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# Environmental Assessment for Retrieval of Adrift NOAA Buoy 3DV21

Prepared by:

Papahānaumokuākea Marine National Monument Office of National Marine Sanctuaries National Ocean Service National Oceanic and Atmospheric Administration U.S. Department of Commerce

[DATE]

#### **1.0 PURPOSE AND NEED**

#### Introduction

The National Data Buoy Center (NDBC) seeks access to Papahānaumokuākea Marine National Monument (PMNM or Monument) to retrieve NOAA buoy 3DV21 and any associated chains, lines, or debris, which are currently grounded at Neva Shoal, at the earliest possible opportunity (through a federal contract opportunity). This action is necessary to retrieve NDBC property, stop further damage to PMNM resources, and remove any debris associated with the adrift buoy (including the buoy) from the ocean/Monument environment. This environmental assessment addresses recovery of a grounded data buoy, which includes retrieval of the buoy and transport to Honolulu.

PMNM is one of the largest marine conservation areas in the world. Established on June 15, 2006, the Monument was created by Presidential Proclamation 8031 under the authority of the Antiquities Act (16 U.S.C. §§ 431-433). It encompasses 139,797 square miles of the Pacific Ocean (362,073 square kilometers) - an area approximately three times of the size of the main Hawaiian island chain, extending from Hawaii island to Kauai island. The area is also designated as a Particularly Sensitive Sea Area under the International Maritime Authority and is a United Nations World Heritage Site. The extensive coral reefs found in the Monument are home to over 7,000 marine species, one quarter of which are found only in the Hawaiian Archipelago. Many of the islands and shallow water environments are important habitats for rare species such as the threatened green turtle and the endangered Hawaiian monk seal, as well as the 14 million seabirds representing 22 species that breed and nest there. Land areas of the Monument also provide a home for four species of birds found nowhere else in the world, including the world's most endangered duck, the Laysan duck. PMNM is of great importance to Native Hawaiians, with significant cultural sites found on the islands of Nihoa and Mokumanamana, both of which are on the National and State Register for Historic Places.

The Monument is administered jointly by three Co-Trustee agencies – the Department of Commerce through the National Oceanic and Atmospheric Administration (NOAA), the Department of the Interior through the U.S. Fish and Wildlife Service (USFWS), and the State of Hawaii through the Department of Land and Natural Resources (DLNR) (collectively, the Co-Trustees). The Co-Trustees work in close collaboration and consultation with the Office of Hawaiian Affairs to ensure that both cultural and natural resources are protected in a manner aligned with Native Hawaiian resource management best practices. This unique management partnership of PMNM allows for the protection of the entire ecosystem through a stringent permitting process. NOAA is charged with co-managing PMNM as well as administering several environmental statutes including the Endangered Species Act (ESA), Marine Mammal Protection Act (MMPA), Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation Management Act (MSA), and National Marine Sanctuaries Act (NMSA) that have interagency consultation and permitting requirements. Federal agencies are required to

consult with the appropriate offices when an action triggers a consultation provision in any of these statutes

Presidential Proclamation 8031 and codifying regulations at 50 C.F.R. Part 404 stipulate that all activities in the Monument, with limited exceptions, require a permit. In addition, each PMNM issued permit is signed by all three Co-Trustee agencies to be valid. The PMNM permitting program is designed to manage and minimize human impact, ensuring the protection of the Monument's natural, cultural, and historic resources and a PMNM permit is required for the Proposed Action. All PMNM permit applications must meet the ten applicable Findings of Presidential Proclamation 8031, described below, prior to issuance of a permit:

- 1. The activity can be conducted with adequate safeguards for the resources and ecological integrity of the Monument.
- 2. The activity will be conducted in a manner compatible with the management direction of the Proclamation, considering the extent to which the conduct of the activity may diminish or enhance Monument resources, qualities, and ecological integrity; any indirect, secondary, or cumulative effects of the activity; and the duration of such effects.
- 3. There is no practicable alternative to conducting the activity within the Monument
- 4. The end value of the activity outweighs its adverse impacts on Monument resources, qualities, and ecological integrity.
- 5. The duration of the activity is no longer than necessary to achieve its stated purpose.
- 6. The applicant is qualified to conduct and complete the activity and mitigate any potential impacts resulting from its conduct.
- 7. The applicant has adequate financial resources available to conduct and complete the activity and mitigate any potential impacts resulting from its conduct.
- 8. The methods and procedures proposed by the applicant are appropriate to achieve the proposed activity's goals in relation to their impacts to Monument resources, qualities, and ecological integrity.
- 9. The applicant's vessel has been outfitted with a mobile transceiver unit approved by NOAA Office of Law Enforcement and complies with the requirements of Proclamation 8031.
- 10. There are no other factors that would make the issuance of a permit for the activity inappropriate.

All issued permits undergo a review process, during which time all relevant federal and state regulations and policies are complied with prior to issuance. In addition, issued permits contain General Terms and Conditions that satisfy Proclamation 8031, Monument regulations, and relevant state and federal agency mandates and policies. Issued permits also specify the requirements for compliance with quarantine protocols to avoid introduction of alien species, and list prohibited activities such as the disturbance of cultural sites or historic artifacts. Special Conditions may also be applied to particular permits, placing additional restrictions on activities in order to minimize impacts to Monument resources. This Environmental Assessment analyzes the response and recovery of NOAA buoy 3DV21 that grounded at Neva Shoal on or about November 4, 2015. No activities would occur on Hawaiian Islands National Wildlife Refuge

(HINWR) lands, therefore, this document does not consider impacts to HINWR lands. For more information please visit <u>http://www.papahanaumokuakea.gov/</u>.

#### **Purpose and Need**

NOAA Buoy 3DV21 has a diameter of 10 ft and a tower height of 18 ft above the water's surface. The hull depth and tripod extend 8 feet below the water's surface (for photographs see *Appendix 1: Specifications for NOAA Buoy 3DV21*). The buoy displaces 3,000 lbs and is made of closed cell foam. The buoy contains no petroleum products or other hazardous materials other than air-alkaline batteries. It is marked with station number "51000" and is designated "51x00" for reference. The most recent position of the buoy can be found at: http://www.ndbc.noaa.gov/station\_page.php?station=51X00.

On March 10, 2013, the National Weather Service (NWS) NDBC became aware that NOAA buoy 3DV21 had gone adrift from its moored location approximately 245 nautical miles (nm) northeast of Honolulu. On or about November 4, 2015, the adrift buoy grounded at 27.976°N, 173.86°W, 7 nm southeast of Lisianski Island within the Neva Shoal.<sup>1</sup> The ONMS member of the PMNM Monument Management Board was notified of the grounding by the NDBC on November 10, 2015. The purpose of the proposed action is to respond to and remove the grounded NDBC buoy at Neva Shoal and assess damages caused by the grounding.

Due to the remoteness of Neva Shoal and the uninhabited islands and atolls surrounding the area in which the adrift buoy grounded, impact to the nearshore marine environment is currently unknown. Expedient removal and transport of the buoy is necessary to ensure continued protection of the natural and cultural resources in PMNM. The marine environment in PMNM is pristine, and as a result, fragile. Section 3.0 of this document further details the state of the natural resources in PMNM as well as the fragility and importance of such natural resources. Should the buoy remain aground at Neva Shoal, there is a possibility that it could break loose and drift, possibly grounding at another location, thus necessitating removal. Similarly, the proposed action is time sensitive because of the probability of further damage the longer the buoy remains aground and unattended. In particular, marine conditions in both winter (November – January) and spring (February – April) are typical seasons in which high surf and strong wave surge are common, necessitating quick and time-sensitive action to retrieve and remove the buoy from PMNM as soon as possible.

<sup>&</sup>lt;sup>1</sup> The buoy has since moved from the original grounding site. As noted above, the currently reported position is provided at http://www.ndbc.noaa.gov/station\_page.php?station=51X00.

# 2.0 Description of Proposed Action Alternatives

This environmental assessment provides analyses and supporting documentation for the Administration to determine whether a Finding of No Significant Impact, or an Environmental Impact Statement, is warranted. To make this determination, alternatives based on a variation of retrieval and transport methods are being considered.

All action alternatives that would remove the buoy would obtain authorization to access and conduct activities within PMNM under permit number PMNM-2016-001, the 2016 Co-Trustees Conservation & Management permit. This permit is issued annually to the co-managing agencies of PMNM and grants access for each of the seven co-managing agencies to conduct conservation and management activities. Activities permitted under this permit are those that would further each respective agency's mission and priorities as it aligns with the 2008 Monument Management Plan. The following is a summarized list of the suite of activities permitted by PMNM-2016-001:

- 1. Entrance
- 2. Vessel operations
- 3. Swimming, snorkeling, SCUBA diving
- 4. Removing materials that pose threats to Monument resources
- 5. Emergency response, damage assessment, mitigation, restoration, and monitoring

A detailed account of each of the above permitted activities can be found in the original permit document (*Appendix 2: PMNM-2016-001; 2016 Co-Trustees Conservation & Management permit*). While in PMNM, the vendor would also be required to comply with the following special terms and conditions of the PMNM permit:

- Discharging greywater outside of all Special Preservation Areas and the Midway Atoll Special Management Area.
- Discharging biodegradable solid waste associated with galley operations restricted to 3 nautical miles (ground to 1 inch in diameter) and 12 NM (unground) outside of all Special Preservation Areas and the Midway Atoll Special Management Area.
- Tenders and small vessels shall be equipped with engines that meet EPA emissions requirements.
- Refueling of tenders and all small vessels shall be done at the support ship and outside the confines of lagoons or near-shore waters in the State Marine Refuge.
- No fishing is allowed in State waters.
- To prevent introduction of disease or the unintended transport of live organisms, the vendor shall comply with the disease and transport protocols attached to this permit.
- To ensure the protection of PMNM resources, the vendor shall conduct all activities in accordance with the following PMNM Best Management Practices (BMPs) and guidelines, as attached (see Appendix 2):
  - a. Marine Alien Species Inspection Standards for Maritime Vessels (BMP #001)
  - b. Human Hazards to Seabirds Briefing (BMP #003)

- c. Best Management Practices for Boat Operations and Diving Activities (BMP #004)
- d. Best Practices for Minimizing the Impact of Artificial Light on Sea Turtles (BMP #009)
- e. Marine Wildlife Viewing Guidelines (BMP #010)
- f. Disease and Introduced Species Prevention Protocol for Permitted Activities in the Marine Environment (PMNM BMP # 011)
- g. BMPs for Maritime Heritage Sites (BMP #017)

The contract vessel identified to conduct response (retrieval and transport) activities is the M/V *Lady Alice* (For specifications, see Table 1 below). A total o 13 persons which will include the ships crew, a dive team and two NOAA representatives would travel aboard the M/V *Lady Alice* to assist in activities to retrieve and transport NOAA Buoy 3DV21 from its current location at Neva Shoal to Honolulu. The NOAA participants - one NOAA/PMNM representative and one NOAA/NDBC buoy technician - would travel aboard the contract vessel to provide expertise where appropriate, assist in consultation with response methods, and ensure compliance with all general and special conditions of the permit, including Monument established best management practices for minimization of impacts to the environment. A hull and rat inspection of the M/V *Lady Alice* would be conducted prior to departure from Honolulu.

#### Table 1: Vessel Characteristics



and the second se	
M/V Lady Alice	Deck aboard M/V Lady Alice
Beam Length	95 feet
Fuel Capacity	20,000 gallons
Water Capacity	6,000 gallons
Passenger Capacity	13 persons
Propulsion	Twin Diesel
VMS	Faria Watch Dog w/ CLS, GWD
	013-0090060208
Insurance Provider	Compass Solutions

The following best practice methods would be employed under <u>all</u> action alternatives that propose to remove the buoy. No dives would exceed 60 ft due to the need for and absence of a decompression chamber aboard the M/V *Lady Alice*. If conditions allow, the initial dive would

be to conduct a video inspection of the buoy and the surrounding reef to document "as found" conditions. The diver would swim and hover above the bottom so as to limit any disturbance to the coral and reef. The diver would inspect as much of the mooring line in contact with the reef as umbilical length, environmental conditions, and/or depths allow. This initial assessment dive should also help determine what is physically keeping the buoy anchored to the ocean floor. Information gathered from this dive would be used to develop a buoy recovery plan. The buoy recovery plan would have the concurrence of the NOAA PMNM representative and would take into consideration best practice methods defined above to safely free the buoy from the bottom with minimal disturbance to the bottom environment.

To maximize the team's flexibility in the field, the M/V *Lady Alice* would supply a small boat to operate in shallow waters and/or in close proximity of the grounded buoy at the grounding site. Similarly, both Surface Supplied Diving (SSD) and SCUBA capabilities would be available to the dive team. SSD operations would allow for the dive team to operate for a longer period due to the surface supplied air source, however, maneuverability would be limited by the air umbilical. Conversely, SCUBA dive operations would limit the team in duration depending on the depths at which the team operates, but the team would be free to maneuver during operations. For both dive platforms, the dive team would be limited to dives at 60 ft or shallower due to the absence of a dive compression chamber aboard the M/V *Lady Alice*.

In addition to the general procedures described above, the following general methods will be employed ensure safety of natural resources and the crew when (1) approaching; (2) assessing; and (3) recovering the buoy.

Approaching the buoy

- 1. Deployment of a smaller dive boat would be necessary to access the buoy directly.
- 2. To protect the coral and safety of the ship, the ship would approach with caution and not anchor.
- 3. A marker buoy would be deployed to mark the grounding site for the purpose of reacquiring the site for post-removal damage assessment
- 4. A snorkel team would be deployed to conduct an initial assessment of the site characteristics and the state of fouling by the chain and line of the mooring.

Assessing the buoy

1. If conditions allow, SCUBA divers would be deployed with submersible cameras to survey the method in which the buoy is attached to the seafloor

a. If Surface Supplied Diving is required, the vessel must make a three-point mooring. If a mooring is required it would be made in a sandy seafloor and avoid the coral. It is preferred that SCUBA be attempted first.

- 2. Video will be provided to the NOAA PMNM representative for review.
- 3. After the assessment dive is complete, the dive team, in consultation with the NOAA PMNM representative, would establish the final buoy recovery plan, based on the possible retrieval methods described in this document.

Recovering the buoy

1. Details of the recovery cannot be known until an on-site assessment is done but the buoy

will be recovered using the following best management priorities:

a. A surface tended line will be attached to the buoy at all times during attempts to free it from the bottom.

b. A surface tended recovery line will be attached to the free end of the mooring chain and pulled to the surface with the assistance of lift bags.

c. Whatever line configuration that is deemed appropriate for the situation will be required to have diligent surface tending or floatation.

d. All dives needed to recover any of the remaining mooring will operate on the priority of minimizing additional damage. The maximum depth for operations will not exceed 60 ft. GPS coordinates of any unrecovered mooring line and chain will be taken and provided to the NOAA PMNM representative.

e. If a three point anchor mooring is required; it must be secured in sand bottom habitat.

Following the recovery operations and return to port, the vessel will be docked in Honolulu, Hawai`i at a yet to be determined commercial pier with access for a forty-foot tractor trailer. A crane would be available to load Buoy 3DV21 onto the NOAA flatbed trailer upon request. The buoy may be initially stored for up to seven days, during the initial storage period, NDBC will arrange for the buoy to be shipped back to the National Data Buoy Center, Stennis Space Center, MS, which is the buoy's ultimate destination.

The following action alternatives will be discussed in further detail below:

Alternative #1 (preferred action alternative): Disentangle or detach the buoy's mooring line and chain prior to re-positioning the buoy to minimize disturbance to the seafloor and transport the buoy to Honolulu.

Alternative #2: Secure a tow line around the buoy and pull it off the reef and transport the buoy to Honolulu

No Action Alternative: Leave the buoy adrift and currently aground at Neva Shoal.

## 2.1 Alternative 1: Detach the buoy's mooring line and chain from the buoy and remove as much of the mooring line and chain as possible from the marine environment prior to re-positioning the buoy and any remaining mooring line and chain from the stranding site to a location where it can be recovered.

Alternative 1 (preferred alternative) proposes to retrieve NOAA buoy 3DV21 and, to the extent practicable, all associated mooring chain and line. The decision to remove or leave the mooring line would be situational and consider damage that may result from removing the line and/or chain from the reef in its current condition. In addition, to maximize the recovery team's flexibility in the field, detailed recovery operations will be finalized once an initial dive assessment has been completed and NOAA PMNM and NDBC representatives are consulted. Recovery operations would consider the following priorities: (1) crew safety; (2) marine resource protection and safety; and (3) retrieval of buoy. To maximize the safety of the crew and

protection of the marine resource, all recovery operation methods will take into account the methods detailed above as they relate to approaching, assessing and recovering the buoy. The proposed method of retrieval under the preferred action alternative is to remove and retrieve as much as possible of the buoy's mooring line and chain prior to moving the buoy to a location in which the tender vessel can prepare the buoy for transport to Honolulu. Under this alternative, as much as possible of the buoy mooring line and chain would be disentangled and removed from the marine environment, taking into consideration the extent to which the line and chain is entangled with any bottom substrate, weather conditions, and depth of all associated mooring lines and chains. All methods described in Section 2.0 above related to approaching, assessing and removing the buoy would be followed, to the extent allowable based on weather conditions and buoy location.

Once the buoy is detached from the mooring line and chain, it would be secured via primary and secondary tow lines to the small boat and towed to the M/V *Lady Alice*. Under both Alternatives #1 and #2, there are two transport methods that would be employed to return the buoy to Honolulu. Both transport methods are described in detail below and the captain and crew, in consultation with the NOAA representatives, would determine the appropriate transport method. This determination would be made with consideration for weather conditions, current, swell direction, visibility, wind speed, vessel capabilities, and crew safety.

Transport Method #1 (preferred method) proposes to transport the buoy aboard the M/V *Lady Alice*. The buoy would be surrounded by a cradle to allow for the entire buoy to be brought aboard the M/V *Lady Alice*. A winch line would be connected to the bottom and top of the buoy's cradle and the buoy would be winched onto the back deck of the vessel to prevent further damage to the buoy and/or other marine resources during transport to Honolulu.

Transport Method #2 proposes to tow the buoy from Neva Shoal to Honolulu (approximately 1,066 nm) using a tow line behind the M/V *Lady Alice*. Under this transport method, a tow bridle secured from the M/V *Lady Alice* would be used to attach to the buoy's primary and secondary tow lines in preparation for transport to Honolulu. The prevailing trade winds are NE and therefore, transit from Neva Shoal to Honolulu would be upwind and against the swells. It is anticipated that the length of time at sea during transport would increase due to the need to ensure the safety of the buoy and tow-line during transport. Personnel would monitor the tow lines 24 hours/day to ensure the primary tow line remains taut and that both tow lines remain attached to the buoy. All PMNM Best Management Practices related to vessel operations (Best Management Practices for Boat Operations and Diving Activities (BMP #004)) would be followed. In the unlikely event of marine mammal entanglement, the vessel crew would immediately take action to slow the vessel and free the species; and contact the appropriate NMFS and ONMS staff to report the incident.

# 2.2 Alternative #2: Pull the buoy and whatever mooring line and chain is still attached to the buoy from the stranding site to a deeper water location where the buoy and as much mooring line and chain as possible can be recovered.

Alternative #2 proposes to retrieve the buoy by securing the buoy to a tow line and, without detaching the mooring line and chain, pull the buoy and it's mooring line and chain free from the bottom, and tow the buoy and mooring line and chain to a deeper water location where they can be recovered. Under this alternative, the dive team would secure a primary and secondary tow line from the buoy to the M/V Lady Alice. The vessel's small boat would be used to approach and work within the vicinity of the buoy while the M/V Lady Alice remains at a distance the small boat team is ready to attach the tow line. While not the preferred retrieval alternative, this method may become necessary in the event the dive team is unable to access the buoy's mooring line and/or chain to successfully detach the mooring line and/or chain from either the buoy and/or the surrounding substrate in which it is attached. Conditions that may prohibit a dive team from safely operating at or around the buoy would be high surf, strong wave surge, strong current, poor visibility, and/or a combination of poor weather conditions. This determination will be made once the initial dive assessment is completed and in consultation with the NOAA PMNM representative aboard the M/V Lady Alice. All methods described in Section 2.0 above related to approaching, assessing and removing the buoy would be followed, to the extent allowable based on weather conditions and buoy location. The two potential Transport Methods described in Alternative #1 also apply to this Alternative and will not be further discussed here.

# 2.3Alternative #3: Leave the buoy grounded at Neva Shoal and take no action (No Action Alternative).

Under this alternative (no action alternative) the buoy and associated mooring line and chain would aground at Neva Shoal with the potential to become adrift in the future. There is no guarantee that the buoy would remain aground at Neva Shoal and there is a possibility under this alternative that the buoy could break free once again and continue drifting through the Monument, with the potential to strand at some other location. This no action alternative would entail leaving the buoy either adrift or aground within PMNM, thus continuing to pose a current and future threat to the marine ecosystem and marine species within PMNM.

#### **3** Affected Environment

This section includes a brief summary of the physical, biological, socioeconomic and maritime heritage and cultural environments for each sanctuary and Monument in the region that may be affected by the proposed action. For a complete description of the environmental setting within the Monument please see the <u>management plan</u> for PMNM Management Plan. These documents can be located at the website below:

• Management Plan for Papahāhanaumokuākea Marine National Monument (PMNM 2008) <u>http://www.papahanaumokuakea.gov/management/mp/vol1\_mmp08.pdf</u>

#### **3.1** Papahānaumokuākea Marine National Monument

#### 3.1.1 Location and Physical Environment

#### **Physical Characteristics**

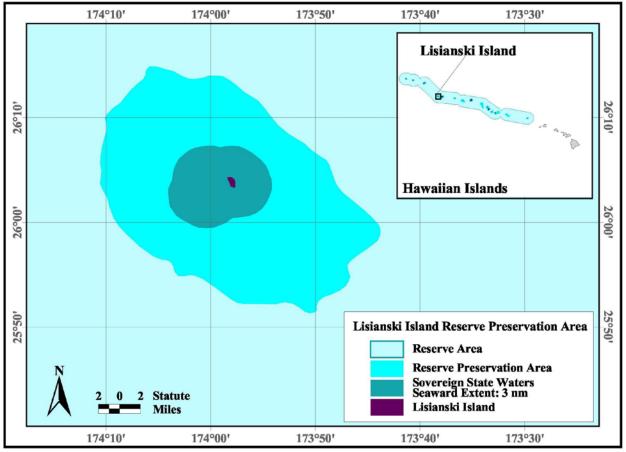
The Hawaiian Archipelago is a part of the Hawaiian Ridge-Emperor Seamounts chain in the central North Pacific Ocean. The Hawaiian Ridge-Emperor Seamounts chain is comprised of more than 80 volcanoes and is the result of the Pacific Plate traveling northward then northwestward over the stationary Hawaiian oceanic "hot-spot" (currently located underneath the Island of Hawai'i) over the past 70 million years (United States Coast Guard [USGS] 1999). The Hawaiian Ridge-Emperor Seamounts chain extends approximately 3,728 miles (6,000 kilometers (km)) from the main Island of Hawaii (the youngest of the islands) to the Aleutian Trench, which parallels the Aleutian Islands of Alaska. The Hawaiian Ridge section of this chain is approximately 1,616 miles (2,600 km) in length (the equivalent distance of Washington D.C. to Denver, CO) extending from the Island of Hawaii to Kure Atoll (USGS 1999).

