit areas, reduced shuttle boat speeds, and monitoring of interactions, we expect that direct human disturbance from marine sports activities poses insignificant and discountable effects on green sea turtles, Hawaiian monk seals, and critical habitat for the Hawaiian monk seal, due to the proposed action.

5. Direct human disturbance on land from residents and visitors (Hawaiian monk seals only).

Human encounters with Hawaiian monk seals on land during beach clean-ups, walking or biking interpretive tours, self-guided tours, or other activities are likely. Thus, the proposed action includes a Monitoring Plan (10-18-07 draft available on USFWS's VSP website

<http://www.fws.gov/midway/VSP/MidwayVSPindex.html>) that is designed to quantify disturbance to monk seals and other protected resources on Midway Atoll due to visitor activity. The Monitoring Plan is intended to detect any changes in monk seal behavior attributable to implementation of the proposed action, such as reduced usage of haul-out beaches, so that the VSP can be adapted accordingly. That is, if the Monitoring Plan shows that implementation of the proposed VSP is altering monk seal behavior, then the VSP will be updated with new measures to minimize whatever is thought to have caused the alteration in behavior.

Given limitations on approach distances, visitor education regarding approach distances, tight supervision of group tours, USFWS commitment to enforcement of approach distances, extensive off-limit areas, posting of signs warning visitors of a monk seal's presence and monitoring of human-seal interactions, we expect that direct human disturbance on land from residents and visitors poses insignificant and discountable effects on Hawaiian monk seals and Hawaiian monk seal critical habitat due to the proposed action.

Conclusion of Consultation

NMFS concurs with USFWS's determination that the proposed action is not likely to adversely affect the green sea turtle, hawksbill sea turtle, leatherback sea turtle, loggerhead sea turtle, humpback whale, sperm whale, Hawaiian monk seal, and the Hawaiian monk seal's designated critical habitat (USFWS 2007). Our concurrence is based on the finding that the effects of the proposed action are expected to be insignificant or discountable, as defined in the joint USFWS-NMFS Endangered Species Consultation Handbook (USFWS-NMFS 1998) and summarized at the beginning of the Effects of the Action section above.

The proposed action includes implementation of adaptive management to reduce effects on protected species (BE, p. 2-22). NMFS concurrence is based on the assumption that adaptive management will be effective, but by definition this program has not yet been fully designed. The adaptive management approach described in the BE includes the establishment of the Midway Atoll Wildlife Monitoring Work Group, which will evaluate and refine adaptive management triggers and responses as the proposed action is implemented. NMFS will have at least two representatives on the Work Group, thereby providing NMFS the mechanism to review and approve adaptive management measures throughout the implementation of the proposed action.

This concludes your consultation responsibilities under the ESA for species under NMFS's jurisdiction. Consultation must be reinitiated if: 1) the VSP is implemented beyond 2011; 2) a take occurs; 3) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; 4) the identified action is subsequently modified in a manner causing effects to listed species or critical habitat not previously considered; or 5) a new species is listed or critical habitat designated that may be affected by the identified action.

If you have further questions please contact Lance Smith on my staff at (808) 944-2258 or by email at lance.smith@noaa.gov. Thank you for working with NMFS to protect our nation's living marine resources.

Sincerely,

A handwritten signature in black ink, appearing to read "William L. Robinson". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

William L. Robinson
Regional Administrator

cc: Gerry Davis

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