The Archipelago is comprised of two island groups: The "Main" Hawaiian Islands (MHI) and the Northwestern Hawaiian Islands (NWHI) or Papahānaumokuākea Marine National Monument (PMNM or Monument). The eight Main Islands are grouped at the southeastern end of the Archipelago and occupy about 373 miles (600 km) of its total length, while the NWHI extend about another 684 miles (1,100 km) to the west-northwest. The capital city of Hawaii, Honolulu, on the island of Oahu, is located approximately 2,361 miles (3,800 km) from the west coast of the Unites States (U.S.) mainland, about 3,728 miles (6,000 km) east of Japan, and 2,734 miles (4,400 km) due south of Anchorage, Alaska (Friedlander et al. 2009; USGS 1999). The MHI are the youngest of the Hawaiian Island Archipelago. The MHI are comprised of eight large islands (Oahu, Kauai, Maui, Hawaii, Molokai, Lānai, Niihau, Kahoolawe) as well as numerous minor islands, islets and stacks (Hawaii Department of Business, Economic Development and Tourism [DBEDT] 2010). The MHI comprise approximately 7,797 square miles (12,548 square kilometers) of land and 889 mi (1,431 km) of coastline (Coastal Geology Group 2011; DBEDT 2010).

The Monument encompasses 137,793 square miles (mi<sup>2</sup>) (362,061 square kilometers (km<sup>2</sup>)) of the Pacific Ocean, an area larger than all U.S. National Parks combined, and makes up the northern three-quarters of the Hawaiian archipelago, beginning in the northwest at Kure atoll, the most northerly coral reef atoll in the world, and extending approximately 1,200 miles (1,043 nm, 1,931 km) southeast to Nihoa, 165 miles northwest of Kaua'i. There are ten main islands and atolls in the NWHI. The two southernmost islands, Nihoa and Mokumanamana, are basaltic islands. Four of the five middle landmasses are open atolls (French Frigate Shoals (FFS) and Maro Reef) and sandy islands (Laysan and Lisianski, including Neva Shoal). La Perouse Pinnacle (at FFS) and Gardner Pinnacles are small basaltic outcrops, remnants of islands similar to Nihoa and Mokumanamana. The three northernmost land masses, Pearl and Hermes, Midway, and Kure, are classic atolls. In addition, there are approximately 30 submerged banks within the Monument. Deepwater banks, seamounts and the abyssal plain are among the least studied environments of the NWHI. While most of the Monument area can be considered pelagic (open sea) habitat, submersible surveys on South Pioneer Ridge (Pioneer Bank) and two unnamed seamounts, one east of Laysan Island and the other east of Mokumanamana, have revealed the presence of various substrate types, deposited when these geologic features were at sea level. The estimated area of all parts of the Monument with depths greater than 1,000 fathoms (6,000 ft., or 1.8 km.) is 117,375 mi<sup>2</sup> (304,000 km<sup>2</sup>), or about 84 percent of the entire Monument.

The buoy is currently anchored at 25.98°N, 173.87°W in the Neva Shoal area southeast of Lisianski Island within the federal (not state) waters of Papahānaumokuākea Marine National Monument. Lisianski Island is about 1.6 sq. km in size and is surrounded by a vast shallow-water coral reef ecosystem called Neva Shoal. Neva Shoal is estimated to be 1,158 sq. km in size. Lisianski Island and Neva Shoal were formed approximately 20 million years ago when the underlying shield volcano and a portion of the associated coral reef bank were lifted above sea level. The <u>NWHI Coral Reef Ecosystem Reserve Preservation Area of Lisianski Island</u> includes the island and submerged lands from the seaward boundary of Hawaii state waters out to a mean depth of 100 fathoms.

In August the 2015 Reef Assessment and Monitoring Program (RAMP) monitored a site within a quarter mile of the buoy's current location. Figure 1 below describes a baseline characterization of the area and includes accurate data on depth and bottom characteristics. The buoy is in about 45 feet of water, on a gradual slope with an irregular bottom composed of both live and dead coral. The area contains a number of large coral heads, some up to 18 feet in height. Total coral coverage is approximately 20%, with approximately 5% macroalgae cover (Pers. comm. Godwin 2015).



**Figure 1 Map of Lisianski Island and associated Reserve Preservation Area** (Source: <u>NCCOS</u>)

The proposed action area would take place in the immediate vicinity of the anchored buoy, and includes the area transited between Neva Shoal and Honolulu, Hawaii (see **Figure 2** for a detailed geographic map).



**Figure 2 National Geographic map of Hawaiian Archipelago with buoy and port locations highlighted.** (Source: National Geographic Society (red locations added))

The Hawaiian Archipelago is part of the Hawaiian Ridge-Emperor Seamounts chain in the central North Pacific Ocean. The Archipelago is comprised of two island groups: The "Main" Hawaiian Islands (MHI) and the "Northwestern" Hawaiian Islands (NWHI). The Papahānaumokuākea Marine National Monument is a marine conservation area surrounding the entirety of the NWHI chain. Honolulu is located on the island of Oahu, approximately 3,800 km from the west coast of the United States mainland. Between Lisianski Island and Oahu lies Laysan Island, Maro Reef, Gardner Pinnacles, French Frigate Shoals, Mokumanamana, Nihoa, Niihau, and Kauai (U.S. Department of Commerce 2014).

#### Meteorological/Climatological and Air Quality

The climate of the entire Hawaiian archipelago features mild temperatures year-round, moderate humidities, persistent northeasterly trade winds, and infrequent severe storms. Hawaii's climate is notable for its low day-to-day and month-to-month variability. The surrounding ocean has a dominant effect on the weather of the entire archipelago. The maximum monthly climatological mean sea-surface temperature measured over the last 20 years at Kure is 80.6 °F (27 °C) in August with monthly minimums in February at 66.2 °F (19 °C). At the southern end of the Monument, the annual variation in sea surface temperature is much less, with French Frigate Shoals varying only between 74 °F and 81.5° F (23.3 °C and 27.5° C) throughout the year. On average, between four and five tropical typhoons or hurricanes are observed annually in the Central Pacific. Most of these storms develop in the eastern tropical Pacific, but some form in the central tropical Pacific, and occasionally typhoons approach the Monument from the Western Pacific. Much more common, and perhaps more significant as a natural process affecting the geology and ecology of the Monument, are the extra-tropical storms and significant wave events that regularly move across the North Pacific in the boreal winter. These large wave events (larger than 33-foot or 10-meter waves) influence the growth forms and distribution of coral reef organisms and affect the reproductive performance of winter-breeding seabirds nesting on low islets in the Monument. Annually, wave energy and wave power (energy transferred across a given area per unit time) are highest (~1.3 W/m) between November and March and lowest (~0.3 W/m) between May and September.

The atmospheric environment throughout the NWHI is generally considered to be relatively pristine. This is due to the remoteness of the NWHI, the fact that most of the islets and shoals remain uninhabited, and the fairly consistent trade wind conditions.

#### Pacific Ocean around the Hawaiian Archipelago

The marine environment of the NWHI and waters offshore the MHI are generally considered pristine. Near the Hawaiian Islands, oceanic flows are generally from east to west, with vigorous eddies forming on the leeward side of the islands (Flament et al. 1998). The archipelago spans such a great distance that its opposite ends often experience different oceanographic and meteorological conditions (Friedlander et al. 2009). Biological productivity in the pelagic zone is very dynamic. Physical conditions present in the water column, such as isotherm and isohaline (temperature and salinity) boundaries, often determine what species will be present in the surrounding waters (USFWS 2008a). A mixed layer is present below the surface and ranges in depth from 400 ft (120 m) in winter to less than 30 m (100 ft) in summer. Below this layer there is a thermocline (sharp decrease in temperature) from 25° Celsius (C) at the surface to 5°C at 2,300 ft (700 m), then decreases to 1.5°C at the bottom. Surface salinities range from 35.2 parts per thousand (ppt) at 26°N to 34.3 ppt at 10°N. Salinity reflects the balance between precipitation and evaporation so the decrease in salinity at the southern end of the Hawaiian Islands reflects the higher amount of precipitation near the Inter-Tropical Convergence Zone. Salinity tends to decrease with depth, indicating the sinking of lower salinity water from the northern ocean. Higher salinity water (35.2 ppt) is present at the surface down to 500 ft (150 m), lower salinity (34.1 ppt) down to 1670 ft (500 m), and then the salinity increases slightly to 34.7 ppt for very deep abyssal waters (Flament et al. 1998).

Nutrient conditions in the Hawaiian Islands are influenced by both local and regional factors. The concentration of nutrients (such as nitrate, nitrite, phosphate, silicate) is small at the surface, but increases with depth (Flament et al. 1998). Localized wind and bathymetric features may cause upwelling to occur, bringing the cooler, nutrient-rich deep water closer to the surface. Circulation cells and wake eddies found downstream of oceanic islands may concentrate plankton, enhancing productivity near those islands (Ashmole and Ashmole 1967; Boehlert 1993; USFWS 2008). Regional factors include subtropical fronts and the high chlorophyll content of the associated waters north of the front.

The Monument is located at the northern edge of the oligotrophic tropical Pacific, in the North Pacific central gyre ecosystem. Regional factors are largely influenced by the position of the subtropical front and associated high chlorophyll content of waters north of the front. High-chlorophyll waters intersect the northern portions of the NWHI during southward winter migrations of the subtropical front. The influx of nutrients to the NWHI from these migrations is considered a significant factor influencing different trophic levels in the NWHI. The Monument is near the 18°C sea surface isotherm, a major ecological transition zone in the northern Pacific. This boundary, also known as the "chlorophyll front," varies in position both seasonally and annually, occasionally transgressing the Monument boundary and surrounding the northern atolls of Kure and Midway. The movement of the front influences overall ocean productivity, and resultant recruitment of certain faunal elements such as Hawaiian monk seals and Laysan and

black-footed albatrosses. The northernmost atolls also are occasionally affected by an episodic eastward extension of the Western Pacific warm pool, which can lead to higher summer ocean temperatures at Kure than are found in the more "tropical" waters of the main Hawaiian Islands farther south.

#### Acoustic Environment

Underwater sound in the ocean can come from a variety of natural and anthropogenic sources. Anthropogenic sources include shipping, general vessel traffic, tour or recreational boats, fishing vessels, aircraft, research, energy and mineral exploration, underwater construction, seismic devices, pingers, and navy activities, such as use of sonar and underwater explosions. Potential impacts of sound on marine organisms can range from no or very little effect to various levels of behavioral reactions, physiological stress, threshold shifts, auditory masking, and direct trauma. Responses to sound generally fall into three categories: behavioral, acoustic, and physiological. Noise pollution can be intense and acute or less intense and chronic. Commercial shipping is considered to be the major contributor to low frequency noise within the Monument. Commercial and recreational vessel traffic both contribute to low frequency noises with the MHIs.

#### 3.1.2 Biological Environment

#### **Biological Habitat**

The Hawaiian island archipelago supports a diverse and unique array of both marine and terrestrial flora and fauna. With a spectrum of bathymetry and topography ranging from abyssal basins at depths greater than 15,000 ft. (4,572 m) below sea level to rugged hill slopes and cliff tops of each island, the Hawaiian Islands represent a complete cross section of a Pacific archipelagic ecosystem. Habitats in the Hawaiian island archipelago include deep pelagic basins, abyssal plains, submarine escarpments, deep and shallow coral reefs, shallow lagoons, littoral shores, dunes, and dry coastal grasslands and shrublands. Relatively high percentages of most taxonomic groups in the Hawaiian islands are found nowhere else on earth.

The physical isolation of the Hawaiian Archipelago explains the relatively low species diversity and high endemism levels of its biota (DeMartini and Friedlander 2004). The direction of flow of surface waters explains biogeographic relationships between the Hawaiian islands and other sites, such as Johnston Atoll to the south, as well as patterns of endemism, population structure, and density of reef fish within the archipelago.

#### Fishes and Invertebrates

The shallow marine component of the Monument is nearly pristine in most locations and has been described as a "predator-dominated ecosystem," an increasingly rare phenomenon in the world's oceans. Large, predatory fish—such as sharks, giant trevally, and Hawaiian grouper—that are rarely seen and heavily overfished in populated areas of the world are extremely abundant in the waters of the Monument. For instance, such species comprise only 3 percent of fish biomass in the heavily used main Hawaiian Islands, but by contrast represent 54 percent of

fish biomass in the waters of the Monument. The NWHI are also characterized by a high degree of endemism in reef fish species, particularly at the northern end of the chain, with endemics comprising more than 50 percent of the population in terms of numerical abundance.

The majority of the Monument consists of deep pelagic waters that surround the island platforms. At least 15 banks lie at depths between 100 and 1,300 ft (30 and 400 m) within the Monument, providing important habitat for bottomfish and lobster species as well as deepwater precious coral beds, including ancient gold corals whose growth rate is now estimated to be only a few centimeters every hundred years and whose ages may exceed 2,500 years. At depths below 1,640 ft (500 m), a diverse community of octocorals and sponges flourish. Even deeper yet, the abyssal depths of the Monument harbor low densities of organisms, and yet the total biomass of the abyssal community is quite large because of the large area of this habitat type within the Monument. Occupying this habitat are unique and poorly documented fishes and invertebrates, many with remarkable adaptations to this extreme environment.

#### Protected Species/Marine Mammals

The NWHI provide important habitat for many protected species such as the Hawaiian monk seal, five species of sea turtles and an array of cetaceans and other marine mammals. Hawaiian monk seals utilize most of the Monument, including the atolls, islands, and waters of the Monument, with varying population (numbers and age structure) and some exchange between the NWHI and the main Hawaiian Islands.

Hawaiian monk seals (*Neomonachus schauinslandi*) are wide-ranging, air-breathing aquatic carnivores that spend a majority of their time in the ocean, although they also to rely on terrestrial habitat. Monk seals utilize aquatic habitat for foraging, socializing, mating, resting, and traveling. Adept at propulsion in the water, individual monk seals may travel hundreds of miles in a few days (Littnan et al., 2006) and dive to more than 1,600 ft (500 m) (Parrish et al., 2002).

The five species of sea turtles that occur in the NWHI are loggerhead (*Caretta carretta*), green (*Chelonia mydas*), olive ridley (*Lepidochelys olivacea*), leatherback (*Dermochelys coriacea*), and hawksbill (*Eretmochelys imbricata*), all of which are protected by the Endangered Species Act (ESA). While the sandy islets of FFS provide nesting sites for 90 percent of the threatened green turtle population breeding in the Hawaiian Archipelago, many more islets and atolls provide important nesting habitat for all five species of sea turtles.

The waters of the Monument are also home to 20 cetacean species, six of them federally recognized as endangered under the ESA and recognized as depleted under the Marine Mammal Protection Act (MMPA). The great whales occur throughout the Pacific. Five baleen whales— blue whale (*Balaenoptera musculus*), fin whale (*Balaenoptera physalus*), humpback whale (*Megaptera novaeangliae*)<sup>2</sup>, sei whale (*Balaenoptera borealis*), and north Pacific right whale (*Eubalaena japonica*) —and one toothed whale, the sperm whale (*Physeter macrocephalus*), are

<sup>&</sup>lt;sup>2</sup> NOAA Fisheries proposes to revise the ESA listing for the humpback whale to identify 14 Distinct Population Segments (DPS), list 2 as threatened and 2 as endangered, and identify 10 others as not warranted for listing.

listed under the ESA. Four of the five baleen whales are known to occur in this area of the north Pacific, but with the exception of the humpback whale, they are all considered relatively rare in Hawaiian waters. Spinner and bottlenose (*Tursiops truncates*) dolphins are year-round residents of the NWHI. They are not considered threatened or endangered under the ESA or depleted under the MMPA, though they are protected under the MMPA. While both species are widely distributed throughout the world in tropical and warm temperate waters, they are considered separate stocks from other populations due to their isolation in the Hawaiian archipelago (NOAA 2000). Both dolphin species occur in the marine waters from the island of Hawai'i to Kure Atoll.

#### 3.1.3 Socioeconomic Environment

#### Maritime Transportation/Traffic and Military Operations

Entering the Monument is prohibited without a permit, except for law enforcement when responding to emergencies, armed forces activities and exercises, and passage without interruptions. All U.S. vessels, passing through the Monument without interruption, are subject to various prohibitions and must provide notification prior to entering and after leaving the Monument. In addition, in 2003 the Monument was designated as a Particularly Sensitive Sea Area (PSSA), and protective measures consisting of (1) expanding and consolidating the six existing Areas to be Avoided (ATBA) in the Monument into four larger areas and enlarging the class of vessels to which they apply; and (2) establishing a ship reporting system for vessels transiting the Monument, which is mandatory for ships 300 gross tons or greater that are entering or departing a U.S. port or place and recommended for other ships, were adopted. With the exception of a few small boats at Midway Atoll and Tern Island, no vessels have home ports in the NWHI. For this reason, almost all marine traffic in the waters surrounding the NWHI is made up of Department of Defense vessels conducting training and testing activities, transiting vessels, USCG ships, and separately permitted vessels.

The USCG may enforce all applicable federal laws within the boundaries of the Monument. The USCG has the authority to enforce Monument regulations and restrictions concerning ship traffic pursuant to 14 U.S.C. §§ 2 and 89. Prohibitions in the Monument regulations do not apply to activities necessary to respond to emergencies threatening life, property, or the environment, or to activities necessary for law enforcement purposes (50 C.F.R. § 404.8).

#### Other Human Uses

The area the Monument encompasses has a long history of human use. Native Hawaiians explored these waters, established settlements, and conducted religious ceremonies for hundreds of years prior to the arrival of the first Europeans. Most extractive uses in the ocean, including whaling, and a variety of fishing ventures, ended by the early 1900s. The Navy conducts training and testing within the Hawaii Operating Area, which includes a portion of the Monument. In addition, the Department of Defense conducts missile defense testing, including missile intercepts, in and around the Monument. The earliest intensive scientific expedition in the Northwestern Hawaiian Islands was the Rothschild Expedition in 1891. Research continues to be one of the primary activities occurring within the Monument. Management activities conducted by the State of Hawaii, USFWS, and NOAA have been ongoing for decades. Human activities

and use of the Monument resources are carefully managed, considering historical uses and new threats through permitting, enforcement, and managing specific human uses, including Native Hawaiian cultural practices and visitors at Midway Atoll.

#### Research and Education

Compared to the past, there is little human activity in the Monument today. With the departure of the military and the phasing out of all commercial fishing by 2011, the main marine-related activities are research, wildlife management, and transiting ships. Per Presidential Proclamation 8031, access to the Monument may occur under six types of permitted activities: 1) research, 2) education, 3) conservation, 4) Native Hawaiian practices, 5) special ocean uses, and 6) recreational activities. On average 27 permits are issued each year for access to the Monument. Of those, 45 percent of total permits issued are research based and typically 4 percent are education based. The majority of education and outreach efforts occur within the MHI's in an effort to "bring the place to the people" as a way to continue to provide educational opportunities while minimizing human impact on Monument resources. In addition, access by the armed forces, for emergency response, enforcement, and passage without interruption are allowed without permit by regulation. Separately permitted research and education activities that further the research, education and conservation and management of the Monument occur on an annual basis.

#### Solid Waste

All hazardous material and hazardous waste management activities within the marine areas of the Monument are on marine vessels. The controlled environment onboard these vessels allows for proper containment of chemical substances. In a shipboard environment there are numerous engineering and management controls that prevent hazardous chemicals or materials from contaminating crew, passengers, and the environment. Pursuant to the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6921-6939f, any hazardous waste generated aboard a marine vessel, such as mercury containing light bulbs, waste paint, dry cleaning and photoprocessing operations, batteries, or solvents, is required to be offloaded and properly disposed of in land-based treatment or disposal facilities. Monument regulations and permit conditions provide additional safeguards on hazardous material and waste management including requirement for vessel monitoring systems (VMS) and reporting all release incidents.

#### 3.1.4 Maritime Heritage & Cultural Environment

#### Native Hawaiian Cultural Significance

The ocean serves as a central source of physical and spiritual sustenance for Native Hawaiians on a daily basis. Poetically referred to as Ke kai pōpolohua mea a Kāne (the deep dark ocean of Kāne), the ocean was divided into numerous smaller divisions and categories, from the nearshore to the deeper pelagic waters (Malo 1951). Likewise, channels between islands were also given names and served as connections between islands, as well as a reminder of their larger oceanic history and identity.

Today, Native Hawaiians continue to maintain their strong cultural ties to the land and sea. This concept of interconnectedness transcends geography. Native Hawaiians understand the importance of managing the islands and waters as one, as they are inextricably connected to one another (Beckwith 1951; Lili'uokalani 1978). Despite the fact that the NWHI were not used and experienced on a daily basis by most Hawaiians, they have always been seen as an integral part of the Hawaiian Archipelago and have been honored as a deeply spiritual location, as evidenced by the many wahi kūpuna, or sacred sites, on Nihoa and Mokumanamana.

#### Maritime Heritage Significance

In addition to the rich Native Hawaiian cultural setting, maritime activities following Western contact with the Hawaiian Islands have left behind the historical and archaeological traces of a unique past. Currently, there are over 60 known ship losses and/or confirmed sites among the NWHI, the earliest loss dating back to 1818. This, combined with 67 known aircraft crashes, gives a total of over 120 potential maritime heritage resource sites. Many of these resources reflect the distinct phases of historical activities in the remote atolls (Van Tilburg 2002).

As American and British whalers first made passage from Hawai'i to the seas near Japan in 1820, they encountered the low and uncharted atolls of the NWHI. At times the treacherous nature of navigation in the region gave rise the Western names of the islands and atolls as we know them today. Pearl and Hermes Atoll is named for the twin wrecks of the British whalers Pearl and Hermes lost in 1822. Laysan was reportedly discovered by the American whale ship Lyra prior to 1828. The history of American whaling is a significant part of our national maritime heritage and is a topic that encompasses historic voyages and seafaring traditions set on a global stage as these voyages had political, economic and cultural impacts. As a nation we were intimately involved in the whaling industry in important and complex ways. There are 10 known whaling shipwrecks in the NWHI. Three of these have been located (American whaler Parker and British whalers Pearl and Hermes) and their archaeological assessment is underway. Whaling vessel wreck sites from the early 19th century are quite rare, and the study and preservation of heritage resources is an important concern. The NWHI provide a unique glimpse into our maritime past.

Despite being slowly integrated into navigational charts, the NWHI remained an area of low and inconspicuous reefs and atolls for many years, frequented by shipwrecks and castaways. Russian

and French ships of discovery transited the NWHI, and sometimes found themselves upon the sharp coral reefs. Nineteenth century Japanese junks of the Tokugawa Shogunate period, drifting away from their home islands and into the Pacific, were reportedly washed onto the sands of the atolls. Hawaiian schooners and local fishing sampans voyaged into the archipelago, many not to return. Marine salvage expeditions based out of the main Hawaiian Islands profited from the area, although existing records of their cruising activities are scarce. These types of sites have the potential to yield information about early historic period voyages in the Pacific and about the seafaring traditions of many cultures.

# 4 Environmental Consequences

This section evaluates the environmental consequences of the alternatives as described in Chapter 2 (Description of Proposed Action and Alternatives). The environmental effects of these alternatives are evaluated within the context of the physical, biological, socioeconomic and historic and cultural setting. Information about the physical, biological, socioeconomic and historic and cultural setting can be found in Chapter 3 (Affected Environment).

#### **Characterizing Effects**

NEPA requires consideration of the effects of major federal actions on the quality of the human environment (42 U.S.C. § 4332(c)). Effects are characterized as negligible, less than significant, or significant, and are also characterized by type (adverse or beneficial), context, intensity and duration (short- or long-term). Effects can be further characterized by whether they affect resources directly or indirectly. The following definitions and characterizations were used for this analysis:

- <u>Negligible effects</u> effects for which virtually no effect to a resource can be detected (whether beneficial or adverse), essentially "neutral" or hardly noticeable effects.
- <u>Less than significant effects</u> effects that do not rise to the level of significance as defined below, or these can be thought of as "minor" effects.
- <u>Significant effects</u> effects resulting in an alteration in the state of a physical, biological, historic/cultural or socioeconomic resource. Long-term or permanent effects or effects with a high intensity or frequency of alteration to a resource, whether beneficial or adverse, would be considered significant. The significance threshold is evaluated on a case-by-case basis, taking into consideration the context and intensity of each action.
- <u>Direct effects</u> effects that are caused by the action and occur at the same time and place.
- <u>Indirect effects</u> effects that are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.
- <u>Minimization</u> actions that limit the degree or magnitude of the action and its implementation.
- <u>Mitigation</u> actions that are taken or avoided in order to either minimize or avoid impact by limiting the magnitude of affect or rectify or reduce impact over time by either repairing the affected environment or providing substitute resources.

Certain activities may be modified as a result of interagency consultation with NMFS pursuant to the EFH and ESA, in order to minimize impact on protected species. Specific mitigation and minimization measures are included as either part of this document or concurrent consultations, such as under the ESA or Essential Fish Habitat under the MSA. All necessary consultations with NMFS will be completed and incorporated by reference herein prior to final publication of this EA.

Action Alternatives #1 and #2 are both summarily described below. Under Action Alternative #1 (preferred alternative), the contract vessel and dive team would work in collaboration with NOAA PMNM and NDBC buoy technician to would establish a plan to conduct retrieval operations in a manner to ensure maximum protection to marine resources impacted by the grounded buoy. Under Action Alternative #2, the contractor vessel and dive team would secure tow lines to the buoy and pull if free using the M/V Lady Alice. The general plan to approach, assess and recover the buoy was described in Section 2.0 above. Following the initial assessment at the site, all methods utilized would be first incorporated into the final operational plan established in the field. To the extent practicable, that the contractor would provide its dive team with both video and audio capabilities while conducting in the water operations. Real-time video and audio communications are the preferred method for use during the initial assessment dive. These capabilities would allow for the NOAA staff aboard the vessel to see, first hand, the conditions surrounding the buoy and its associated mooring chain and/or line. However, if realtime communications are not possible, the dive team conducting retrieval efforts would conduct a visual pre-assessment to document and carry out a post-assessment with the NOAA PMNM representative. Prior to the commencement of retrieval operations, the recovery team would consult with the NOAA PMNM representative to ensure operations are carried out in a manner to provide maximum protection and safeguards to the surrounding marine environment. Originals or copies of all videos and photos will be provided to PMNM staff for evidence to any follow up actions that may be required.

The no action alternative would result in the the buoy remaining aground at Neva Shoal. Under this alternative, there is a possibility that the buoy could become adrift in the future and potentially causing future damage to other resources. There is also the possibility that the buoy remain aground but continue to cause damage to marine resources either attached to or near the buoy and its mooring line. Under this alternative, adverse impacts to all resources, physical, biological, socioeconomic and maritime heritage resources would occur due to the persistence and presence of the buoy in the marine environment. The mooring line is over 9,000 feet in length and the buoy itself is 10 ft in diameter, thus able to cause significant damage to any resource it comes into contact with. Threats to resources such as entanglement and tearing or otherwise damaging resources upon impact remain possibilities until the buoy is removed.

#### 4.1.1 Physical & Biological Environment

Activities associated with the recovery and transport of the buoy from PMNM to Honolulu, are expected to have less than significant adverse impacts to the marine environment. Furthermore, any impacts would be minimized by the adherence to PMNM BMPs and other minimization and mitigation actions resulting from other associated consultations, such as ESA. The following analysis describes potential impacts and mitigation measures necessary to maximize protection of the physical and biological environment during retrieval and transport.

During retrieval efforts, which are proposed to occur in April 2016, a time of year in which weather conditions have a higher potential to be unfavorable, strong currents, strong wave surge, high winds and swells would heighten the complexity of recovery efforts. However, once at the site, the dive team, in consultations with NOAA representatives would make every effort to

ensure that activities are carried in a manner that is safe for both the recovery team and the environment. For example, should the wave action be high in the immediate vicinity of the buoy, plans would be altered for safety purposes. Altered plans may include no action until the weather conditions are favorable. The two proposed retrieval methods are (1) disentangle mooring lines prior to securing the buoy aboard or behind the tender vessel (proposed under Alternative 1); or (2) securing the buoy to the vessel via tow lines and pulling the buoy free prior to securing aboard or behind the tender vessel (proposed under Alternative 2).

Under both proposed action alternatives (Alternative #1 and #2), upwelling and possible damage to coral reefs may occur while disentangling the chain and mooring line from the seafloor. Upwelling is expected to result in less than significant adverse impacts under Alternative 1 because of the minimization efforts employed to reduce further damage to corals. Specifically, these efforts would include detaching and disentangling as much of the buoy's mooring line and/or chain as possible prior to any movement of the buoy itself. Under Alternative 1, should upwelling occur as a result of movement of the buoy and associated lines, it would be temporary in time and space and would settle quickly (within hours of activities ceasing in the area). Under Alternative 2, upwelling may be significant, depending on the amount of line entangled on the bottom substrate and how much substrate is removed or moved during the retrieval process. The severity of impacts from the proposed retrieval method would be based on the circumstances under which the buoy's mooring line are attached to the bottom substrate, the location of the buoy, and weather conditions. If it is determined that the proposed retrieval method under Alternative #2 is necessary, the contractor will, at a minimum cut the buoy's mooring line at the base on the buoy itself so as not to destroy the bottom substrate that remains attached to the mooring line. If the mooring line is left in the marine environment, it would likely settle to the seafloor and not cause additional damage.

Debris may break loose and become free floating when the buoy and/or the associated mooring line is moved. The recovery team would conduct a visual check on the waters surface and make every effort to ensure that all visually identified floating debris from the grounded buoy is recovered and transported out of PMNM for disposal.

When conducting SCUBA, Surface Supplied Diving (SSD) or snorkel activities within PMNM, all participants must abide by Monument BMPs (described in Section 2 above), which were established to eliminate the potential spread of invasive species as well as minimize impact to the marine environment and marine species. M/V *Lady Alice* is not equipped with a double lock recompression chamber for emergency purposes therefore, for the safety of the diver team, dive operations would not operate deeper than 60 ft. Where practicable, divers would be equipped with through-water voice communications. The contractor would provide for two possible dive platforms (1) SCUBA and (2) SSD. Dive activities would occur from a small, unanchored boat and be closely monitored, at all times, by topside support. Should SSD occur, topside support would ensure that the umbilicals have the appropriate slack during operations to ensure diver safety and minimize damage to the seafloor. Furthermore, all activities will be in consultation with and closely monitored by NOAA PMNM and NDBC representatives. The small boat used as support during retrieval operations may require a three-point mooring. If a three-point mooring is required, it would be secured in an area of sandy bottom substrate. The dive team

would conduct an assessment dive to determine the appropriate retrieval plan. Once retrieval efforts have commenced, as an initial course of action, the dive team would tether a line, marked with floatation buoys to maintain its buoyancy at the surface, from the buoy to the small boat to ensure it is secured to the small boat at all times during retrieval operations. To minimize disturbance to coral reef and other marine resources, during retrieval, the dive team would make every effort to remove, disentangle, and/or detach mooring lines from surrounding coral reef. In addition, lines that are successfully detached from either marine resources (such as coral reef areas) or the buoy would be brought to the surface using a floatation buoy and hauled aboard the small boat in preparation for transport to Honolulu. Retrieval activities described above would, to the extent practicable, minimize impacts to the surrounding marine environment and therefore, retrieval operations are expected to result in less than significant, short-term, localized adverse effects.

The M/V *Lady Alice* and associated small boats are not permitted discharge gray water within the Special Preservation Area (SPA) of Lisianski (as demarkated in Figure 1 as the "reserve preservation area"), which includes Neva Shoal. Therefore, the tender vessel would have a holding capacity large enough to secure all grey water waste aboard the vessel until outside the SPA of Lisianski. Similarly, black water discharge (untreated sewage water) is not allowed anywhere within PMNM. Should M/V *Lady Alice* or its associated small boart require minor maintenance while at Neva Shoal, where possible, bio-based lubricants and fluids (and, in some cases bio-based fuels) would be used to further reduce the threat to habitat resources in the unlikely event of an unintentional spill. The M/V *Lady Alice's* vessel captain and crew are highly trained and would use best management practices and procedures to avoid direct impacts to habitat resources. In addition, personnel operating M/V *Lady Alice* and its associated tender vessel would have an appropriate tonnage USCG license and experience appropriate for the vessel size. In general, vessel operators will practice heightened awareness to be careful not to impact habitat resources when conducting activities.

Similarly, transport of the buoy from Neva Shoal to Honolulu, would be conducted in a manner to ensure, to the extent practicable, that the buoy is transported in one piece and with minimal damage. Two transport methods are proposed herein, (1) transport aboard the M/V *Lady Alice*, or (2) tow behind the M/V *Lady Alice*. The recovery team, in consultation with the NOAA representatives aboard the M/V *Lady Alice*, will determine the most appropriate method of transport and, if possible, the buoy will be lifted onto the deck of M/V *Lady Alice* for transport to Honolulu. Procedures to lift the buoy aboard the M/V *Lady Alice* would be established by the captain once the situation has been assessed in the field. In general, the captain and crew would utilize the tender vessel's winch to pull the buoy aboard the vessel. A cradle would be constructed using rope and lines to surround the buoy and lift it into the vessel, when hauling aboard.

If the circumstances do not allow for the buoy to be lifted onto the M/V *Lady Alice* for transport, the buoy will be towed behind the vessel while transported out of PMNM and to Honolulu. Should the buoy require a tow for transport, watch shifts would be established to ensure the tow line is taut and free from obstruction at all times during the day and night (24 hours/day) during transit. In the unlikely event the tow line gets entangled with a marine species, the on-watch

observer would be able to immediately identify the situation and take action to slow or stop the vessel and disentangle the species. When the buoy and associated line are recovered and in Honolulu, NOAA PMNM's invasive species biologist will assess all recovered equipment for the presence of invasive species so as to determine if monitoring for invasive species would be necessary in the future.

Recovery procedures may adversely affect the biological environment, but every effort would be made to avoid or minimize any damage. An impacts assessment is necessary to determine the extent of the damage that has already occurred. During assessment and recovery efforts, a dive team would conduct an initial dive to assess the situation and determine the appropriate method of retrieval, based on the two proposed retrieval methods described in Section 2 above. The retrieval method selected would take into consideration measures that would minimize impacts to the marine environment (including the seafloor and surrounding coral reef) while ensuring the safety of the recovery team. Weather, wave action, current direction and strength, and geographic location (substrate type and depth) would be some of the considerations weighed when selecting the appropriate retrieval method in the field. If the buoy or associated line are entangled with coral reef and/or other marine resources, the dive team would, to the extent practicable, work to disentangle the lines prior to removal of materials to limit further damage to natural and biological resources, including protected species. If necessary, the dive team would cut (either crimp or solder) line and/or chain necessary to minimize impact to natural and biological resources. To minimize the chance of interaction with protected species, topside support aboard all operating vessels would constantly monitor for the presence of protected species. Should a protected species be present in the work area, work would not commence until the species is no longer present. Should an ESA-listed species enter the work area, work would only proceed consistent with any mitigations identified during the ESA-consultation for this proposed activity.

#### 4.1.2 Socioeconomic Environment

No effect on the socioeconomic environment is anticipated, unless no action is taken and the buoy causes further damage to marine resources. PMNM is a fully protected marine environment and no commercial activities beyond uninterrupted passage can occur unless specifically permitted by PMNM co-managing agencies. No permits have been issued for either research or commercial activity at Neva Shoal and therefore, assessment and removal activities will not interfere with any known and permitted activities in PMNM. Additional effects on socioeconomic resources are expected less than significant and beneficial. The removal of the grounded buoy would ensure there is no further damage to the marine environment at Neva Shoal. Post assessment and monitoring may be necessary and would become an opportunity to create additional awareness and appreciation of the Monument resources. Should no action be taken, additional resources would be necessary to both remove and possibly repair damage to the marine environment as a result of the buoy's movement. This activity is not likely to impact vessel transiting the area as no vessel transit occurs at or near the buoy's location.

#### 4.1.3 Maritime Heritage and Cultural Environment

No effect on maritime heritage resources, cultural resources or historical properties is anticipated, unless no action is taken and the buoy causes further damage to marine resources. No known historic or maritime heritage resources exist within the area impacted by the grounded buoy. As such, impacts from anchoring and unintentional striking or groundings are unlikely, but could occur were unidentified resources encountered during the activity. The vessel operations associated with assessment and recovery operations will be isolated and limited in space and time. Vessel operators would have an appropriate tonnage USCG license and experience for the vessel size. In general, vessel operators will practice heightened awareness to avoid impacts to habitat and other resources when conducting activities. In addition, any necessary vessel maintenance activities are highly unlikely to have detectable effect on historical or cultural resources uses because they would be low intensity, episodic and typically conducted pierside or on-land. Should no action be taken, additional resources would be necessary to both remove and possibly repair damage to the marine environment as a result of the buoy's movement.

In water assessment and recovery activities are also not likely to adversely affect maritime heritage resources, cultural resources and historic properties. All activities are designed to retrieve and transport the buoy from PMNM to Honolulu to both remove the threat of further damage to resources and gain necessary information to enable ongoing marine resource protection. While intentional or accidental improper diving techniques and overuse of specific locations can result in damage to these resources, divers would following the PMNM Best Management Practice for Maritime Heritage Resources (BMP #017). In-water activities are limited in scope, time, and space. Activities to assess and recover the buoy will be limited to the grounding site and are not expected to take longer than two days to assess the situation, remove the buoy and transport it back to Honolulu. Should a new maritime heritage site be identified, GPS coordinates would be obtained and reported to the ONMS/PMNM Maritime Heritage Coordinator, per the PMNM BMP #017. In line with the analysis above, the proposed action activities are expected to result in negligible effects to maritime heritage and the cultural environment.

#### 4.2 Cumulative Impacts

The cumulative effect of the proposed action preferred alternative is the incremental environmental effect that the proposed action has when added to other past, present, and foreseeable future actions in the affected environment. Cumulative effects are critical to explore because it is often the combined effect of many actions in one area or region that causes the most significant adverse impacts. To identify potential cumulative effect concerns, ONMS considered the adverse effects of the operations identified under the proposed alternative in conjunction with the adverse effects associated with other past, present, and foreseeable future actions in the affected environment. The operations that were identified as having some potential to contribute to cumulative effects include those that could result in seafloor disturbance and impacts to living marine resources. Effects are described below.

#### 4.2.1 Cumulative Effects on Physical & Biological Environment

Assessment, recovery and transport operations that could result in disturbance to the physical and biological environment include vessel operations and in-water activities, including SCUBA or SSD operations.

Seafloor disturbance and impacts to living marine resources would be most impacted during recovery and removal operations while disentangling the buoy and associated lines from any coral reef areas and the seafloor in general. These activities, however, are likely to result in minor, short-term disturbance to the seafloor due to the fact that the recovery operations are limited in space and time and will not take longer than necessary to safely remove the buoy and associated lines from the marine environment. Anchoring is only allowed on sandy substrate only and when permitted, therefore is rare in occurrence. On average 22 vessel transits occur each year within PMNM and of those accesses with the majority of those vessels never dropping anchor within the Monument. Because the Monument is a protected area and an access permit is required for most activities, limited external impacts are expected to result at the grounding site. Two research expeditions to conduct scientific dive research propose to conduct activities at or around the grounding site in the Summer and Fall of 2016. While intentional or accidental improper dive techniques and overuse of specific locations can result in damage to these resources, sanctuary dive sites vary according to the different projects throughout each sanctuary preventing overuse of any specific location. In addition, both divers and snorkelers are highly trained and briefed on proper protocols and supervised during in-water activities to avoid improper actions that can cause harm to physical habitat. Thus, these operations are expected to result in negligible effects.

Throughout the Hawaiian island archipelago, vessel operation and transit activities are not expected to yield significant cumulative impacts. All activities in PMNM, with few exceptions, require a PMNM issued permit, resulting in minimal and controlled activities occurring within Monument boundaries. While vessel operations are less regulated outside of Monument boundaries throughout the MHIs, the proposed action's vessel operations outside of the Monument is limited to transit from the point at which the contractor exits the Monument at the southeast end of the Monument to Honolulu. Vessel operations under the proposed action would be speed-restricted, conducted by highly trained personnel, and waste water discharge is regulated. Due to the fact that these vessel operations and in-water activities are intended to provide a long-term benefit to the marine environment (ie, removal of grounded buoy) and the activities are highly regulated (via a PMNM permit), such operations are not expected to contribute to overall adverse cumulative effects on the physical and biological environment.

#### 4.2.2 Cumulative Effects on Socioeconomic Environment

No cumulative effect on the socioeconomic environment is anticipated. PMNM is a fully protected marine environment and no commercial activities, to other than uninterrupted transit can occur unless specifically permitted by PMNM co-managing agencies. No permits have been issued for either research or commercial activity at Neva Shoal and therefore, assessment and removal activities will not interfere with any known and permitted activities in PMNM. Additional effects on socioeconomic resources are expected to be positive and beneficial. The

removal of the grounded buoy would ensure there is no further damage to the marine environment at Neva Shoal. Post assessment and monitoring may be necessary and would become an opportunity to create additional awareness and appreciation of the Monument resources. As a result, the proposed action activity is not expected to result in any significant cumulative adverse effects on the socioeconomic environment.

#### 4.2.3 Cumulative Effects on Maritime Heritage and Cultural Environment

No known cultural, historic or maritime heritage resources are present in the area impacted by the grounded buoy, therefore, none of the proposed operations analyzed in this environmental assessment are expected to result in significant effects on the maritime heritage and cultural environment. All activities are designed to retrieve and transport the buoy from PMNM to Honolulu, Hawaii to both remove the threat of further damage to resources and gain necessary information to enable ongoing marine resource protection. While intentional or accidental improper diving techniques and overuse of specific locations can result in damage to these resources, divers for the proposed activity would follow the PMNM Best Management Practice for Maritime Heritage Resources (BMP #017). In-water activities would be limited in scope, time, and space. Activities to assess and recover the buoy will be limited to the grounding site and will not take longer than necessary to assess the situation, remove the buoy and transport it back to Honolulu, Hawaii. Thus, these operations are not expected to result in any significant cumulative adverse effects on maritime heritage and cultural environment resources.

#### 4.3 Conclusions

Both Action Alternative #1 (preferred alternative) and Action Alternative #2 employ a NOAA NDBC and a NOAA PMNM representative to provide subject matter expertise and guidance during the recovery operation. Both Action Alternatives will employ the use of both still and video imagery to the maximum extent possible to document both before and after resource conditions, and to aid in analyzing conditions and guiding recovery efforts. Both Action Alternatives will also use the same two potential Transport Methods for getting the buoy back to Honolulu. The primary difference between the two Action Alternatives is that #1 proposes remove as much of the buoy mooring line and chain as possible from the marine environment prior to initiating buoy recovery efforts, while #2 proposes to simply drag the buoy and associated mooring line and chain as possible can be recovered.

Action Alternative #1 (preferred alternative) will have significantly less overall negative impacts on the environment than Action Alternative #2. While activities under this alternative may take longer to complete, there will be less overall disturbance to the marine environment. The buoy mooring line and chain will, to the extent possible, be disentangled and lifted or floated off the bottom in a manner to minimize disturbance to the bottom and water column. Because the process will be slow and deliberate, there will ample opportunity to adapt to new developments and changing conditions. Divers will be actively monitoring the activities to ensure minimal disturbance; operations will cease if it appears continuing will have significant negative impact, Environmental Assessment and the divers will collaborate with the NOAA PMNM and NDBC representatives to analyze other potential options.

Action Alternative #2 will have significantly greater negative impact on the environemnt, and has some expected beneficial and some less than beneficial affects to the environment. Transport methods are identical to those proposed under Alternative #1. The proposed retrieval method under this alternative could result in significant impacts. The severity of impacts from the proposed retrieval method would be based on the circumstances under which the buoy's mooring line are attached to the bottom substrate, the location of the buoy, and weather conditions. This is not the preferred alternative and all other alternatives and methods to ensure the protection of marine resources would be employed before this method. However, if it is determined that the proposed retrieval method under Alternative #2 is necessary, the contractor will, at a minimum attempt to cut the buoy's mooring line at the base on the buoy itself so as not to cause damage to the bottom substrate that remains attached to the mooring line.

Both action alternatives ensure minimal impact to the marine environment during transport from PMNM to Honolulu because all permit conditions and Monument prescribed best management practices would be adhered to while in the Monument as well as speed restrictions during transit through the MHI.

The no action alternative would not be beneficial and could lead to significant adverse impacts to the marine environment, should the buoy remain aground and continue to cause damage to the surrounding environment or become adrift and go aground at another location, thus causing damage to other areas within PMNM.

#### **5** CONSULTATIONS

#### **Essential Fish Habitat Assessment**

The site for the proposed action is comprised of monk seal critical habitat and essential fish habitat as defined under the Magnuson Stevens Act. Vessel operations, SCUBA and snorkel, deployment of an ROV or other equipment on the seafloor may be necessary to complete a response and recovery effort to remove the grounded data buoy at Neva Shoal. Potential impacts may include additional risk of grounding of a vessel or other equipment necessary for recovery operations, disturbance to the seafloor due to in-water activities (e.g., SCUBA and snorkel activities), and unintentional contact with coral reefs during operations. Aforementioned impacts will be reduced or eliminated due to the general and special conditions imposed on the proposed action. In accordance with the PMNM Co-Trustee permit, under which the proposed action would be authorized, ONMS staff and contractors are required follow a set of best management practices (BMP) to minimize any potential damage to bottom habitat or the water column to the greatest extent possible. In PMNM, per Proclamation 8031, anchoring on coral is prohibited. In addition, managers limit activities in accordance with the following BMPs: instruments are deployed and lowered onto sandy substrate whenever possible; deployment of instruments occurs slowly and under constant supervision to minimize risk and mitigate impacts if a collision

or entanglement occurs; and while vehicles or personnel are deployed, spotters monitor the activities at all times. Lastly, ONMS typically does not allow night operations.

To the extent practicable, removal of recovered debris and grounded equipment will be done by hand. If the in-water debris is caught on a structure, it is cut loose with knives, loaded into inflatable boats and transported to a secure site for storage. Mechanical wrenches are involved when the debris is too heavy to be loaded by hand. Secure storage sites can be land-based areas that will not allow the reintroduction of the debris to the sea or ship based containers that are secured to the deck.

On [date], ONMS initiated informal consultation, under the Magnuson-Stevens Fishery Conservation and Management Act, on impacts to Essential Fish Habitat (EFH) and NMFS concurred with the conclusion that the action may affect but is not likely to adversely affect EFH due to required and recommended mitigation measures in place and those offered by NOAA Fisheries to ensure protection of the marine environment during activities, which minimize or altogether avoid impacts to EFH. Cumulative or synergistic impacts will be determined after the site of the grounding has been assessed prior to and after removal, and if necessary, the responsible party may held accountable for damages to EFH done by the buoy.

#### **Endangered Species Act**

Based on the formal section 7 consultation, NMFS has determined that the Proposed Action would not adversely affect Hawaiian Monk Seals (*Monachus schauinslandi*), green sea turtles (*Chelonia mydas*), hawksbill sea turtles (*Eretmochelys imbricata*), North Pacific distinct population segment of loggerhead sea turtles (*Caretta caretta*), olive ridley sea turtles (*Lepidochelys olivacea*), leatherback sea turtles (*Dermochelys coriacea*), Main Hawaiian Islands false killer whale distinct population segment (*Pseudorca crassidens*), humpback whales (*Megaptera novaeangliae*)<sup>3</sup>, sperm whales (*Physeter macrocephalus*), fin whales (*Balaenoptera physalus*), blue whales (*Balaenoptera musculus*), sei whales (*Balaenoptera borealis*), and north pacific right whales (*Eubalaena japonica*). The proposed action will occur in federal waters in the Neva Shoal area at depths of less than 60 feet. All precautions would be taken not to disturb Hawaiian monk seals, green sea turtles, and all cetaceans previously listed. All PMNM prescribed BMPs, previously listed in Section 2 above would be followed and applicable to the contract vessel during operations within PMNM.

The proposed action would take place within monk seal critical habitat. The impacts to critical habitat from the grounding of the buoy has yet to be determined, but NMFS has determined that the Proposed Action of removing the buoy may affect but is not likely to adversely affect monk seal critical habitat. Any further impacts to monk seal critical habitat will be minimized or avoided through adherence to previously mentioned BMPs and through adherence to NOAA Fisheries provided recommendations.

#### National Historic Preservation Act (NHPA)

<sup>&</sup>lt;sup>3</sup> NOAA Fisheries proposes to revise the ESA listing for the humpback whale to identify 14 Distinct Population Segments (DPS), list 2 as threatened and 2 as endangered, and identify 10 others as not warranted for listing.

Under the provisions of Section 106 of the National Historic Preservation Act of 1966, the Secretary of the Interior has compiled a national register of sites and buildings of significant importance to America's history. Sites in the NWHI include cultural sites on Nihoa and Mokumanamana, and historic sites on Midway Atoll. The Proposed Action would not cause any negative impacts to historic properties, including registered sites or buildings on shore or any such submerged site, such as shipwrecks because activities are ocean-based and not near known historic properties.

## **6** LIST OF PREPARERS

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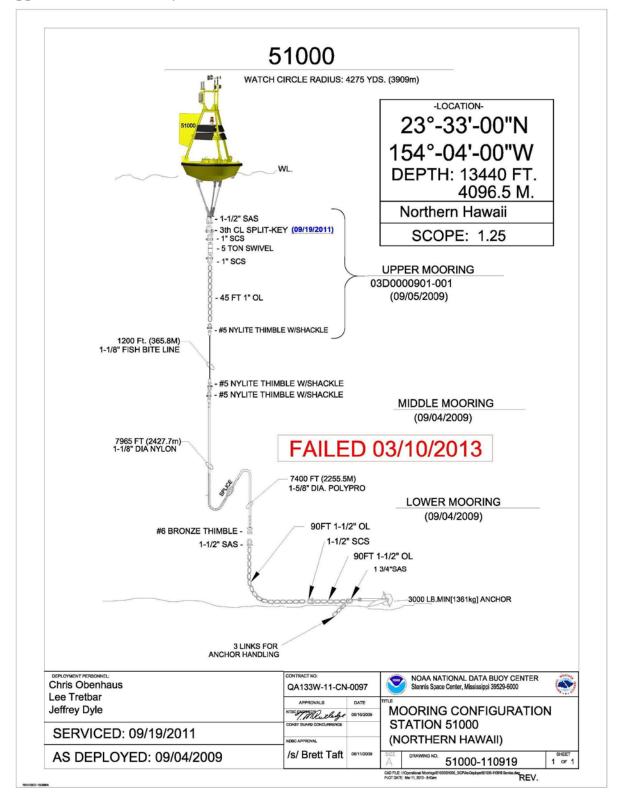
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# 8 APPENDIX

- 1: Specifications for NOAA NDBC Buoy 3DV21
- 2: PMNM-2016-001: 2016 Co-Trustees Conservation & Management Permit

#### Appendix 1: NOAA Buoy 3DV21





CONSERVATION AND MANAGEMENT PERMIT

#### **Permittee Name**

Papahānaumokuākea Marine National Monument Effective Date: January 1, 2016 Co-Trustee Representatives:

Matthew Brown Superintendant for Policy, Partners, and Support Pacific Marine National Monuments Department of the Interior U.S. Fish and Wildlife Service

Maria Carnevale State Co-Manager Papahānaumokuākea Marine National Monument State of Hawaii Department of Land and Natural **Resources** 

Athline Clark Superintendent Papahānaumokuākea Marine National Monument National Oceanic and Atmospheric Administration

ADDRESS:NOAA/ Daniel K. Inouye Regional Center. NOS/ONMS/Papahānaumokuākea Marine National Monument 1845 Wasp Blvd, Building 176 Honolulu, HI 96818

Permit Number: PMNM-2016-001 Expiration Date: December 31, 2016

DEC 2 1 2015

Project Title: Co-Trustee Conservation and Management Activities in Papahānaumokuākea Marine National Monument

NOAA/Daniel K. Inouye Regional Center NOS/ONMS/ Papahänaumokuäkea Marine National Monument 1845 Wasp Blvd. Building 176 Honolulu, Hawai'i 96818

This permit is issued for activities in accordance with Proclamation 8031 ("Proclamation") establishing Papahānaumokuākea Marine National Monument ("Monument") under the Antiquities Act of 1906, 16 USC §§ 431-433 ("Antiquities Act") and implementing regulations (50 CFR Part 404). All activities must be conducted in accordance with the Proclamation and the regulations (attached). No activity prohibited by the Proclamation or 50 CFR Part 404 is allowed except as specified below. Chapter 13-60.5, Hawaii Administrative Rules remains in effect for activities in State waters.

Subject to the terms and conditions of this permit, the National Oceanic and Atmospheric Administration (NOAA), the U.S. Fish and Wildlife Service (FWS), and the State of Hawaii, (collectively, the Co-Trustees) hereby authorize the permittee listed above to conduct conservation and management activities within the Monument. All activities are to be conducted in accordance with this permit. The permit application is incorporated into this permit and made a part hereof; provided, however, that if there are any conflicts between the permit application and the terms and conditions of this permit, the terms and conditions of this permit shall be controlling.

# **PERMITTED ACTIVITY DESCRIPTION:**

To safeguard the resources and ecological integrity of the Monument, early and ongoing coordination of interagency activities will occur between the action agency and interested Monument management partners as soon as details of activities are identified.

The following activities are authorized by this permit:

# ENTRANCE

 The permittees, their designated agency staff, contractors, and Midway Atoll National Wildlife Refuge residents necessary for permitted activities may enter Papahānaumokuākea Marine National Monument (see Attachment #1, Permitted Personnel List). All personnel must be identified and information provided to the Monument permit coordinators prior to each entry into the Monument. The permittees shall ensure that all personnel assigned to conduct conservation and management activities authorized under this permit are fully qualified to perform in the assigned role(s) and shall be limited to the scope of action set forth in this permit and all other applicable policies, protocols, permits, and regulations.

# **OPERATIONS**

- Operating field stations of the National Wildlife Refuge System (NWRS) and the State of Hawaii Kure Atoll State Wildlife Sanctuary, necessary for meeting mission and purposes of refuges and the Monument in support of on-site management and resource conservation including by not limited to:
  - a. Maintaining and repairing/replacing facilities and their components (e.g., carpentry, electrical, plumbing, welding, general construction);
  - b. Building and other facilities deconstruction and reconstruction;

- c. Maintaining airport and airstrips, including improvements such as runway lighting replacement, taxiway maintenance (including repaying, and painting/marking);
- d. Painting, including all preparation work such as scraping, washing, etc.; and
- e. Lead-based paint soil remediation, including removing sand/soil from around many or all affecting buildings and proper on-site containment of this material.
- 3. Supporting and re-supplying field camps and field stations, including but not limited to, delivery and removal of supplies, people, waste, and/or assets necessary for operations.
- 4. Operating vessels to provide access for conservation and management activities. Authorized vessel operations shall include, but are not limited to:
  - a. Operating small boats for vessel maintenance and proficiency;
  - b. Anchoring of the authorized vessels on sandy substrate only, and all anchors must be lowered into place:
  - c. Discharging gray water outside of all Special Preservation Areas and the Midway Atoll Special Management Area.
  - d. Discharging biodegradable solid waste associated with galley operations restricted to 3 nautical miles (ground to 1 inch in diameter) and 12 nautical miles (unground) outside of all Special Preservation Areas and the Midway Atoll Special Management Area.
- 5. Possessing fishing gear to conduct sustenance fishing for pelagic species within Midway Atoll Special Management Area (MASMA) in accordance with the Monument Management Board Policy on Sustenance Fishing (Attachment #2).
- 6. Operating aircraft and airfields, including necessary maintenance and use of airfields and runways at Midway Atoll and Tern Island, French Frigate Shoals.
- 7. Conducting on-site reviews and operational evaluations including, but not limited to:
  - a. On-site reviews by management and congressional personnel;
  - b. Agency site visits and meetings for management planning and programmatic assessments; and
  - c. On-site management and safety reviews to gauge implementation and effectiveness of Monument management and programs.
- 8. Conducting personnel safety, fitness, and health maintenance including, but not limited to:
  - a. Biking, swimming, and jogging at Tern Island, French Frigate Shoals, and Midway Atoll; and
  - b Conducting health and safety activities for all personnel, including but not limited to: site safely reviews, adverse weather and emergency response procedures, safety protocols, and continuation of operation plans.

# RESOURCE SURVEY AND MONITORING

- 9. Swimming, snorkeling, and closed or open circuit SCUBA diving within any Special Preservation Area of the Midway Atoll Special Management Area, necessary to support conservation and management activities covered under this permit.
- 10. Touching coral, living or dead, necessary to support conservation and management activities covered under this permit.
- 11. Attracting any living Monument resource, necessary to support conservation and management activities covered under this permit.
- 12. Surveying and monitoring target species and habitats to evaluate trends and status for management purposes. Activities in direct support of management, monitoring, and characterization may include:
  - Placing scientific equipment or drilling into submerged and emergent lands in order to install scientific equipment, devices, markers, oceanographic instrument arrays, remotely operated camera systems, and remote viewing camera systems on submerged or emergent lands, and performing necessary maintenance activities on such equipment;
  - b. Collecting climatological data and necessary scientific information from on-site equipment;
  - c. Photographing and filming as necessary to document Monument resources;
  - d. Non-lethal marking and tagging for monitoring purposes;
  - e. Visual, non-invasive marking and tagging for monitoring purposes; and
  - f. Physical surveying of and sampling from landfills, storage tanks, contamination sites, or other potentially hazardous materials associated with current and former occupation and use of the Northwestern Hawaiian Islands (NWHI).
  - g. Visual and acoustic line-transect surveys to estimate the abundance and distribution of cetaceans in the NWHI.
- 13. Removing, moving, taking, harvesting, possessing, injuring, disturbing; or attempting to remove, move, take, harvest, possess, injure, or disturb biological, chemical, or geological samples for analysis in support of activities under approved management plans, restoration or recovery plans, and for base line inventory and monitoring of population trends and habitat conservation and management.
- 14. Removing, moving, taking, harvesting, possessing, or attempting to remove, move, take, harvest, or possess a set number of any visually observable marine organism morphotype (except mammals) or terrestrial plant morphotype (including fungi), which cannot be visually identified or may represent a new geographic record or new species, with the set number based upon the per island/atoll abundance criteria below:

- a. One (1) specimen can be taken, removed, or possessed if in abundance assessment cannot be ascertained, or less than ten (10) such specimens are present, cumulative during the course of the collection event per island and atoll:
- b. Up to three (3) specimens can be taken, removed, or possessed if an abundance assessment of ten (10) or more such specimens is ascertained, cumulative during the course of the collection event per island or atoll; and
- c. For clonal organisms that cannot be visually identified or may represent a new geographic record or new species, take shall be limited to no more than half the clonal organism visually observed. Up to three (3) clonal specimens of similar morphology can be taken, removed, or possessed if an abundance assessment of ten (10) or more of such specimens is ascertained, cumulative during the course of the collection event per island or atoll.
- 15. Conducting habitat mapping for the production of accurate, high-resolution base maps with methods to include:
  - Data collecting to include optic, acoustic, and metal detector technologies, as well as land and dive operations, including the use of a remotely operated vehicle (ROV), for ground trothing; and
  - b. Global Positioning System (GPS) mapping and Light Detection and Ranging (LIDAR) work.

# NATURAL RESOURCE PROTECTION, RESTORATION, AND REMEDIATION

- 16. Conducting management actions necessary to understand and carry out protection, restoration, and remediation of species and habitats, such as carrying out existing species recovery and restoration plans. Activities may include:
  - Conducting wildlife disentanglement, health response (including treatment and necropsy), and translocation activities according to existing species recovery plans;
  - b. Conducting population augmentation or reestablishment activities such as capture, translocation, reintroduction, and outplanting;
  - c. Conducting invasive species controls by mechanical, chemical and manual methods as needed; and
  - d. Investigating and monitoring of contamination in abiotic or biotic resources.
- 17. Conducting activities to promote the recovery of the critically endangered Hawaiian monk seal at any or all breeding sites in the NWHI. Activities may include:
  - a. Disentangling monk seals from marine debris;
  - b. Conducting health response, including but not limited to cutting umbilical cords, lancing abscesses, administering antibiotics and necropsy;
  - c. Conducting Antihelminthic treatment ('deworming') by field staff, which may including monitoring to detect improvement in body condition of treated seals versus control seals. Antihelminthic medications may include various cestodicides

and nematocides (e.g. praziquantel, fenebendazole, ivermectin, emodepside) applied via various routes (e.g. oral, injectable, topical);

- d. Translocating Hawaiian monk seals, consisting of the following types:
  - i. *Intra-atoll:* These translocation will include moving seals from areas of high risk where threats are imminent to safer areas, and moving pups to promote maternal fostering when necessary. Field staff will perform these movements; greater resources (e.g. veterinarian care) will not typically be necessary.
  - ii. *Inter-atoll:* These translocations will include transport of weaned female pups from atolls/islands of low survival to those of higher survival.
  - iii.*MHI-NWHI*: These translocations will include transport of main Hawaiian Island (MHI) seals that are considered a threat to themselves or humans because they have demonstrated a pattern of interacting with humans.
  - iv. NWHI-captive care: Seals may be taken into temporary captivity for treatment at appropriate, federally permitted rehabilitation facilities in the MHI for release back in the NWHI (i.e. permitted for captive care of injured, ill or prematurely weaned seals) (see below).
  - v. Aggressive male seal translocation to areas with no pups or juveniles (see below).
- e. Reuniting nursing mothers and pups, when separated (includes instances of pup switches):
- f. Mitigating male aggression towards pups and juveniles (individual and multiple male-based aggression), including utilizing all federally permitted techniques (including, but not limited to, poles, rocks, slingshots, and air horns). Mitigation tools shall be applied as appropriate for the given context (i.e. the intensity, severity and frequency of aggression and the location, with regard to other species in the area such as birds). Mitigation may include temporarily separating males from juveniles by placing either in temporary shore-pens (see below). Mitigation also may include removal of the male(s) from the area by:
  - i. Translocation to a location where no pups or juveniles will be harmed;
  - ii. Placement in an appropriate, federally permitted facility that is agreeable and permitted to care for a male indefinitely; or
  - iii. Lethal removal: this type of removal will only be applied when the above two options are not feasible, possible or exhausted. The preferred technique for euthanasia will be via physical means (e.g. firearm, captive bolt, etc.), in order for the carcass to remain in PMNM and for culturally appropriate and environmentally proper disposal to occur. When necessary, chemical euthanasia and removal of the carcass from PMNM will be allowed;
- g. Conducting captive care of compromised seals to administer veterinary care and/or food supplementation. Captive care may include the capture and transport of seals to shore-pens (in the NWHI) or facilities in the MHI. NWHI seals under care in the MHI may be returned to the NWHI when a licensed veterinarian deems them rehabilitated and transport is feasible. The seals will then be released

to the NWHI site deemed most appropriate for their subsequent survival (determined on the basis of such factors as the intensity and severity of imminent threats to the seals and recent survival trends at each atoll/island);

- Monitoring shark activity at French Frigate Shoals. Monitoring may include camping on islets with shark incidents on nursing pups and recording shark activity and shark-seal interactions via hand-held or mounted cameras (cameras will be mounted on a pole 15' or less with no guy wires to be used only during the field season and attended daily by field staff);
- i. Placing temporary shore pens at select NWHI breeding sites to facilitate monk seal recovery activities described here within (e.g. translocations, captive care, or male aggression mitigation); and
- j. Establishing field staff residence at all monk seal breeding sites to perform the monk seal activities described here within.
- Removing marine debris, trash, and other materials (land and ocean-based) that pose threats to Monument resources, including but not limited to derelict fishing gear. Activities may include:
  - a. Disentangling wildlife from marine debris and other materials by authorized personnel;
  - b. Tracking debris via drifter buoys and Unmanned Aerial Vehicles:
  - c. Monitoring of sites that have been cleared of debris for recovery rates and effects of removal;
  - d. Locating and removing debris and hazardous materials. This may be through interagency agreements, such as the Department of Defense (DOD) Innovative Readiness Training (IRT), Formerly Used Defense Sites (FUDS), or the Base Realignment and Closure (BRAC) Programs. Efforts may include activities such as seafloor and island mapping, reconnaissance and removal of materials, and derelict vessel salvage and removal; and
  - e. Removal of sessile encrusting flora and fauna associated with marine debris.
- 19. Providing emergency response and damage assessment, mitigation, restoration, and monitoring post-response management. Activities may include:
  - a. Conducting damage assessment, mitigation, restoration, monitoring, and post-response management in coordination with appropriate federal and/or state resource agencies and, as appropriate, consistent with NOAA, FWS, and State of Hawaii Damage Assessment and Restoration regulations, policies, and procedures (e.g., oil spills, ship groundings, tsunami-generated marine debris, damage assessments, monitoring alien species, monitoring coral bleaching events, collection of bleached coral or alien species); and
  - b. Conducting activities in response to an unusual mortality event (including but not limited to threatened and endangered species, marine mammals, and migratory birds) mass stranding or other urgent species response.

#### CULTURAL AND HISTORICAL RESOURCE IDENTIFICATION AND PROTECTION

- 20. Removing, moving, taking, harvesting, possessing, injuring, disturbing; or attempting to remove, move, take, harvest, possess, injure, or disturb post-contact artifacts as needed, subject to National Historic Preservation Act (NHPA) consultation when applicable, for the purpose of identifying, documenting, interpreting, preserving, and protecting the Monument's cultural and historic resources.
- 21. Monitoring and surveying historic sites.
- 22. Conducting or allowing for the preservation and conservation of artifacts subject to successful NHPA Section 106 consultation and appropriate approvals from other Federal agencies (e.g., U.S. Navy), when applicable.
- 23. Non-commercial filming and photographic activities for the purposes of further documenting and capturing the history of the NWHI.
- 24. Locating historic artifacts using passive side scan sonar, metal-detector, or (land-based) ground penetrating radar.
- 25. Returning seized Monument resources to their natural environment in coordination with appropriate federal and/or state resource agencies, including the Office of Hawaiian Affairs (OHA), as appropriate.
- 26. Recording atmospheric, celestial, biological and other environmental observations for the purpose of developing and understanding natural trends, changes and cycles.
- 27. Conducting native Hawaiian cultural protocols and ceremonies including offering of culturally and biologically appropriate ho<sup>+</sup>okupu in accordance with Monument regulations and Best Management Practices.
- 28.Removing, moving, taking, harvesting, possessing, injuring, disturbing; or attempting to remove, move, take, harvest, possess, injure, or disturb non-living culturally significant natural materials acquired during Monument operations and activities for cultural ceremonies and practices.
- 29. Transferring culturally significant natural materials acquired during Monument operations and activities to Hawaiian cultural practitioners, in coordination with appropriate federal and/or state resource agencies, including OHA, and with the appropriate transfer documents and required permits.
- 30.Maintaining, preserving, and perpetuating Native Hawaiian cultural sites and practices per the NHPA, Native American Graves Protection and Repatriation Act, Archeological Resources Protection Act, American Indian Religious Freedom Act and applicable sections of the Hawaii State Constitution, Hawaii Revised Statutes and Hawaii Administrative Rules.

31.Conducting activities necessary for maintaining and preservation historic sites on Midway Atoll.

# OUTREACH AND EDUCATION

- 32.Gathering information and experiences from personnel within the Monument to develop agency web pages, Navigating Change projects, and other Monument educational outreach products.
- 33.Removing, moving, taking, harvesting, possessing, injuring, disturbing; or attempting to remove, move, take, harvest, possess, injure, or disturb non-living debris and biological samples and specimens such as albatross boluses and carcasses for educational and/or outreach projects.
- 34. Transferring educational and outreach materials (e.g., albatross boluses or other nonliving debris or biological samples) shall be according to one of the following categories, subject to all applicable permits and Monument Management Board (MMB) approved transfer documents:
  - a. *Internal transfers.* Transfers among the MMB agencies provided such educational and/or outreach material shall remain within the custody of the MMB.
  - b. *External transfers.* Transfers outside of the MMB agencies if authorized in writing, to government agencies and accredited educational institutions, for the purpose of cultivating, informing, or involving constituencies that support or enhance conservation of the natural, cultural, and historic resources of the Monument.
  - c. *Loan Transfers.* Loans of biological samples or specimens, which must be returned to the MMB with a specified time frame and are subject to conditions stipulated in writing, to government agencies and accredited educational institutions for the purpose of supporting educational or outreach projects that enhance conservation of the natural, cultural, and historic resources of the Monument.
- 35.Conducting news media and VIP site visits to enhance public knowledge and understanding of Monument resources.
- 36.Conducting environmental, cultural, and historical education programs throughout the Monument by designated agency staff and contractors.
- 37. The Monument Management Board (MMB) may monitor activities under the permit. Any member of the MMB or their designee may, for a period not to exceed 48 hours, verbally require the permittee to temporarily modify or temporarily cease activities identified in the permit if, in the opinion of the MMB member or their designee, such action is necessary to limit effects on Monument resources beyond the intended scope of the permit, to protect governmental equipment, or to ensure the safety of personnel. Such

action will be followed as soon as possible by MMB emergency consideration of the temporary permit modification or temporary permit cessation. If the MMB concurs with the temporary action taken by the MMB member or designee, the Co-Trustees may amend the permit with the necessary changes or withdraw it. A decision by the Co-Trustees to amend the permit or to allow the activity to continue unchanged will include the necessary findings that the activity and its effects satisfy Monument permit issuance criteria and do not risk the safety of governmental employees or damage to governmental equipment.

No further disturbance of the cultural or natural resources of the Monument is allowed.

# PERMITTED ACTIVITY LOCATION:

Other than entrance into the Monument, the permitted activities listed above are allowed at the following locations:

1. The permittees may conduct conservation and management activities throughout Papahānaumokuākea Marine National Monument.

# GENERAL TERMS AND CONDITIONS:

In accordance with the Proclamation and applicable regulations, the permitted activities listed above are subject to the following general terms and conditions:

1. The permittee must sign and date this permit on the appropriate line below. Once signed and dated, the permittee must provide a signed original copy to the Monument official identified below. The permit becomes valid on the date the last signature is obtained and shall remain valid until the permit expiration date.

NOAA/Inouye Regional Center NOS/ONMS/PMNM/Attn: Permit Coordinator 1845 Wasp Blvd, Building 176 Honolulu, HI 96818

- 2. This permit is neither transferable nor assignable and must be carried by the permittee while engaging in any activity authorized by this permit. All other persons entering the Monument under the authority of this permit must provide the name of the permittee or the permit number to any authorized enforcement or management personnel upon request.
- 3. This permit may only be modified by written amendment approved by the Co-Trustees. Modifications to this permit must be requested in the same manner as the original request was made. Any modifications requested by the permittee, such as adding or changing personnel to be covered by the permit or to change the activities that are allowed, must be made in writing.
- 4. This permit is subject to suspension, modification, non-renewal, or revocation for violation of the Proclamation, implementing regulations, or any term or condition of the permit. Any verbal notification of a violation from an authorized Monument representative may require immediate cessation of activities within the Monument. The issuance of a permit shall not constitute a vested or property right to receive additional or future permits. This permit may, in the sole discretion of the Co-Trustees, be renewed or

reissued. However, there is no right to a renewal or re-issuance. Failure to fulfill permit requirements may affect consideration of future permit applications.

- 5. Permit terms and conditions shall be treated as severable from all other terms and conditions contained in this or any other ancillary permit. In the event that any provision of this permit is found or declared to be invalid or unenforceable, such invalidity or unenforceability shall not affect the validity or enforceability of the remaining terms or conditions of this permit.
- 6. This permit does not relieve the permittee of responsibility to comply with all federal, state and local laws and regulations. For a list of federal, state, and local laws and regulations, refer to attached Papahānaumokuākea Marine National Monument Laws and Regulations document. Activities under this permit may be conducted only after any other permits or authorizations necessary to conduct the activities have been obtained.
- 7. The permittee may be held liable for the actions of all persons entering the Monument under the authority of this permit.
- 8. All persons entering the Monument under the authority of this permit are considered under the supervision of the permittee and may be liable in addition to the permittee for any violation of this permit, the Proclamation and implementing regulations in conjunction with this permit. The permittee must ensure that all such persons have been fully informed of the permit terms and conditions prior to entry into the Monument. Each such person must provide written acknowledgment to the permittee, prior to entry into the Monument, that he/she has received a copy of the permit, agrees to abide by all applicable terms and conditions, and may be liable for violations of the permit. The permittee shall maintain all signed acknowledgments and submit them with the summary report described in General Condition #22.b. An acknowledgement form is attached.
- 9. Notification of entry into the Monument must be provided at least 72 hours, but no longer than one month, prior to the entry date. Any updates to the list of personnel must also be provided at least 72 hours before entering the Monument. Notification of departure from the Monument must be provided within 12 hours of leaving the Monument. Notification may be made via e-mail or telephone by contacting: E-mail: nwhi.notifications@noaa.gov; Telephone: 1-866-478-6944; or 1-808-395-6944. No other methods of notification will be considered valid.
- 10. The permittee and any person entering the Monument under the authority of this permit shall, before entering the Monument, attend a cultural briefing or view designated cultural informational materials on Papahānaumokuākea regarding the region's cultural significance and Native Hawaiians' spiritual and genealogical connection to the natural and cultural resources. Persons entering the Monument at Midway Atoll may satisfy this requirement upon arrival.

- 11. All vessels (including tenders and dive boats), engines and anchor lines shall be free of introduced species prior to entry into the Monument. To ensure this, all vessels, engines and anchor lines shall be inspected for potential introduced species prior to departing the last port before entering the Monument. No later than 24 hours prior to entry, the permittee shall provide the Monument Permit Coordinator with a report prepared by the individual conducting the inspection that: a) sets forth when and where the inspection occurred; b) identifies any introduced species observed, including where found; c) summarizes efforts to remove any species observed; and d) certifies the vessel as free of all introduced species. The Monument Permit Coordinator shall review the report and, based on the review, may delay the entry into the Monument until all concerns identified by the Monument Permit Coordinator have been addressed.
- 12. All hazardous materials, biohazards and sharps, must be pre-approved by the Co-Trustees. For purposes of this permit, "hazardous material" has the same meaning as the definition found at 49 CFR §105.5 (U.S. Department of Transportation). All hazardous materials, biohazards and sharps must be stored, used, and disposed of according to applicable laws and Monument-approved protocols. The permittee or a designated individual entering the Monument under the authority of this permit must be properly trained in the use and disposal of all such materials proposed. Proof of appropriate training may be required by the Co-Trustees. No such material may be left in the Monument after the departure of the permittee unless it has been previously approved by Monument staff. Immediately after the project is complete the permittee must remove all such materials from the Monument. The permittee will be responsible for all costs associated with use, storage, transport, training, disposal, or HazMat response for these materials.
- 13. All equipment or supplies brought into the Monument, or structures of any kind built in the Monument by the permittee are the responsibility of the permittee. All materials that are brought to the Monument by the permittee must be removed by the permittee except as otherwise permitted. Any permanent structures, equipment, or supplies that require maintenance, are determined to be unserviceable, or are a safety hazard, must be immediately repaired or removed from the Monument by the permittee. No structures, equipment, or supplies may be left in the Monument following the completion of the project except as listed in the permit.
- 14. If Monument staff is present at the field site, the permittee must meet with them before beginning permitted activities. Even with a valid permit, authorized Monument staff may prohibit entry into any location(s) within the Monument as they may deem appropriate to conserve or manage resources, particularly in areas where cumulative impacts of permitted activities are concentrated.
- 15. In order to facilitate monitoring and compliance, any person entering the Monument under the authority of this permit, including assistants and ship's crew shall, upon request by authorized Monument enforcement personnel, promptly: a) allow access to and inspection of any vessel or facility used to carry out permit activities; b) produce for

inspection any sample, record, or document related to permit activities, including data, logs, photos, and other documentation obtained under, or required by, this permit; and c) allow inspection on board the vessel or at the permittee's premises of all organisms, parts of organisms, and other samples collected under this permit.

- 16. It is prohibited to possess or consume alcohol in the Hawaiian Islands National Wildlife Refuge in accordance with the refuge policy. Any violations will result in immediate removal of the offender from the Monument at the individual's own cost. Offenders may not be readmitted to the Monument.
- 17. All persons entering the Monument under the authority of this permit are responsible for the cost of removing themselves from the Monument at the conclusion of the term of the permit or upon revocation or suspension of the permit. All such persons are also responsible for the cost of removing themselves from the Monument in the event of a necessary medical evacuation, emergency evacuation, including weather, or for the cost of any necessary search and rescue operation.
- 18. Except as expressly required by applicable law, the Co-Trustees are not liable for any damages to equipment or injuries to the permittee and persons entering the Monument under the authority of this permit. The permittee and any person entering the Monument under the authority of this permit shall release, indemnify, and hold harmless the National Oceanic and Atmospheric Administration, the Department of Commerce, the U.S. Fish and Wildlife Service, the Department of the Interior, the United States Government, the State of Hawai'i, and their respective employees and agents acting within the scope of their duties from and against any claims, demands, actions, liens, rights, subrogated or contribution interests, debts, liabilities, judgments, costs, and attorney's fees, arising out of, claimed on account of, or in any manner predicated upon the issuance of this permit or the entry into or habitation upon the Monument or as the result of any action of the permittee or persons participating in the activity authorized by this permit. In the event that a government employee, acting in his official capacity, is the permittee, or is entering the Monument under the authority of this permit, then he shall be subject to all applicable federal and State laws that pertain to claims by or against him predicated upon the issuance of this permit or entry into or habitation upon the Monument.
- 19. Monument managers or their designees may verbally require the permittee to modify or cease activities not identified in this permit if, in the opinion of the managers or designees, such action is necessary to limit disturbance to or protect Monument resources, to protect government equipment, or to ensure the safety of personnel. After providing such verbal instructions, the managers or designees will provide the permittee with a written modification, suspension or revocation to this permit at the earliest practicable opportunity. The failure to follow verbal instructions or modified permit terms, or to cease activities upon suspension or revocation of this permit, may constitute a violation of this permit, the Proclamation, the regulations, or other applicable law.

- 20. Disturbance of any cultural or historic property, including but not limited to Native Hawaiian cultural sites, burials, archaeological deposits, maritime heritage sites, and WWII structures and features, such as stone walls and mounds, stone uprights, bunkers, batteries, camp sites, hospitals, housing areas, and radio towers; or the disturbance or collection of any historic or cultural materials and artifacts, including but not limited to bottles, dishes, cartridges, hospital materials, carvings, human remains, or Native Hawaiian bone or stone implements, found within the Monument, including the sale or trade in such items, is prohibited.
- 21. All Monument resources within the jurisdiction of the State of Hawaii are held in trust under the Hawai<sup>+</sup>i State Constitution, Article XI, Sec. 1. The State of Hawaii and the Government of the United States reserve ownership or control, as the case may be, of Monument resources, both living and nonliving, that may be taken or derived from those found in the Monument.
- 22. The permittee must satisfy the following reporting requirements:
  - a. Within thirty (30) days after the expiration date of this permit, the permittee must submit a summary report of activities conducted under this permit. The report shall be submitted using the Monument permit report template, if applicable.
  - b. For permitted vessels, the permittee having authority over the vessel must maintain and submit a cruise log within thirty (30) days after the expiration date of this permit. The log shall include but is not limited to: description of cruise activities, geographic locations of those activities, anchoring locations, and small boat dive locations. The permittee shall also maintain a daily vessel discharge log, which must be submitted with the cruise log.
  - c. Annual Report. The comprehensive annual report is a summary of all activities undertaken, including but not limited to: dates of all arrivals and departures from islands and atolls within the Monument, names of all persons involved in permitted activities, details of all specimens collected, handled, etc., any other pertinent information, GPS locations of all samples collected, transects, etc., results of work to date, copy of all data collected, and a proposed schedule of publication or production of final work. The report shall include a concise summary or abstract for use in Monument reports. Two hard copies and one electronic copy (Microsoft Word preferred, but not required), must be submitted to the Co-Trustees. The annual report is due by December 31 for each calendar year the permit was in effect. Subsequent annual reports are required each year until all data collected under research permits are fully analyzed.
  - d. For activities on State lands or within State waters, the permittee must submit a monthly report on the specified form.

- e. The permittee may debrief the Co-Trustees following the completion of all activities in the Monument covered under this permit. The permittee may schedule the debriefing upon submitting the annual report.
- f. The permittee must submit two copies of any article, publication, or other product created as a result of the information gained or work completed under this permit, including materials generated at any time in the future following expiration of this permit.
- g. Any publications and/or reports resulting from activities conducted under the authority of this permit must include the notation that the activity was conducted under permit number PMNM-2016-001. This requirement does not apply to publications or reports produced by the news media.
- h. All required submissions (including plans; logs, reports, and publications) shall be provided to the Monument official at the address indicated below:

Permit Coordinator NOAA Daniel K. Inouye Regional Center (DKIRC) NOS Papahānaumokuākea Marine National Monument 1845 Wasp Boulevard, B176 Honolulu, HI 96818

- 23. All data acquired or created in conjunction with this permit will be submitted with the summary report, and annual report. Photographic and video material is considered data. The permittee retains ownership of any data, (including but not limited to any photographic or video material), derivative analyses, or other work product, or other copyrightable works, but the Federal Government and the State of Hawai'i retain a lifetime, non-exclusive, worldwide, royalty-free license to use the same for government purposes, including copying and redissemination, and making derivative works. The permittee will receive acknowledgment as to its ownership of the data in all future use. This requirement does not apply to data acquired or created by the news media.
- 24. Because photographic or video material that is created for personal use (i.e., not specifically acquired or created in conjunction with this permit) could unintentionally collect data that is also valuable for management purposes, the Co-Trustees reserve the right to request copies of any such material and the permittee agrees to provide a copy of such material within a reasonable time. The Co-Trustees may use such material for management purposes.
- 25. Any question of interpretation of any term or condition of this permit will be resolved by the Co-Trustees.

NOAA/Daniel K. Inouye Regional Center NOS/ONMS/ Papahānaumokuākea Marine National Monument 1845 Wasp Blvd. Building 176 Honolulu, Hawai'i 96818

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# SPECIAL TERMS AND CONDITIONS:

- 1. This permit is not to be used for nor does it authorize the sale of collected organisms. Under this permit, the authorized research activities must be for noncommercial purposes not involving the use or sale of any organism, by-products, or materials collected within the Monument for obtaining patent or intellectual property rights.
- 2. The permittee may not convey, transfer, or distribute, in any fashion (including, but not limited to, selling, trading, giving, or loaning) any coral, live rock, or organism collected under this permit without the express written permission of the Co-Trustees.
- 3. To prevent introduction of disease or the unintended transport of live organisms, the permittee must comply with the disease and transport protocol attached to this permit.
- 4. Tenders and small vessels must be equipped with engines that meet EPA emissions requirements.
- 5. Refueling of tenders and all small vessels must be done at the support ship and outside the confines of lagoons or near-shore waters in the State Marine Refuge.
- 6. No fishing is allowed in State Waters except as authorized under State law for subsistence, traditional and customary practices by Native Hawaiians.
- 7. If there is any Hawaiian monk seal or any other protected species in the area when performing any permitted activity, the activity shall cease until the animal(s) depart the area, except as permitted for specific management of that species.
- 8. To ensure the protection of Monument resources, the permittee must conduct all activities in accordance with the following Monument Best Management Practices (BMP) and guidelines, as attached:
  - a. Marine Alien Species Inspection Standards for Maritime Vessels (PMNM BMP #001)
  - b. Protocol for Acquiring Avian Blood Samples (PMNM BMP #002)
  - c. Human Hazards to Seabirds Briefing (PMNM BMP #003)
  - d. Best Management Practices for Boat Operations and Diving Activities (PMNM BMP #004)
  - e. Protocol to Reduce Impact to the Laysan Finch (PMNM BMP #005)
  - f. General Storage and Transport Protocols for Collected Samples (PMNM BMP #006)
  - g. Special Conditions and Rules for Moving Between Islands / Atolls and Packing for Field Camps (PMNM BMP #007)
  - h. Protocols Necessary for Conducting Trolling Research and Monitoring (PMNM BMP #008)

- i. Best Practices for Minimizing the Impact of Artificial Light on Sea Turtles (PMNM BMP #009)
- j. Marine Wildlife Viewing Guidelines (PMNM BMP #010)
- k. Disease and Introduced Species Prevention Protocol for Permitted Activities in the Marine Environment (PMNM BMP #011)
- 1. Precautions for Minimizing Human Impacts on Endangered Land Birds (PMNM BMP #012)
- m. Special Conditions and Rules for Small Boat Operations at Tern Island (PMNM BMP #013)
- n. Reservation Requirements for Midway Flights, Lodging, and Meals (PMNM BMP #014)
- o. Nonnative Species Inspection Requirements at Midway Atoll (PMNM BMP #015)
- p. Best Management Practices for Activities on Nihoa (PMNM BMP #016)
- q. Best Management Practices for Maritime Heritage Sites (PMNM BMP #017)
- 9. Landing on uninhabited islands or atolls requires a U.S. Fish and Wildlife Service refuge authorized escort, trained for each particular uninhabited island or atoll.
- To ensure minimal disturbance to birds and safety of Monument staff, all inland GPS survey work must be pre-approved by the on-island manager or staff escort prior to surveying.
- 11. Permittee is required to work in conjunction with the U.S. Fish and Wildlife Service, Hawaiian Islands National Wildlife Refuge and Midway Atoll National Wildlife Refuge regarding any arrangements at Nihoa Island, Necker Island, the islands of French Frigate Shoals, Gardner Pinnacles, Laysan Island, Lisianski Island, the islands of Pearl and Hermes Atoll, Midway Atoll, and with the State of Hawai'i Kure Atoll Seabird Sanctuary Manager at Kure Atoll. The Refuge Managers for the above locations listed in the Permitted Activity Locations section must be notified at least 72 hours and not more than 30 days prior to arrival. Upon departing, notification to the appropriate Refuge Manager is required. Contact information for notifications are listed below:
  - a. French Frigate Shoals: Wildlife Refuge Specialist, Ty Benally; email Ty\_Benally@fws.gov, or telephone 808-792-9554.
  - b. Midway Atoll: Midway Refuge Manager, Daniel Clark; email <u>Daniel\_Clark@fws.gov</u>, or telephone 808-954-4818.
  - c. Laysan Island: Wildlife Refuge Specialist, Ty Benally; email Ty\_Benally@fws.gov, or telephone 808-792-9554.
  - d. Kure Atoll: Kure Biological Field Station Supervisor, Cynthia Vanderlip; or Natural Resources Management Technician, Matt Saunter; at kureatoll@gmail.com.

Your signature below, as permittee, indicates that you accept and agree to comply with all terms and conditions of this permit. This permit becomes valid on the date when signed by the last Monument Official. Please note that the expiration date on this permit will not be extended by a delay in your signing below.

Matthew Brown Superintendent for Policy, Partners, and Support Pacific Marine National Monuments Department of the Interior U.S. Fish and Wildlife Service

12/18/15

Date

Date

Athline Clark Superintendent, Papahānaumokuākea Marine National Monument Department of Commerce National Oceanic and Atmospheric Administration

Maria Carnevale State Co-Manager, Papahānaumokuākea Marine National Monument Department of Land and Natural Resources State of Hawaii

# Attachments (22):

- 1. PMNM Rules and Regulations
- 2. Monument Management Board Policy on Sustenance Fishing
- 3. Papahānaumokuākea Marine National Monument Rules and Regulations
- 4. Map of the Papahānaumokuākea Marine National Monument
- 5. Permit Acknowledgment Form
- 6. Marine Alien Species Inspection Standards for Maritime Vessels (PMNM BMP #001)
- 7. Protocol for Acquiring Avian Blood Samples (PMNM BMP #002)
- 8. Human Hazards to Seabirds Briefing (PMNM BMP #003)
- 9. Best Management Practices for Boat Operations and Diving Activities (PMNM BMP #004)
- 10. Protocol to Reduce Impact to the Laysan Finch (PMNM BMP #005)

NOAA/Daniel K. Inouye Regional Center NOS/ONMS/ Papahānaumokuākea Marine National Monument 1845 Wasp Blvd. Building 176 Honolulu, Hawaj'i 96818

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NOAA/Daniel K. Inouye Regional Center NOS/ONMS/ Papahānaumokuākea Marine National Monument 1845 Wasp Blvd. Building 176 Honolulu, Hawai'i 96818 PMNM-2016-001-F Co-Trustee Representatives

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Matthew Brown Superintendent for Policy, Partners, and Support, Pacific Marine National Monuments Department of the Interior U.S. Fish and Wildlife Service	Date
Athline Clark	Date
Superintendent, Papahānaumokuākea Marine National Monument	
Department of Commerce	
National Oceanic and Atmospheric Administration	
$\Lambda$ $\Gamma$ $\Lambda$	
	12/22/15
Maria Carnevale	Date
State Co-Manager, Papahānaumokuākea Marine National	
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NOAA/Daniel K. Inouye Regional Center	PMNM-2016-001-F
NOS/ONMS/ Papahānaumokuākea Marine National Monument 1845 Wasp Blyd. Building 176	Co-Trustee Representatives

- 11. General Storage and Transport Protocols for Collected Samples (PMNM BMP #006)
- 12. Special Conditions and Rules for Moving Between Islands / Atolls and Packing for Field Camps (PMNM BMP #007)
- Protocols Necessary for Conducting Trolling Research and Monitoring (PMNM BMP #008)
- 14. Best Practices for Minimizing the Impact of Artificial Light on Sea Turtles (PMNM BMP #009)
- 15. Marine Wildlife Viewing Guidelines (PMNM BMP #010)
- 16. Disease and Introduced Species Prevention Protocol for Permitted Activities in the Marine Environment (PMNM BMP #011)
- Precautions for Minimizing Human Impacts on Endangered Land Birds (PMNM BMP #012)
- Special Conditions and Rules for Small Boat Operations at Tern Island (PMNM BMP #013)
- 19. Reservation Requirements for Midway Flights, Lodging, and Meals (PMNM BMP #014)
- 20. Nonnative Species Inspection Requirements at Midway Atoll (PMNM BMP #015)
- 21. Best Management Practices for Activities on Nihoa (PMNM BMP #016)
- 22. Best Management Practices for Maritime Heritage Sites (PMNM BMP #017)

)(u)Suzanne Case

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Chairperson Board of Land and Natural Resources Department of Land and Natural Resources State of Hawaii

NOAA/Daniel K. Inouye Regional Center NOS/ONMS/ Papahānaumokuākea Marine National Monument 1845 Wasp Blvd. Building 176 Honolulu, Hawai'i 96818

12/18/15

Matthew Brown Superintendent for Policy, Partners, and Support Pacific Marine National Monuments Department of the Interior U.S. Fish and Wildlife Service



NOAA/Daniel K. Inouye Regional Center NOS/ONMS/ Papahānaumokuākea Marine National Monument 1845 Wasp Blvd. Building 176 Honolulu, Hawai'i 96818

PMNM-2016-001 Co-Trustee Representatives

Athline Clark Superintendent Papahānaumokuākea Marine National Monument Department of Commerce National Oceanic and Atmospheric Administration

DEP.

NOAA/Daniel K. Inouye Regional Center NOS/ONMS/ Papahānaumokuākea Marine National Monument 1845 Wasp Blvd. Building 176 Honolulu, Hawai'i 96818

# Appendix 1: Additional persons to be covered by permit. List all personnel roles and names (if known at time of application) here (e.g. John Doe, Research Diver; Jane Doe, Field Technician):

# U.S. Fish and Wildlife Service (FWS)

Pacific Islands Refuges and Monuments Office staff to include: Natural Resource Planner, Laura Beauregard; Supervisory Wildlife Biologist, Elizabeth Flint; Contaminants Specialist, LeeAnn Woodward; Pacific Marine National Monuments Superintendent for Operations, Susan White; Pacific Marine National Monuments Deputy Superintendent, Amanda Pollock; Administrative Officer, Stuart Sakurai;; Palmyra Manager, Stefan Kropidlowski; Inventory and Monitoring Biologist, Jared Underwood; Inventory and Monitoring Supervisor, Jean Kenyon; Refuge Zone Officer, Charlie Quitugua; Information and Education Specialist, Ken Foote; External Affairs Assistant, Sandra Hall; Invasive Species Coordinator, Jason Hanley; 3 Presidential Management Fellows, TBN and4 Volunteers, TBN.

FWS PMNM HQ Staff (10 total) to include:

 Pacific Marine National Monuments Deputy Superintendent for Policy, Partners and Support, TBN; FWS Permit Manager, TBN; Visitor Services Manager, Ann Bell; Wildlife Refuge Specialist, Ty J. Benally; Budget Officer, Pat Moriyasu; Administrative Officer, Maylanie Hipolito; Biological Science Technician, Cynthia Rehkemper; 1 Logistics Manager, TBN; 1 Wildlife Biologist, TBN; 1 Refuge Manager, TBN; 4 Volunteers, TBN.

FWS Midway Atoll NWR to include:

- Refuge Staff (15 total) includes Refuge Manager, Dan Clark; Deputy Refuge Manager, Bret Wolfe; Wildlife Biologist, TBN; Biological Science Technician, Ann Humphrey; Maintenance Mechanic, John Miller; 1 Park Ranger, TBN; 5 Biological Science Technicians or Volunteers, TBN
- Midway Atoll Contractors (70 total) includes45 DBSI contract support personnel for airport operations, logistics, facilities, medical, communications, and task orders; and 25 construction workers.
- Midway Federal Aviation Administration Staff(6 total) including Honolulu Air Traffic Organization, Dave Washino and Kevin Inouye; Airports District Office, Honolulu, Ron V. Simpson and Tyson Price; two FAA staff, TBN.

FWS Hawaiian Islands NWR Staff to include:

- French Frigate Shoals Staff (34 total) includes Wildlife Refuge Manager, Meg DuhrSchultz; Deputy Refuge Manager, TBN; 2 Biological Science Technicians, TBN; 10 Biological Science Volunteers, TBN; and 20 Maintenance Staff, Volunteers or Contractors, TBN.
- Laysan Island Staff (10 total) includes 4 Biological Science Technicians, TBN; and 6 Biological Science Volunteers, TBN.
- Nihoa Staff includes (4 total) 4 Biological Science Technicians or Volunteers, TBN.
- Lisianski Staff includes 2 Biological Science Technicians or Volunteers, TBN.
- Pearl and Hermes Staff includes 2 Biological Science Technicians or Volunteers, TBN

FWS Ecological Services Staff to include: Field Supervisor, Mary Abrams; Deputy Field Supervisor, David Tessler; Assistant Field Supervisor, Kristi Young; Aquatics Ecosystem Conservation Program Manager, Dan Polhemus; Oahu/Kauai/Northwestern Hawaiian Islands Geographic Team Program Manager, Aaron Nadig; 4 Fish and Wildlife Biologists, Nadiera Sukhraj-McCarthy, Kevin Foster, Tony Montgomery, and Jiny Kim; 1 Vertebrate Recovery Coordinator, Sheldon Plentovich; and 1 Contaminants Specialist, Michael Fry.

#### National Oceanic and Atmospheric Administration (NOAA)

- National Ocean Service (NOS), Office of National Marine Sanctuaries (ONMS) Superintendent, Athline Clark; Deputy Superintendent for Policy and Programs, David Swatland; Deputy Superintendent for Research and Field Operations, Randall Kosaki; Research Coordinator, TBN; Education and Technology Coordinator, Vincent Andy Collins; Administrative Officer, Moani Pai; Strategic Initiatives Coordinator, TBN; Planning and Evaluation Coordinator, TBN; Evaluation Specialist, Alyssa Miller; Planning and Evaluation Program Specialist, Allison Ikeda; Maritime Archaeologist, Kelly Gleason; Permits and Policy Coordinator, Tia Brown; Permits and Policy Specialist, Justin Rivera; Policy Specialist, Pua Borges-Smith; Constituent Outreach Specialist, TBN; Fiscal Administrator, TBN; Human Resource Specialist, TBN; Administrative/Fiscal Assistant, Acacia Dias; Research Specialist, Daniel Wagner; GIS Specialist, Joey Lecky; Field Operations Coordinator, Jason Leonard; Information Technology Support Specialist, TBN; Senior Information Technology Specialist, TBN; Mokupāpapa Discovery Center Manager, Kālewa Correa; Mokupāpapa Discovery Center Program Coordinator, Nakoa Goo; Monument Volunteer Coordinator, Virginia Branco; Mokupāpapa Discovery Center Program Associate, TBN; Kaua'i Programs Outreach Coordinator, Yumi Yasutake; Navigating Change Coordinator, Kainoa Kaulukukui; Resource Protection Specialist, Loren Scott Godwin; Program Specialist, Stephanie Fisher, Research Support Technician, Brian Hauk; Website & Graphic Designer, Kahi Fujii; Office Assistant, TBN; Executive Administrative Assistant, TBN; Strategic Initiatives Associate, TBN; Marine Operations Coordinator, Hadley Owen, ENS; Communications Manager, Toni Parras; Native Hawaiian Program Coordinator, TBN; Native Hawaiian Program Specialist, TBN; Native Hawaiian Research Associate, TBN; Data Team Program Coordinator, David Graham; Database Administrator, TBN; Web Applications Developer, John Geyer; GIS Developer, TBN; Data Documentation and Outreach Specialist, TBN; and Senior Data Analyst, TBN.

# – National Ocean Service (NOS), Center for Operational Oceanographic Products and Services (CO-OPS) field staff, TBN.

<u>– National Marine Fisheries Service (NMFS), Pacific Islands Regional Office (PIRO)</u> Pacific Islands Regional Administrator, Michael Tosatto; Deputy Regional Administrator, Sarah Malloy; Media and Outreach Coordinator, Wende Goo; Management Analyst, Pua Kamaka; Operations, Management, and Information staff, TBN; Protected Resources staff, TBN; Habitat Division staff, TBN; Restoration Center staff, TBN; Marine National Monument Program: Management and Program Officer, Samantha Brooke; Fishery Policy Analyst, Richard Hall; Natural Resources Management Specialist, Heidi Hirsh; and Natural Resource Policy Management Specialist, Hoku Ka'aekuahiwi; and Office of Law Enforcement staff, TBN. – National Marine Fisheries Service (NMFS), Pacific Islands Fisheries Science Center (PIFSC)

Science Center Director, Michael Seki; Deputy Director, Evan Howell; Science Operations Lead, Noriko Shoji; Operations Manager, Kyle Koyanagi; NEPA and Permits Coordinator, Hoku Johnson; Management and Program Analyst, Matthew Vandersande; Monument Science Coordinator, TBN; Natural Resource Management Specialist, Risa Oram, Biological Science Technician, Jamie Barlow; Biological Science Technician, Louise Giuseffi, Biological Science Technician, Eric Mooney; NOAA Corps Officer, David McVay; NOAA Corps Officer, Kelli-Ann Bliss, NOAA Corps Officer, Kristin Golmon, Logistics Leader, Christopher Demarke; Insular Fisheries Associate, Dianna Miller; Insular Fisheries Specialist, William Misa; Insular Fisheries Specialist, Audrey Rollo; Seabed Mapping Specialist, Jeremy Taylor; GIS Specialist, Bryan Dieter, other Science Operations Staff, TBN; Fisheries Research and Monitoring Division Stock Assessment Program staff; Research Fish Biologist, Benjamin Richards; Research Fish Biologist, Annie Yau; Math Stat, Marti McCracken, Life History Program Staff: Fish Bio-Sampling Tech, Meagan Sundberg Luers; Research Fish Biologist Joseph O'Malley; Research Fish Biologist, Ryan Nichols; Marine Debris Operations Manager, TBN; Coral Reef Ecosystem Program Operations and Marine Debris Team, Russell Reardon, Kevin O'Brien, Joao Garriques, James Morioka, other OMB staff TBN; Benthic Habitat Mapping staff, TBN; Coral Reef Ecosystem Program staff, TBN; Ecosystems and Oceanography Program staff, TBN; Protected Species Division Director, Frank Parrish; Biologist, Siri Hakala; Research Fish Biologist, Michael Parke, Marine Turtle Biology and Assessment Program (MTBAP) Leader, T. Todd Jones; Zoologist, George Balazs; MTBAP Biological Science Technician, Shawn K.K. Murakawa; MTBAP Biological Science Technician, Shandell Brunson; MTBAP staff, TBN; MTBAP 3 Temp Field Biologists, TBN; Research Fish Biologist, John R. Henderson; Supervisory Program Management Specialist, Chad Yoshinaga; Hawaiian Monk Seal Research Program (HMSRP) Manager, Charles Littnan; HMSRP staff: Ecologist, Stacie Robinson, Marine Biologist, Thea Johanos-Kam; Research Marine Biologist, Jason Baker; Field Research Supervisor, Jessica Lopez Bohlander; Biological Technician, Tracy Wurth;; Biological Research Associate, Mark Sullivan; Biological Research Assistant, Eric Tong; Biological Science Technician, Brenda Becker, Biological Science Technician, Robert Dollar; and TBN. Veterinarian, Michelle Barbieri; Veterinarian, TBN; Ten Temp Field Biologists, TBN. Cetacean Research Program (CRP) Lead, Erin Oleson; CRP staff : Acoustician Karlina Merkens; Ocean Engineer Lora Van Ufelen; Biological Science Technician Pollyanna Fisher Pool; Fisheries Biologist, Amanda Bradford; Marine Biologist, Marie Hill; Acoustician, Yvonne Barkley; Cetacean Specialist, Alexandra Bayless; Operations Manager, Erik Norris; Biological Science Technician, Aliza Millette; other CRP staff, TBN.

#### State of Hawai'i, Department of Land and Natural Resources (DLNR)

DLNR Chairperson, Suzanne Case, DLNR First Deputy, Kekoa Kauluhiwa; Water Deputy, Jeff Pearson; Division of Aquatic Resources (DAR) Administrator, TBD; Division of Forestry and Wildlife (DOFAW) Administrator, TBD; Members of the Board of Land and Natural Resources (BLNR), TBN; State Co-Manager, Maria Carnevale; PMNM Program Specialist, Molly Mamaril, Permit Coordinator, TBN; Wildlife Manager, Jason Misaki; Kure Atoll State Wildlife Sanctuary Manager, Cynthia Vanderlip; Kure Atoll State Wildlife Sanctuary Field Camp Leader, Naomi Worcester; Kure Atoll State Wildlife Sanctuary Field Camp Leader, Matthew Saunter; Offshore Island Biologist, Amarissa Marie; DOFAW Oahu Branch Manager, David Smith; 5 Kure Atoll State Seabird Sanctuary Volunteers and Technicians, TBN; 6 Aquatic Biologists, TBN; 6 Aquatic Alien Invasive Species (AIS) Team staff, TBN; 5 Biological Science Volunteers, TBN; Outreach and Education Specialist, Michelle G. Jones; 1 Outreach and Education Specialist, TBN.

#### Office of Hawaiian Affairs (OHA)

Board of Trustees and staff; Chief Executive Officer/Ka Pouhana, Dr. Kamana'opono M. Crabbe; Chief Operating Officer, Lisa Victor; Chief Advocate, Kāwika Riley; Line of Business Directors, Hawley Iona, Kēhaunani Abad, Lisa Watkins-Victorino; Executive Office staff, TBN; Chief Counsel, Ernest Kimoto; Corporation Counsel staff, TBN; Papahānaumokuākea Program Manager, Keola Lindsey; Papahānaumokuākea Program Specialist, Brad Ka'aleleo Wong; Policy Program Manager, Sterling Wong; Policy Program staff, TBN; Washington D.C. Bureau Chief, Patrick Gonzalez-Rodgers; Washington D.C. Bureau staff, TBN; Compliance Program Manager, Kai Markell; Compliance Program staff, TBN; Land, Culture and History Program Manager, Kamoa Quitevis; Land Culture and History Program staff, TBN; Program managers and staff, TBN.

Senior Executive Board (SEB), Members of the Monument Management Board (MMB), and the Interagency Coordinating Committee (ICC) which are comprised of, but not limited to: Environmental Protection Agency (EPA), Department of Defense (DOD), US Coast Guard (USCG), NOAA Office of Law Enforcement (OLE), USFWS OLE, DLNR Department of Conservation and Resource Enforcement (DOCARE), Office of Hawaiian Affairs (OHA) and State of Hawai'i Department of Health (HDOH).

Other staff, volunteers, cultural liaisons, or contractors necessary for the permitted activities may enter the Monument for conservation and management activities. Resident families of Midway Atoll may enter the Monument. Invited news media representatives may enter the Monument to provide public information of conservation and management activities. All personnel will be indentified and information will be provided to the Monument Permit Coordinators prior to each entry into the Monument.

The applicants shall ensure that all personnel assigned to any conservation and management activity allowed under this permit are qualified to perform in the assigned role and are limited to the scope of their position and respective project, and shall comply with all other applicable laws, policies, protocols, permits, and regulations. In addition, the applicants will ensure that all management activities are communicated and coordinated on an ongoing and regular basis.

To safeguard all the resources and ecological integrity of the Monument, early and ongoing coordination of interagency activities will occur between the action agency and interested Monument partners as soon as details of activities are identified. The goal of early coordination is the commitment to identifying, incorporating, and customizing best management practices for specific activities. Additionally, pre-access permit and cultural briefings will be conducted for all new personnel entering the Monument and annually for all.

# MARINE ALIEN SPECIES INSPECTION STANDARDS FOR MARITIME VESSELS

# Papahānaumokuākea Marine National Monument

Vessels destined for operation within the Papahānaumokuākea Marine National Monument (PMNM) shall be inspected for the presence of marine alien species prior to approval for an entry permit. This inspection will involve the detection of marine alien species associated with following mechanisms of transport:

- Ballast Water (See US Coast Guard regulations 36 CFR Part 151 and 46 CFR Part 162 Docket No. USCG-2001-10486 RIN 1625-AA32) https://homeport.uscg.mil/mycg/portal/ep/home.do then go to Environmental section
- 2) Biofouling associated with the primary vessel and tender vessels
- 3) Biofouling of scientific equipment and/or instrument arrays
- 4) Live organism transport

# **Standards for Compliance**

#### Ballast Water

Vessels must have a US Coast Guard and/or International Maritime Organization ballast water management plan on board. The records of ballast water operations for the previous month with source locations must be made available at the time of inspection. If inspectors have concerns, access to salt water ballast tanks must be provided to allow water sampling. If any salt water ballast on board is deemed unacceptable the vessels master must employ ballast water management practices described in 36 CFR § 151 and 46 CFR Part 162 prior to entry in the PMNM. No ballast water discharge is allowed within the boundaries of the PMNM except in the case of emergencies as defined by the US Coast Guard: (33 CFR Subpart D 151.2040 "Discharge of Ballast Water in Extraordinary Circumstances")

# **Biofouling**

All submerged and waterline surfaces must be free of macro-scale biofouling consisting of marine plants and animals. Surfaces must be free of any Chlorophyta (green-algae), Phaeophyta (brown algae), and Rhodophyta (red-algae) macro-algal species. Additionally, surfaces must be free of macro-invertebrate biofouling communities consisting of cnidarians (anemones and hydroids), arthropods (barnacles and macro-crustaceans), annelids (mobile and tube-dwelling worms), bryozoans, mollusks (clams, mussels and snails) and tunicates (sea squirts).

#### Live Organism Transport

There can be no transport of live or recently alive marine organisms associated with food stores, aquaculture/aquarium broodstock, or research activities aboard vessels departing for operations within the PMNM

### **PROTOCOL FOR ACQUIRING AVIAN BLOOD SAMPLES**

#### Papahānaumokuākea Marine National Monument

The following procedures describe and refer to methods of collecting avian blood samples. Bleed within about 5 minutes of retrieval, if possible, to minimize stress to the bird via one of the three methods outlined below.

#### Collection from Toe Clip:

- 1. Support leg of bird at knee joint and clip an accessible toe nail with nail clippers, scissors, or other appropriate instrument. Cut should extend to beginning of vascular area in the nail bed, but no deeper than necessary. The nail clippers, scissor blades, or other instrument used must be cleaned in disinfectant before each use.
- 2. Apply drop of blood forming at the site of the nail clip directly to a glass slide and make a blood smear or collected into a capillary tube.
- 3. Any residual bleeding can be stopped with a cotton swab which has been dipped in styptic powder, with silver nitrate sticks, or electro cautery.

#### Collection from Wing Vein:

- 1. Place the bird in the right hand with back to palm and left wing extended with index and middle fingers.
- 2. Moisten the wing joint with a cotton swab that has been dipped in 70% alcohol. Use swab to move feathers away from the joint so that the brachial vein is exposed.
- 3. Lightly prick the brachial vein with a 27 gauge needle and immediately collect the blood by inserting one end of a Fisher Red-tipped, heparinized microhematocrit capillary tube into the bubble of blood or collect blood with a 26, 27, or 28 gauge needle on a 0.5 or 1 cc syringe. Hold the tube at a slight decline from the wing to maximize flow into the tube. Fill the tubes to within about 2 cm of the end (2/3 3/4 full). Seal each tube on the blood-drawing end with critoseal. Place the tube on wet ice until centrifugation (i.e., do not freeze). It is best to centrifuge the blood immediately, but it may be kept on ice or refrigerated for longer if necessary (usually no more than 24 hours later, however). If you create a hematoma (blood clotting under the skin), you can often get the blood flowing again by rubbing back and forth over the wing vein with your thumb.
- 4. Collect one microhematocrit tube per 10 grams of body weight so that no more than 1% of the body weight is removed.
- 5. Stop any residual bleeding with a cotton swab which has been dipped in styptic powder.

- 6. Centrifuge the tubes at about 13,400 G for 5 minutes in a centrifuge with a microhematocrit tube rotor head (with the sealed ends pointed outwards).
- 7. After centrifugation, measure hematocrit as the ratio of the length of the red blood cells in the tube of the total length of blood in the tube.
- 8. Saw the tube with the edge of a small file just at the line between the erythrocytes and the plasma portions. Break the tube at this line (after a very small nick is placed in the tube it breaks cleanly, and easily, at the site of the nick).
- 9. Lightly blow the plasma half into a "nunc" or other cryogenic tube (if the blood is to be stored in liquid nitrogen). Use a syringe or pipette to blow the erythrocyte half into a different nunc tube. Label the tubes and place in dry ice or liquid nitrogen, or into a freezer if one is available.

#### Collection from Jugular Vein:

NOTE: Only persons trained in the removal of blood from the jugular vein are authorized to employ this procedure. These persons must also be knowledgeable in the use of antishock therapy.

- 1. Place bird in hand with back to palm, index and middle fingers placed on either side of neck with tips pressed against mandible.
- 2. Gently stretch neck with index and middle fingers to expose feather tracts on either side of right jugular vein.
- 3. Wet feathers with a cotton swab moistened with 70% alcohol to reveal the featherless space between feather tracts.
- 4. Gently depress neck area with thumb at a spot immediately anterior of point of folded wing joint to restrict jugular flow and raise vein.
- 5. Insert 26, 27, or 28 gauge needle on a syringe into the jugular vein and withdraw no more than 0.1 ml of blood per 10 grams of body weight (no more than 1% of body weight).
- 6. Remove needle and apply light pressure with thumb for 30 seconds or as long as required to prevent formation of hematoma.

NOTE: The above information was extracted from protocol adapted by the U.S. Fish and Wildlife Service, National Biological Survey, 1849 C Street, N.W., ARLSQ 725, Washington, D.C. 20240 (202/208-6394).

#### HUMAN HAZARDS TO SEABIRDS BRIEFING

#### Papahānaumokuākea Marine National Monument

Most seabirds exhibit insular tameness, which is behavior characterized by a lack of the wariness you might observe in birds living in areas with terrestrial predators. Because of this, it sometimes appears by their actions as if humans pose no problems for them. In fact there are a number of potentially serious consequences every time a seabird colony is entered, even by experienced researchers.

<u>Mechanical</u> – At most seabird colonies in the central Pacific you will see birds nesting on three different levels, under the ground, on the surface, and in the shrubs and trees. At many times of the year it is difficult to walk in some parts of the colony without stepping on eggs or caving in the burrows of the petrels and shearwaters. Chicks of several of the tern species hide in vegetation so you should be careful about setting your foot where you cannot see the surface of the ground. Ground-nesting Grey-backed Terns and Brown Noddies are often most affected by your activities because they are very timid and nest in open areas that may be travel pathways. If you have occasion to have to walk in burrow areas you must be prepared to rescue a shearwater or petrel by digging if you accidentally cave in its home. Special care should be taken never to leave string or line anywhere in the colony. Seabirds have an uncanny ability to find it and get tangled in any material of this kind.

<u>Thermal</u> – The climate of the tropical and subtropical islands seems mild but the eggs and small chicks of all the species live a precarious life on the edge of thermal disaster. The attendance patterns of adults reflect this, with eggs and tiny chicks virtually never left unattended. Great care and attention must be given to never keeping a bird off its egg or chick for more than a few minutes. Keep this in mind if you must spend more than 3 or 4 minutes in any area. This is an issue when it is hot as well as when it is cool and wet. When first approaching a site look for any nest or adult flushed from an inconspicuous nest and plan your work to minimize keeping birds from attending their eggs or chicks.

<u>Biological</u> – In some colonies, one species may learn to take advantage of human disturbance to prey upon others. Frigate birds will take chicks and steal nest material from booby nests and other Frigate bird nests when the owners of the nest are frightened off by human disturbance. In colonies inhabited by finches of various species the minute an egg is exposed the finch will rush in and peck a hole and consume the contents. Unattended eggs of ground-nesting species are often eaten by shorebirds such as Ruddy Turnstones. All small seabirds are at great risk in colonies where there are introduced rats. It is possible that going up to isolated or cryptic nest and handling the eggs will provide a trail that might lead rats to the nest.

U.S. Fish and Wildlife Service Papahānaumokuākea Marine National Monument

#### BEST MANAGEMENT PRACTICES (BMPS) FOR BOAT OPERATIONS AND DIVING ACTIVITIES

#### Papahānaumokuākea Marine National Monument

The National Marine Fisheries Service recommends the following BMPs be followed to reduce or eliminate adverse effects on protected marine species through potential interactions with in-water activities such as boat operations or diving. They are primarily aimed at small-scale projects such as research dives, marine debris removal, or small buoy placement or repair projects conducted by resource agencies or contracted personnel. These BMPs are not necessarily comprehensive for major construction activities:

- 1. Constant vigilance shall be kept for the presence of Federally-listed marine species;
- 2. When piloting vessels, vessel operators shall alter course to remain at least 100 yards from Hawaiian monk seal mom-pup pairs and humpback whales, and at least 50 yards from other marine mammals and sea turtles;
- 3. Reduce vessel speed to 10 knots or less when piloting vessels in the proximity of marine mammals;
- 4. Reduce vessel speed to 5 knots or less when piloting vessels in areas of known or suspected turtle activity;
- 5. Marine mammals and sea turtles should not be encircled or trapped between multiple vessels or between vessels and the shore;
- 6. If approached by a marine mammal or turtle, put the engine in neutral and allow the animal to pass;
- 7. Unless specifically covered under a separate permit that allows activity in proximity to marine protected species, all in-water work will be postponed when whales are within 100 yards, or other protected species are within 50 yards. Activity will commence only after the animal(s) depart the area;
- 8. Should marine protected species enter the area while in-water work is already in progress, the activity may continue only when that activity has no reasonable expectation to adversely affect the animal(s); and
- 9. Do not attempt to feed, touch, ride, or otherwise intentionally interact with any marine protected species.

Adopted by Papahānaumokuākea Marine National Monument

# PROTOCOLS TO REDUCE IMPACT TO THE LAYSAN FINCH

### Papahānaumokuākea Marine National Monument

The following avoidance and minimization measures will reduce the risk of harm to the Laysan finch:

- 1. To reduce the risk of inadvertent drowning of Laysan finch at the campsite:
  - Buckets will always be overturned so that they cannot collect rainwater.
  - Laundry buckets must have lids while laundry is soaking.
  - Water-filled buckets for dish washing (or for any other purpose) will always be attended.
  - Tarps (*e.g.*, those covering propane, etc.) will be tucked in tightly so that they cannot collect rainwater.
  - Garbage cans used for desalinization will have netting placed between the can and the lid. Care will be taken to make sure the lids close properly; faulty positioning of hoses can interfere with proper closure.
- 2. To minimize accidental entanglement of Laysan finches at the campsite:
  - Fabric with loose threads will be burned to minimize the risk of Laysan finch entanglement. Laysan finch feet can become entangled when fabric is hung out to dry.
  - Loose threads will be cut off tents and tarps.
  - Anything with small mesh (*e.g.*, bird nets) will be put away to avoid Laysan finch entanglement.
- 3. To minimize impacts to Laysan finch from general camp activities and maintenance:
  - Camp supplies and water jugs will be aligned with ample space between rows so that finches will not get trapped. Storage jugs will always be capped.
  - Burn barrels must be attended at all times when burning trash. When not burning, any vents or rust-eaten holes in the barrel or lid will be covered (*e.g.*, with rocks).
  - For stability reasons, buckets will not be stacked more than two high. Personnel will watch for leaning buckets or water jugs and level the sand beneath leaning buckets if necessary.
  - Tents will be zipped at all times (day and night) so that finches cannot enter.
  - Laysan finches will not be fed or allowed access to human food. Laysan finch dependency on the camp could potentially result in adverse impacts to the finches when campsites are dismantled.
  - On the islands of Pearl and Hermes, Laysan finches appear to be limited by nest sites, therefore, they nest in debris (driftwood, plastic pipes, baskets, etc.). Thus, the beaches will not be cleaned or debris disturbed as this may destroy a nest. In an effort to prevent nesting in undesirable locations, camp gear must be checked daily during the nesting season (spring and summer) for signs that finches are building nests on or under gear. If it is determined nest building has begun, the nest site should be modified to prevent nest completion.

#### U.S. Fish and Wildlife Service

# GENERAL STORAGE AND TRANSPORT PROTOCOLS FOR COLLECTED SAMPLES

#### Papahānaumokuākea Marine National Monument

This protocol applies to the storage and transport of commonly collected samples (i.e. terrestrial samples, coral, fish, and invertebrates) in the Papahānaumokuākea Marine National Monument. It was developed to ensure proper precautions in the handling of biological samples under the IATA and DOT Federal guidelines for safe transport of biological material (Packing Instruction 650). Separate protocols may exist for individual species or activities.

#### A. Diseased metazoan samples:

- 1. Diseased samples or those in which a parasite or pathogen is suspected will be collected and placed into individual plastic ziplock or whirl pak bags and sealed until return to base station (research vessel or field camp). Bags will be immediately labeled, or pre-labeled bags will be used.
- 2. Separate equipment will be used to sample health-compromised versus healthy organisms and these tools will be soaked in a freshwater bleach solution for at least ten minutes and rinsed in fresh water between dives (see Disease and Introduced Species protocol for additional collection equipment and disinfection requirements).
- 3. Sealed plastic bags with diseased samples will be processed immediately or stored on ice in a cooler or other leak-proof container until return to base station.
- 4. Specimens will not be released or exposed to environments beyond the collection location (island/atoll).
- 5. Upon return to the ship or field camp, collection tools used for diseased samples will be disinfected with 10% bleach by soaking in a freshly made solution for a minimum of ten minutes, followed by a thorough freshwater rinse and air-drying.
- 6. Collected specimens will be processed as soon as possible and placed in a clearly labeled primary storage container.
- 7. Processing and storage containers are dependent on preservation method:

Chemically preserved:

8. Specimens will be chemically fixed or preserved in one of the following (in sufficient concentration to fix all tissues):

Ethyl alcohol Isopropyl alcohol Methyl alcohol DMSO DNA extraction buffer Z-fix Formaldehyde/formalin Glutaraldehyde Acetone Bouin's fixative Helly's fixative

- 9. Specimens in primary containers (the first zip-lock or whirl-pak bag) will be double contained in an additional whirl-pak bag, ziplock plastic bag, or plastic jar with a label identifying the collector, site and contents between the primary and secondary containers.
- 10. Double-contained samples will then be placed in action packer, cooler, or other leakproof packaging (providing triple containment) capable of surviving a 1.2 m drop without rupture, and clearly labeled on the outside as to the PI and contents for future transport off the ship. This leak-proof packaging must have sufficient absorbent material to contain the entire fluid volume contained in the cumulative sample volume if a leak should occur.
- 11. Specimens will be preserved and stored in primary and secondary containment, as outlined above, as soon as possible upon return to the ship or field camp, and will remain in preservative in unopened secondary containment until return from NWHI into a BSL-2 facility.
- 12. All sample containers will be sealed and the outside surface of the leak-proof cooler or action packer will decontaminated with bleach solution prior to transport off the ship directly to the receiving laboratory.

#### Frozen:

- 13. Immediately upon returning to the base station, seawater remaining in whirl-pak storage bags will be decanted into a container. This water will be processed by an MSD or similar sewage treatment process.
- 14. The specimens will not be removed from the whirl-pak storage bag. Instead, the bag will be resealed, disinfected, clearly labeled, and placed in secondary containment such as ziplock freezer bags. The secondary containers will also be clearly labeled.
- 15. Samples will be stored frozen in the absence of any buffer aboard the research vessel.
- 16. The work area will be decontaminated with a 10% bleach solution.
- 17. After freezing, samples will not be removed, thawed, or opened while aboard the research vessel.
- 18. When it is time for transport from base station, the samples (still in secondary containment) will be placed in a cooler loaded with icepacks in order to keep them frozen. The cooler will then be sealed for transport.
- 19. All coolers or action packers will be sealed and the outside surface decontaminated with bleach solution prior to transport off the ship directly to the receiving laboratory.

#### B. Non-diseased metazoan or other multicellular samples:

- 20. See Disease and Introduced Species protocol for collection equipment and disinfection requirements.
- 21. Processing and storage containers are dependent on preservation method:

#### Chemically preserved:

- 22. Specimens will be chemically preserved in one of the following:
  - Ethyl alcohol Isopropyl alcohol Methyl alcohol DMSO DNA extraction buffer Z-fix Formaldehyde/formalin Glutaraldehyde Acetone Bouin's fixative Helly's fixative
- 23. Specimens will be double contained in plastic vials or bottles, glass bottles, whirl-pak or ziplock bags; and placed in action packer or cooler. Blood or blood components should be contained using a primary container, absorbent material, a secondary container, and an outer container that is leak-proof.
- 24. Specimens will be preserved and stored prior to leaving collection location and will remain in preservative until return from NWHI.

#### Frozen:

25. Specimens (tissues or whole organisms) will be double contained in plastic bottles, glass bottles, or whirl-pak bags; or larger plastic bags and placed in action packer, cooler, or other leak-proof packaging.

#### Dried:

- 26. Terrestrial plants or their parts may be pressed and dried and then transported in a closed container.
- 27. When appropriate, terrestrial arthropods may be pinned and dried and transported in appropriate closed containers.
- 28. Coral skeletal samples (e.g., for taxonomic verification studies) will be soaked in commercial bleach solution to remove tissues, air dried, stored in whirl-pak bags, and placed in action packer, or cooler. Remaining bleach solution should not be discarded, but stored in plastic or glass bottles, properly labeled as "waste".

#### Papahānaumokuākea Marine National Monument

#### **REVIEWERS**:

Dr. Roger Fujioka, Researcher, Water Resources Research Center, University of Hawaii Dr Drew Harvell, Professor of Ecology and Evolutionary Biology, Cornell University Dr. Cheryl Woodley, Research Microbiologist, NOAA/National Ocean Service

#### SPECIAL CONDITIONS AND RULES FOR MOVING BETWEEN ISLANDS / ATOLLS AND PACKING FOR FIELD CAMPS

#### Papahānaumokuākea Marine National Monument

The islands and atolls of the Papahānaumokuākea Marine National Monument (Monument) and the Hawaiian Islands National Wildlife Refuge are special places providing habitat for many rare, endemic plants and animals. Many of these species are formally listed as Endangered under the Endangered Species Act. Endemic plants and insects, and the predators they support, are especially vulnerable to the introduction of competing or consuming species. Such introductions may cause the extinction of island and reef endemics, or even the destruction of entire island or reef ecological communities. Notable local examples include: the introduction of rabbits to Laysan Island in 1902 which caused the extinction of numerous plant and insect species, and 3 endemic landbird species; the introduction of rats to many Pacific Islands causing the elimination of many burrowing seabird colonies; the introduction of the annual grass, sandbur, to Laysan Island where it has crowded out native bunch grass thus, eliminating nesting habitat for the Endangered Laysan finch; and, the introduction and proliferation of numerous ant species throughout the Pacific Islands to the widespread detriment of endemic plant and insect species.

Several of the islands within the Monument are especially pristine, and as a result are rich in rare and special plants and animals. Nihoa Island has at least 17 endemic and rare insect species, 5 Endangered plants and 2 Endangered birds. Necker Island has Endangered plants and 11 endemic insects. Laysan Island has Endangered plants, 9 endemic arthropods and the Endangered Laysan finch and Laysan duck. Other islands in the Monument such as Lisianski, and islets in Atolls such as Pearl and Hermes Reef and French Frigate Shoals provide homes for a variety of endemic and/or endangered species and require special protection from alien species.

Other Pacific Island such as Kure and the "high islands" (Oahu, Hawaii, Maui, Kauai, etc.) as well as, certain islands within Midway Atoll, Pearl and Hermes Reef and French Frigate Shoals have plants and/or animals that are of high risk for introduction to the relatively pristine islands discussed above. Of special concerns are snakes, rats, cats, dogs, ants and a variety of other insect and plant species. Harmful plant species of highest concern that we know of are *Verbesina encelioides, Cenchrus echinatus, and Setaria verticillata*.

The Co-trustees are responsible for the management and protection of the islands, reefs and wildlife of the Monument. No one is permitted to set foot within the Monument without the express permission of the Co-trustees through the permitting process. Because of the above concerns, the following restrictions on the movement of personnel and materials throughout the Monument exist.

# The Following Conditions and Rules apply to the all islands within the Monument with the exception of those at French Frigate Shoals and Midway Atoll:

## **Definitions:**

"**new**" means off the shelf and never used anywhere but the island in question. "**clothing**" is all apparel, shoes, socks, over and under garments.

"**soft gear**" is all gear such as daypacks, fannypacks, packing foam or similar material, camera bags, camera/binocular straps, microphone covers, nets, holding or weighing bags, bedding, tents, luggage, or any fabric, fiber, paper or material capable of harboring seeds or insects.

- 1. Any personnel who will be landing boats, and staying within the boats, at any island should have clean clothes and shoes.
- 2. Any personnel going ashore at any island and moving inshore from the immediate area in which waves are breaking, or beyond the intertidal area, at the time of landing must have new footwear, new or island specific clothes and new or island specific soft gear. All must be frozen for at least 48 hours prior to landing.
- 3. Any personnel entering any vegetated area, regardless of how sparse the vegetation, must have new footwear, new clothes and new soft gear all frozen for at least 48 hours prior to landing.
- 4. To avoid transport of seeds from within small boats the following protocol should be followed. For islands with safe or sandy landing conditions, one should keep quarantine shoes/socks inside quarantine containers until the island is reached. One should go ashore bare foot, and then don the quarantine shoes. Non quarantine shoes should be removed in the small boat, put into a bucket or some kind of sealed container, and left enclosed in that container until the person departs the island. The sealed container, if clean on the outside, may go ashore, but should not be opened ashore. For landings which are rocky, rough, and relatively unsafe (such as Necker and Nihoa) for safety reasons, quarantine shoes should be donned when inside the small boats, but care should be taken to look for seeds and insects which may be in the small boat.
- 5. Soft gear may not be moved between islands. Hard gear must be thoroughly cleaned and frozen for at least 48 hours between islands.
- 6. During transit, clothing and gear coming off Kure, Midway, or any islet of French Frigate Shoals must be carefully sequestered to avoid contamination of gear bound for cleaner islands. Special care must be taken to avoid contaminating gear storage areas and quarters aboard transporting vessels with seeds or insects from these islands.
- 7. Regardless of origin or destination, inspect and clean all equipment, supplies, etc., just prior to any trip to the Monument. Carefully clean all clothing, footwear and softgear following use to minimize risk of cross contamination of materials between islands.

8. Pack supplies in plastic buckets with fitted lids or other sealable metal or plastic containers since they can be thoroughly cleaned inside and out. <u>Cardboard is not</u> <u>permitted on islands.</u> Cardboard boxes disintegrate in a short time and harbor seeds, animals, etc., which cannot be easily found or removed. <u>Wood is not permitted unless</u> <u>sealed (painted or varnished) on all surfaces and frozen for 48 hours.</u>

Wooden boxes can also harbor insects and seeds and therefore are only allowed if well constructed (tight fitting seams are required). All wood must be treated, and inside and outside surfaces must be painted or varnished to provide a smooth, cleanable finish that seals all holes.

- 9. Freeze or tarp and fumigate then seal all equipment (clothes, books, tents, everything) just prior to departure. Food and cooking items need not be fumigated but should be cleaned and frozen, if freezable. Cameras, binoculars, radios, and other electronic equipment must be thoroughly cleaned, including internal inspection whenever possible, but do not need to be frozen or fumigated. Such equipment can only be packed in wooden crates if treated as in #2 above. Any containers must contain new, clean packing materials and be frozen or fumigated.
- 10. At present, Tern Island is the singular exception to the above rule, having less stringent rules due to the large number of previously established alien species. Careful inspection of all materials and containers is still required. However, it is acceptable to use wooden and cardboard containers for transporting supplies to Tem Island. Also, there is no requirement for freezing or fumigating items disembarked at Tem. Although requirements for Tem Island are more lax, the Refuge is still concerned about the possibilities of new introductions. Do not wear clothing to Tern Island that has been worn at Pearl and Hermes, Midway Atoll or Kure Atoll.

<u>Additional Special Conditions for Travel to Nihoa and Necker (Mokumanamana) Islands:</u> Nihoa and Necker are the most pristine locations in the Monument. Nihoa is home to the highest number of federally listed endangered species in the Monument. Many areas of these small rugged islands are inaccessible. Introduction of any alien species could have disastrous results in a very short time. It would be almost impossible to mount any kind of control or eradication program on these islands should an alien species become established. Because of these reasons, access to Nihoa and Necker are strictly limited, and rules governing entry are more stringent.

1. Access to Nihoa and Necker by permittees will only be allowed under the accompaniment and supervision of a U.S. Fish and Wildlife Service (USFWS) Representative. The representative, who shall be appointed by the U.S. Fish and Wildlife Service Monument Manager will work with permittees to assure careful compliance with all rules for inspection, handling and preparation of equipment. The USFWS Representative will have the authority to control and limit access to various parts of the island to protect animals, plants and archaeological sites, especially endangered species. The USFWS Representative will have the authority to disallow access to the island, or order an immediate departure from the island if conditions for working on the island are not met or are violated in some way.

- 2. All field equipment made out of fabric material or wood must be new, and never previously used in the Northwestern or main Hawaiian Islands. Equipment previously purchased or made for use on Nihoa and Necker that has been carefully sealed and stored while away from Nihoa and Necker, and not used elsewhere, may also be brought onto the island. Rules for freezing and/or fumigating are as described for other sites in the Monument (see above).
- 3. Clothing, footwear (shoes, slippers, socks, etc.), daypacks (soft gear) must be new, unused, or previously only used on Nihoa (or Necker) and carefully sealed and stored while off of the island. Hard gear such as camera, and equipment must be thoroughly cleaned and inspected.

#### Additional Special Conditions for Travel within Pearl and Hermes Atoll:

In recent years *Verbesina encelioides* has been introduced to Southeast Island within Pearl and Hermes Atoll. This noxious weed has taken over a large portion of the island. To prevent the further spread of this weed to the other islets within this atoll the following precaution must be taken:

- 1. Every person should have one set of quarantine gear and clothing for Southeast Island and one set of quarantine gear and clothing for all other islets in the atoll. For instance the same clothing, and if needed camping gear, may be used at north and seal kittery, but anything used at southeast needs to stay off all other islets in the atoll. Do not use the outer islet clothing and gear on Southeast Island.
- 2. Carefully inspect small boats and their associated equipment when traveling between islets at Pearl and Hermes Atoll. Since folks likely take one anchor ashore and put one anchor in the water there is potential for seed dispersal on anchor lines as well as from within the small boats. This needs to be watched very carefully.

#### **Additional Special Conditions for Food:**

Fresh foods such as fruits, vegetables, leafy vegetables and tubers are not permitted on quarantine enforced islands (Necker, Nihoa, Laysan, Garner Pinnacles, Lisianski and Pearl and Hermes Reef). Concern is not only that certain species such as tomatoes could easily become established but that decomposing organic waste can also harbor microbes and insects and can act as an introduction vector. Soil can contain many seeds, eggs, larvae, etc., and cannot be transported to or between islands.

All other food that can be safely frozen (this does not apply to food in cans or glass jars) must be packaged in air tight containers just as all other gear and frozen for 48 hours.

#### SEABIRD PROTOCOLS NECESSARY FOR CONDUCTING TROLLING RESEARCH AND MONITORING

#### Papahānaumokuākea Marine National Monument

To avoid hooking non-targeted species, only artificial lures will be used when trolling.

All fishing activity must cease when any birds start orienting to and following trolling lures. Fishing boats must not be driven through aggregations of foraging or resting seabirds.

All gear must be cleaned using a mild bleach solution before use in the Monument and must also be cleaned according to quarantine procedures. The bleach solution would be disposed of properly.

# BEST PRACTICES FOR MINIMIZING THE IMPACT OF ARTIFICIAL LIGHT ON SEA TURTLES

# Papahānaumokuākea Marine National Monument

NOAA's National Marine Fisheries Service (NOAA Fisheries) and the U.S. Fish and Wildlife Service are jointly responsible for the protection of threatened and endangered sea turtles. In Hawai'i, the agencies are especially concerned about the impact of shoreline activities on the successful nesting and basking of green and hawksbill sea turtles.

Over 90 percent of nesting activity for the Hawaiian population of the threatened green sea turtle (*Chelonia mydas*) occurs at French Frigate Shoals in the Northwestern Hawaiian Islands (NWHI). Green turtles nest from May through September, peaking in June and July. Hatchlings continue to emerge from nests through November. Large numbers of green turtles are also known to bask throughout the NWHI. The endangered hawksbill sea turtle (*Eretmochelys imbricata*) also nests in Hawai'i, with over 90 percent of documented nests occurring on the Island of Hawai'i. Regular nesting also occurs on Maui and Moloka'i. Hawksbills appear to nest and forage primarily within the main Hawaiian Islands, though they have been sighted in the Northwestern Hawaiian Islands.

Many factors affect the potential survival of these turtles, including the loss or destruction of nesting and basking beaches, and other human shoreline activities such as the use of artificial lights. The following set of measures should be adopted as appropriate, to minimize the impacts of lighting on sea turtles:

# A. Avoid the use of artificial lighting near beaches, where possible, particularly during nesting and hatching seasons.

Artificial light sources on a nesting beach may deter adult females from exiting the water to lay eggs on the beach, cause abandonment of nesting attempts, or disorient adult females and disrupt their natural behavior of returning to the sea after nesting. Artificial light will disorient hatchlings that use light cues to find their way to the sea, making them more vulnerable to predation, exhaustion, and desiccation. Artificial light may also disturb basking turtles.

# **B.** Do not use excessive or unnecessary amounts of light, or leave lights on or allow campfires to burn longer than necessary.

Basking behavior may help turtles avoid marine predators. If artificial lighting causes a basking turtle to return to the sea, it may be more vulnerable to predation.

# **C.** Shield or redirect lights to reduce as much as possible the amount of light that can be seen from the nesting or basking beach.

Effective light shields should be completely opaque, sufficiently large, and positioned so that light from the shielded source does not reach the beach.

# **D.** Where possible, use low-intensity light sources that emit long wavelength light (yellow, red) and avoid sources that emit short wavelengths (ultraviolet, blue, green, white).

Long wavelengths are the least disturbing to sea turtles. Red light-emitting diodes (LEDs) are the best option and one of the light sources least disruptive to sea turtles. Amber or yellow filters placed on light sources are less desirable than red lighting, as they vary in effectiveness and will fade over time.

# E. Aboard vessels at sea, use the minimum lighting necessary to comply with navigation rules and best safety practices.

Sea turtles of all life stages may be attracted to lights from vessels at sea. These turtles may be vulnerable to vessel activities, as well as being vulnerable to predators that may also be attracted to the same lights.

# Marine Wildlife Viewing Guidelines Papahānaumokuākea Marine National Monument

# **Guidelines**<sup>1</sup>:

Papahānaumokuākea Marine National Monument promotes Responsible Marine Wildlife Viewing and offers the following guidelines. These guidelines do not replace Federal or state law. Pursuit and feeding of marine mammals is **prohibited** by Federal law.

- 1. Remain at least 100 yards (300 feet / 92 meters) from all Hawaiian monk seal mom-pup pairs and humpback whales.
- 2. Remain at least 50 yards (150 feet / 46 meters) from other marine mammals (dolphins, other whale species, and adult Hawaiian monk seals).
- 3. Observe turtles from a distance.
- 4. Bring binoculars along on viewing excursions to assure a good view from the recommended viewing distances.
- 5. Do not attempt to touch, ride, or feed turtles.
- 6. Limit your time observing an animal to 1/2 hour.
- 7. Marine mammals and sea turtles should not be encircled or trapped between boats or shore.
- 8. If approached by a marine mammal or turtle while on a boat, put the engine in neutral and allow the animal to pass. Boat movement should be from the rear of the animal.

# **Background:**

The marine wildlife viewing guidelines are intended to help you enjoy watching marine wildlife without causing them harm or placing personal safety at risk.

Before you visit a wildlife location, read about the wildlife, viewing sites and local regulations to get the most from your wildlife viewing experience. Many species live only in specific habitats such as estuaries, coral reefs, sand dunes or the open ocean. Seasonal and daily cycles also influence when and where an animal may be located.

Keep your distance from wildlife by using binoculars, spotting scopes and cameras with zoom lenses to get a closer look. Marine wildlife may be very sensitive to human disturbance, and if cornered, they can harm the viewer or leave the area. If wildlife approaches you, stay calm and slowly back away or place boat engines in neutral. When closer encounters occur, do not make sudden moves or obstruct the travel path of the animals - let them have the unhindered "right of way."

Stay away from wildlife that appears abandoned or sick. Some marine animals such as seals leave the water or are exposed at low tide as part of their natural life cycle -- there may be nothing wrong with them. Young animals that appear to be orphaned may

<sup>&</sup>lt;sup>1</sup> These guidelines are taken from NOAA's National Marine Fisheries Service website: http://www.fpir.noaa.gov/PRD/prd\_laws\_policies\_guidelines1.html Page 1 of 2

actually be under the watchful eye of a nearby parent. An animal that is sick or injured is already vulnerable and may be more likely to bite. If you think an animal is in trouble, do not attempt to approach or assist the animal and contact the local authorities for advice.

Never touch, handle or ride marine wildlife. Touching wildlife, or attempting to do so, can injure the animal, put you at risk and may also be illegal for certain species. The slimy coating on fish and many marine invertebrates protects the animal from infection and is easily rubbed off with a hand, glove or foot. Avoid using gloves when diving or snorkeling to minimize the temptation to touch. Remember, wild animals may bite, body slam or even pull you underwater if startled or threatened.

Do not feed or attract marine wildlife. Feeding or attempting to attract wildlife with food, decoys, sound or light disrupts normal feeding cycles, may cause sickness or death from unnatural or contaminated food items, and habituates animals to people. Habituated animals are vulnerable to vessel strikes or vandalism, and can be dangerous to people.

Never chase or harass wildlife. Following a wild animal that is trying to escape is dangerous. Never completely surround the animal, trap an animal between a vessel and shore, block its escape route, or come between mother and young. When viewing from a boat, operate at slow speed, move parallel to the swimming animals, and avoid approaching head-on or from behind, and separating individuals from a group. If you are operating a non-motorized vessel, emit periodic noise to make wildlife aware of your presence and avoid surprise.

Help others to become responsible wildlife watchers. Speak up if you notice other viewers behaving in a way that disturbs the wildlife or other viewers, or impacts sensitive habitats. Be friendly, respectful and discrete when approaching others. When operating a boat, lead by example and reduce your speed in areas frequented by marine wildlife, anchor properly and encourage others to do the same. Violations of the law should be reported to local authorities.

# Information on reporting an injured, stranded (beached), entangled whale, or dead or dolphin:

*Please call:* Marine Mammal Health & Response Program Manager David Schofield at 808 721-5343 (available 24/7)

# Information on reporting injured, entangled, or dead Hawaiian Monk Seal:

Please call: HMSRP veterinarian Michelle Barbieri (443) 834-8612 (available 24/7)

# Information on reporting stranded, entangled, or injured sea turtles:

*Please call*: Oahu Sea Turtle Stranding Telephone: (808) 725-5730 (available 7am – 4pm M-F), or visit the NOAA Fisheries website for all call-in information by island at <u>http://www.pifsc.noaa.gov/marine\_turtle/strandings.php</u>

# DISEASE AND INTRODUCED SPECIES PREVENTION PROTOCOL FOR PERMITTED ACTIVITIES IN THE MARINE ENVIRONMENT

# Papahānaumokuākea Marine National Monument<sup>1</sup>

#### I. <u>Equipment and Dive Gear Disinfection</u>

Equipment and gear is treated according to three levels that correspond to the potential for the spread of disease and/or introduced species.

General points applicable to all the levels and acceptable disinfection solutions are listed in part D.

# A. Level One: Equipment in direct contact with diseased coral tissue or other diseased organisms.

- <u>Equipment</u>: includes gloves, chisels, forceps, drill bits, shears, clippers, and spear tips, etc.
- <u>Multiple sets of equipment</u>: Use a disinfected set of equipment for diseased organisms and another disinfected set of equipment for non-diseased organisms at each dive site.
- <u>Disinfect between uses</u>: Use a disinfected set of equipment at each dive site.
- <u>Disinfection method</u>: 1) Remove any organic matter from the equipment. 2) Soak equipment for a minimum often minutes in a 1:32 dilution of commercial bleach in freshwater (1/2 cup bleach per gallon of freshwater), yielding a 1000 ppm dilution of sodium hypochlorite, or 3% free chlorine solution.
- <u>Secure all samples</u>: Seal all samples in bags or jars under water and place sample bags and jars in secure holding container.

# **B.** Level Two: Benthic equipment not used to sample diseased coral tissue or other diseased organisms

- <u>Benthic equipment</u>: includes equipment that may contact the benthos such as reels, tape measures, goodie bags, transect lines, etc.
- <u>Disinfect between sites</u>: Use a disinfected set of equipment at each dive site.
- <u>Disinfect equipment</u>: 1) Remove any organic matter from the equipment. 2) Soak and or wipe equipment as specified for equipment type, below. See list of acceptable disinfection solutions in part D.

1. Non-porous equipment must be wiped and/or soaked. If wiping, use wipes in which the active ingredient is a quaternary ammonium compound

<sup>&</sup>lt;sup>1</sup> This protocol and a companion document, "Disease and Introduced Species Prevention Protocol for Permitted Activities in the Marine Environment of the Papahānaumokuākea Marine National Monument Explanation," were accepted at the April 9, 2007 Monument Management Board Meeting.

(QAC). Acceptable wipes include Clorox® wipes or Lysol® wipes. If soaking, soak for a minimum often minutes in an acceptable disinfectant solution.

2. <u>Porous equipment</u> must be soaked for a minimum often minutes in an acceptable disinfectant solution.

# C. Level Three: All dive gear used in the Monument

- <u>Dive gear includes</u> any wetsuit, mask, fin, snorkel, BC, regulator, weight belt, booties, etc.
- <u>Disinfect dive gear daily (if used)</u>: 1) Remove any organic matter. 2) Disinfect by submerging for a minimum often minutes in an acceptable disinfection solution, followed by a thorough fresh water rinse, and hanging to dry.
- <u>Rinse after disinfection</u>: Rinse all gear in close proximity to the face or skin, e.g. masks, regulators, gloves, etc. with potable water following disinfection.

# **D.** General points applicable to all three levels

- <u>Disinfect any equipment and gear at least daily if used</u>. Also, only disinfected equipment and gear may be transported either direction between the Monument and the main Hawaiian islands or other point of origin/destination.
- <u>Dispose of organic matter, used disinfection solution, and rinse</u> according to the ship's solid waste disposal or other approved secure holding system.
- <u>Acceptable Disinfection Solutions:</u>

1. <u>Levels One, Two, and Three</u>: a 1 :32 dilution of commercial bleach in freshwater (1/2 cup bleach per gallon of freshwater), yielding a 1000 ppm dilution of sodium hypochlorite, or 3% free chlorine solution; and

2. <u>Levels Two and Three</u>: For dive gear and level two equipment, the manufacturer's recommended disinfection strength dilution ofQACs in "soft" (low concentration of calcium or magnesium ions) fresh water. An example of an acceptable QAC solution is Lysol® All Purpose Cleaner in a 6.6% Lysol in water dilution.

• <u>Rinse after disinfection</u>: All gear in close proximity to the face or skin, e.g. masks, regulators, gloves, should be rinsed with potable water following disinfection.

# II. <u>Cleaning Tender Vessels</u>

• <u>At least daily if tender vessel if used, inspect for and remove</u> for any algal fragments or other organisms (dispose of organic matter and used solution according to the ship's solid waste disposal or other approved secure holding system).

- <u>Rinse tender vessel internal and external</u> surfaces with fresh water between islands, including during transits in either direction between the Monument and the main Hawaiian islands or other point of origin/destination.
- <u>Allow tender vessel to dry</u> before redeployment.

#### III. <u>Disinfection of Shipboard Wet Laboratory</u>

- <u>At least daily if used, disinfect entire laboratory</u>, including sinks, countertops, walls, doors, and floors.
- Acceptable Disinfection Solutions and Wipes:

1. a 1:32 dilution of commercial bleach in freshwater (1/2 cup bleach per gallon of freshwater), yielding a 1000 ppm dilution of sodium hypochlorite, or 3% free chlorine solution;

2. the manufacturer's recommended disinfection strength dilution of QACs in "soft" (low concentration of calcium or magnesium ions) fresh water. An example of an acceptable QAC solution is Lysol® All Purpose Cleaner in a 6.6% Lysol in water dilution. Also, commercially available wipes containing QACs (e.g. Clorox® wipes, Lysol® wipes) are acceptable; and

3. 70-80% ethanol.

- <u>Dispose of all materials</u> generated during cleaning according to the ship's solid disposal or other secure holding system.
- <u>The laboratory must be clean between islands</u>, including during transits in either direction between the Monument and the main Hawaiian islands.

#### PRECAUTIONS FOR MINIMIZING HUMAN IMPACTS ON ENDANGERED LAND BIRDS

#### Papahānaumokuākea Marine National Monument

The Nihoa finch (*Telespiza ultima*), Nihoa millerbird (*Acrocephalus remota*), and Laysan finch (*Telespyza cantans*) are inquisitive birds that constantly inspect and probe their environment while foraging. While this probably benefits them in their natural environment, it can be problematic when humans bring in equipment or set up encampments. Things that we normally would not think of as hazards to wildlife become sources of finch or millerbird mortality (usually by drowning, entanglement, and entrapment). In order to avoid the unintentional killing of these endangered species, it is imperative that visitors to Nihoa, Laysan, and Pearl and Hermes Atoll be aware of the different hazards that humans pose to passerine birds. The guidelines below derive from documented mortalities and will help you "bird-proof" your operation, but additional hazards exist, so use common sense at all times.

- 1. The burn barrel must be attended **at all times** when burning trash; be vigilant. When not burning, any vents or rust-eaten holes in the barrel or lid must be covered (e.g., with rocks).
- 2. Buckets must always be overturned so that they won't collect rainwater.
- 3. Laundry buckets must have lids on them while laundry is soaking.
- 4. Water-filled buckets for dishwashing (or any other chore) must always be attended.
- 5. Desalinator garbage cans should have netting placed between the can and the lid. Make sure the lids close properly; faulty positioning of hoses can interfere with proper closure.
- 6. Tarps (e.g., those covering propane, etc.) must be tucked in tightly so that they don't collect rainwater.
- 7. Fabric with loose threads should be burned; little feet can become entangled when fabric is hung out to dry. Cut loose threads off tents and tarps.
- 8. Anything with small mesh (e.g., bird nets or insect nets) should be put away to avoid foot entanglement.
- 9. Water jugs should be aligned with ample space between rows so that finches won't get trapped. Always keep jugs capped.
- 10. For stability reasons, buckets should not be stacked more than two high. Keep an eye out for leaning buckets or water jugs, and level the sand beneath them if necessary.
- 11. Tents should be zipped at all times (day and night) so that finches and millerbirds cannot enter.
- 12. Finches and millerbirds should be discouraged from eating people-food so as not to augment the camp population any more than it is already. Dependency by the finches on the camp will result in suffering when temporary and more-permanent field camps dissolve.

### Papahānaumokuākea Marine National Monument

# **Trip Authorization**

All boat trips, including the use of non-FWS vessels, must be authorized by the resident refuge manager before leaving Tern Island or entering French Frigate Shoals. Information must be provided on the trip objectives, the destination(s), and approximate time of return. The resident refuge manager may withhold permission for a boat to leave Tern Island or operate within the refuge boundary if in his/her opinion, the seas are too rough, the weather is inclement, the equipment is in questionable condition, or the operator lacks the experience to cope with prevailing conditions.

## **Boat Operators and Passengers**

All boat operators are required to have completed a Boat Safety Course for use of boats at French Frigate Shoals. FWS Employees must have official DOI boat training certification. Operators must be experienced in handling small craft around coral heads and choppy seas and be familiar with outboard engine operation and repair. If the resident refuge manager is not familiar with their abilities, he/she may request a demonstration ride or other means for skills verification. All persons involved in boating operations must be able to swim. The operator is responsible for seeing that all boat use policy requirements are met. Any kind of unsafe boat operation (violation of boating policy, reckless driving, excessive speed, etc.) will be cause for the resident refuge manager to revoke that person's right to operate boats at French Frigate Shoals. Everyone in the boat must have his/her life jacket on at all times! Each person that is to operate boats at French Frigate Shoals will be required to read and sign the Tern Island copy of the Boat Use Policy to verify that he/she has read and understood it.

#### **Boats and Equipment**

All boats going on solo trips are required to have two motors in working condition. Both motors must be tested before leaving the dock area and must be attached to the boat by a safety chain or rope unless bolted to the hull. Boats must have standard safety equipment on board including a life preserver for each person (diving buoyancy compensators and wet suits are not adequate), a bow anchor with at least 120 feet of line (and a similarly equipped stern anchor, if landing on another islet), paddles or oars, an emergency tool kit, a first-aid kit, an emergency locating transmitter (EPIRB), an emergency strobe light, and handheld radios.

A second boat with two motors in good working condition will either travel with the other boat(s) or be ready for immediate use at Tern Island should an emergency arise and rescue be required.

# **Radio Procedure**

All boats launched from Tern Island must be equipped with two operational radios. An exception to this rule is when several boats are being used to offload vessels. Since all boats will be in visual contact with other boats, Tern Island, or the offloading vessel, only one radio is required.

Check with the resident refuge manager for the radio frequencies being used. Radios must be tested before leaving the dock area. It is the responsibility of the boat operator to make sure that radios are properly charged prior to any trip (check with the resident refuge manager for proper charging procedures).

Boats must contact Tern Island when they leave a location and when they reach their destination. Arrangements must be made prior to a boat trip to have someone monitoring the radios at Tern Island within 15 minutes after arrival at a destination, or of the time of a prearranged radio call. If contact is not made the boat must immediately return to Tern Island. If radio contact is made while returning to Tern Island the trip can be resumed. If Tern Island does not hear from a boat 1 hour past the expected arrival or prearranged radio call, the backup boat will be launched and a search will commence.

Previous FFS Boating Policy required a rescue boat to be launched 1 hour after any boat is overdue for radio check in. This remains unchanged except that in the late afternoon all boat operators must check in prior to the Departure Guidelines listed below. If a boat has not checked in by the listed guideline, a rescue boat will be launched immediately and sent to the last known location of the missing boat.

#### **Departure Guidelines**

All boating activities must be limited to a period between half an hour after sunrise and 1 1/2 hours before sunset. If you change your original route for any reason during the day, contact the resident refuge manager by radio on Channel 16. To allow reasonable amount of time to perform search and rescue, boats must depart the following areas before sunset as stated: Disappearing Island 5 hours, the Gins 2 hr 15 min; East Island 2 hours; Shark, Trig, and Round Islands 1 hr 50 min.

#### **General Rules**

No boats may be launched if the wind speed exceeds 20 knots or if seas are deemed exceedingly rough by the resident refuge manager. Approach to within one-half mile of any islet not specifically mentioned on Monument Permits is prohibited, except in emergency situations or unless permission is otherwise obtained in advance from the resident refuge manager. At least two people must be aboard a boat at all times unless pre-approved by the resident refuge manager.

#### **RESERVATION REQUIREMENTS FOR MIDWAY FLIGHTS, LODGING, AND MEALS**

#### Papahānaumokuākea Marine National Monument

For travel to Midway Atoll National Wildlife Refuge, reservations for transport via U.S. Fish and Wildlife Service (FWS) contracted aircraft require a request 60 days prior to intended arrival dates. A request does not guarantee a flight due to space limitations in the lodging facility and on the aircraft.

Requests should be sent or phoned to the Midway Refuge Manager via the contact information below. Copies of passports need to be sent to Midway via fax or scanned copy for verification a minimum of three days prior to scheduled travel. Maximum baggage allowance is fifty (50) pounds per person. Please use the attached reservation form (one per person). Enclosed is the current fee schedule for activities on Midway.

Point of Contact:

Sue Schulmeister Refuge Manager U.S. Fish & Wildlife Service Midway Atoll National Wildlife Refuge 1082 Makepono St. Honolulu, HI 96819 Sue\_Schulmeister@fws.gov 808-954-4818 office (Note time difference - 11hr UTC) fax1: 808-772-5311 fax2: 808-674-1967

MIDWAY RESERVATION FORM (ONE PER PERSON)Travel Dates:Date to MidwayDate from MidwayPassenger Information:First Name (As it appears on passport)Last Name (As it appears on passport)Middle Name (As it appears on passport)Billing Address (Street or PO Box)CityStateZipHome PhoneWork or Cell PhoneE-mail AddressCompany or AffiliationDate of BirthBody Weight
Date to MidwayDate from MidwayPassenger Information:First Name (As it appears on passport)Last Name (As it appears on passport)Middle Name (As it appears on passport)Middle Name (As it appears on passport)Billing Address (Street or PO Box)CityStateZipHome PhoneWork or Cell PhoneE-mail AddressCompany or AffiliationDate of BirthBody Weight
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E-mail AddressCompany or AffiliationDate of BirthBody Weight
Company or Affiliation       Date of Birth       Body Weight
Date of Birth Body Weight
Body Weight
Passport Information:
Passport Country
Passport Number
Passport Expiration
Non-US Citizen Information:
Travel Visa Number
Travel Visa Expiration
Permanent Resident Card Number
Are you part of the Visa Waiver Program?
Address while in Honolulu
(foreign passports only):
Luggage Information:
Number of Bags
Total Baggage Weight (50 lb max per
passenger)
Emergency Contact Information:
Emergency Contact Name
Emergency Contact Phone
Emergency Contact E-mail
Emergency Contact Relationship
Billeting & Transportation Information:
Will you need a hotel room?
Would you like a single room or double
room?
If in a double room, name of person
sharing?
Will you need a bicycle rental?
Please list any special accommodation requests.
USFWS Approval Signature
Chugach Signature (CII Employees)
Date Inputted

# Midway Atoll National Wildlife Refuge Fee Schedule - Effective September 1, 2012

Aircraft Services Fees	
Aircraft Landing and Handling Fees	
Attended hours of operation (Mon-Fri, 8a-5p)	\$500
Unattended hours of operation (all other)	\$1,000
Parking/Ramp Fees	
0<12,500 lbs. MGLW	\$200/day
12,500<60,000 lbs. MGLW	\$300/day
Over 60,000 lbs. MGLW	\$400/day
Aircraft Fuel (JP-5)	\$15/gallon
Air Stairs	\$50/hour
Ground Power Unit	\$50/hour
Port Services Fees	
Port Entrance Fee (+60 feet)	\$400/visit
Mooring Fee	\$2/foot/day
Non-potable water (per 1000 gallons)	\$100
Potable water (per 5 gallons)	\$1
Electrical Power	\$50/day
Fuel (diesel)	\$15/gallon
Fuel (gasoline)	\$15/gallon
USFWS required boom deployment	\$750
Boat Launching/Removal	\$150
Cargo on ship to Midway	\$3/lb.
Chartered Aircraft Transporting Fees	
Round trip seat (Honolulu/Midway)*	\$2,500
Cargo	\$11/lb.
Curgo	ψ11/10.
Visitor Service Fees	
Entrance Fee	\$5/day
Visitor Fee	\$55/day
Lodging	\$125/night/room
Meals	\$54/day
Transportation	
Bicycle Rental	\$5/day
Individual/Family Golf Cart Rental	\$25/day
Group Capacity Golf Cart Rental	\$35/day
	\$20 per
Boat Transport - Snorkel Trip	person/half day
Boat Transport - Eastern Island	\$300/trip
Medevac Services**	L
Boat Transport	\$500/trip
Recreational Equipment	<b>r</b>
Snorkel Equipment Rental	
Snorkel Edulpment Rental	\$25/week

\*\* Fee Schedule for Medical Clinic visits/use available from Medical Provider upon request.

# **Labor and Equipment Fees**

## **Equipment (price excludes labor cost of operator but includes fuel)**

Backhoe	\$600/day \$100/hour
Skid Steer	\$300/day \$50/hour
Loader	\$800/day \$150/hour
Excavator	\$1800/day \$400/hour
Bulldozer	\$1200/day \$250/hour
	•
Dump Truck	\$400/day \$75/hour
Tractor/Brush Hog	\$250/day \$50/hour
Crane 60K	\$1800/day \$400/hour
Forklift 4K	\$300/day \$50/hour
Forklift 10K	\$350/day \$60/hour
Forklift 12K	\$400/day \$75/hour
Telehandler	\$400/day \$75/hour
Man-Lift	\$400/day \$75/hour
Re-fueler Truck	\$200/trip
Flat Bed 5-ton Truck	\$250/day \$50/hour
Compact Pick-up Truck	\$200/day \$35/hour
Low-bow Tractor Truck	\$800/day \$150/hour
Mini Tiger Truck	\$150/day \$25/hour
Vacuum Truck	\$500/day \$100/hour
Ambulance	\$300/day \$50/hour
show	

#### Labor

Skilled Laborer Laborer/Equipment Operator \$60/hour \$25/hour

Revised August 29, 2012

#### Nonnative Species Inspection Requirements at Midway Atoll

#### Papahānaumokuākea Marine National Monument

#### **Background:**

Midway Atoll National Wildlife Refuge as part of Papahānaumokuākea Marine National Monument is a unique ecosystem. Nonnative species accidentally or purposely transported to Midway in cargo, luggage, or on clothing could have devastating effects to the native plants and animals found here and cost the Refuge millions of dollars to eradicate. For this reason, the transportation of soil, seeds, plants, insects, or animals to Midway is not allowed unless permitted.

#### **Requirements:**

Please insure that all cargo, luggage, clothing, and shoes are clean and do not contain any of these items. In addition, the following protocol should be followed:

- Scrub the bottoms of shoes with a brush and soapy water.
- Unlace shoes to make sure no seeds are trapped.
- Check socks carefully for trapped seeds.
- Turn backpack inside out to remove all seeds and wash it.
- Check the bottom of suitcase for seeds.
- Check binocular straps for seeds.

Note: If you work on a farm or have visited a farm, do not bring the same clothing and/or shoes to Midway that were worn on the farm.

Additional vessel requirements: Passengers arriving by vessel are required to clean their footwear before coming ashore. Sailboats are inspected by FWS staff upon arrival and before docking to ensure they are rat free. In addition, all permitted vessels must have their hulls inspected and cleaned when required, including the visual inspection of anchors and tender vessels. Proclamation 8031 prohibits the release of ballast water within the Special Management Area. All vessels require a Monument permit for Midway Atoll as part of Papahānaumokuākea Marine National Monument.

#### **Inspections:**

You and your personal items may be inspected before boarding the aircraft to Midway. If any of your gear may contain nonnative soil, seeds, plants, insects, animals or spores, buy new gear. An inspection may be conducted both before departure from Honolulu and before departure from Midway. In addition, visitors going to Eastern Island will be asked to check their gear for mice before departure to prevent accidental introductions. Prior to returning to Sand Island, they will be asked to clean their shoes, clothing, and gear to prevent spread of the invasive black mustard onto Sand Island.

#### **Point of Contact:**

Please contact john\_klavitter@fws.gov (808-954-4817) with any questions.

## BEST MANAGEMENT PRACTICES FOR ACTIVITIES ON NIHOA

Papahānaumokuākea Marine National Monument

#### I. Introduction

Nihoa, the first island in the Papahānaumokuākea Marine National Monument (Monument), is located approximately 155 miles (249.4 kilometers) northwest of Kaua'i, and is closest to the main Hawaiian Islands. Measuring roughly 170 acres (0.68 square kilometers), this island is the largest emergent volcanic island within the Monument and the tallest, reaching an elevation of 903 feet (275.2 meters) at Miller Peak. The shoreline is residence to a small but likely growing population of endangered Hawaiian monk seals. Nihoa's seabird colony boasts one of the largest populations of Tristam's storm-petrel, Bulwer's petrel, and blue noddies in the Hawaiian Islands, and possibly the world. The avifauna of the island also includes two endemic passerine birds, the Nihoa finch (*Telespiza ultima*) and the Nihoa Millerbird (*Acrocephalus familiaris kingi*), in addition to Hawaiian monk seals, both are listed as endangered under the federal Endangered Species Act (ESA) and Hawaii Revised Statutes (HRS 195D).

The island also supports 21 native plant species, including three endemics: a palm, or loulu, (*Pritchardia remota*), and amaranth (*Amaranthus brownii*), and an herb (*Schiedea verticillata*) (Wagner et al. 1999). Nihoa also has a rich cultural heritage, with at least 88 known wahi kūpuna (ancestral sites) constructed by pre-contact Hawaiians, who inhabited the island for 700 years (until 1700 A.D.), and is listed on the National Register of Historic Places.

#### II. <u>Permit application guidelines and person-use days</u>

This document provides guidelines for conducting activities on Nihoa and living in Nihoa's remote, sensitive environment. In addition, Proclamation 8031 requires a Monument permit for all activities conducted within the Northwestern Hawaiian Islands (NWHI). All permit applications, which include the number of personnel participating and the purpose and objectives of proposed activities, are reviewed and approved by the Monument Management Board (MMB). In the permit application, trip length and the number of personnel on island should be restricted to the minimal number possible to accomplish the proposed objectives stated in the permit application, in order to reduce disturbance<sup>1</sup> to the biological and cultural resources.

Following are guidelines and limits on the number of person-use days for Nihoa:

- Person-use days are a measure of use of one individual for one day at a site.
  - Example: five (5) authorized personnel staying for three (3) nights = 15 total person-use days.

<sup>&</sup>lt;sup>1</sup> For the purposes of this document, "disturbance" shares the definition for "harassment" found in the Marine Mammal Protection Act (16 U.S.C. 1362 et. Seq. (1972, as amended)): "The term 'harassment' means any act of pursuit, torment, or annoyance which – (i) has the potential to injure a marine mammal or marine mammal stock in the wild; or (ii) has the potential to disturb, a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering." (16 U.S.C. 1362(18)(A))

- Overnight trips should be limited to five (5) personnel (the maximum allowed to camp on island) and duration of less than one week (maximum 35 person-use days).
- Person-use days shall not exceed 100 person-use days<sup>2</sup> per trip with the following conditions:
  - No more than five (5) personnel authorized to camp overnight on island
  - No more than fourteen (14) personnel authorized to be on island at any one time
- Personnel working on Nihoa during the day in excess of the five (5) authorized to camp overnight must be off-island before sunset and sleep aboard a permitted vessel.
  - Example: Fourteen (14) personnel are permitted for a maximum trip duration of seven (7) days. Nine (9) personnel stay off-island overnight and five (5) may camp on-island overnight
- The total number of person-use days shall not exceed 300 per year for all activities<sup>3</sup>.
- Permittees should have their activities occur between August and October, when the fewest seabird eggs and small chicks are present; vegetation is at its annual minimum, making cultural sites more visible and easier to avoid; and not during the average peak monk seal breeding period.

# Additional protective measures while working on Nihoa

In addition to limiting the number of person-use days and number of personnel authorized to work on island, following is a list of additional measures to reduce adverse effects to cultural and historic properties, and biological resources:

#### III. Permits, quarantine, and movement on island

- a. All personnel shall read their Monument permit and sign, acknowledging they have read and understand the permit and respective general and special conditions.
- b. All goods brought to Nihoa shall meet the quarantine standards set forth in the *Monument Special Conditions and Rules for Moving between Islands / Atolls and Packing for Field Camps* (PMNM BMP # 007, June 2007).
- c. Personnel shall remove all equipment, supplies, and solid human waste from the island at the conclusion of the trip.

<sup>&</sup>lt;sup>2</sup> The 100 person-use day limit will allow for recovery time for the ecological resources on Nihoa and allow multiple projects to occur on the island per year.

<sup>&</sup>lt;sup>3</sup> Three hundred person-use days is based on impacts observed in the past by researchers working for extended periods of time (120 person-use days) on Nihoa Island. Based on past observations, biological damage to the island becomes significant after 120 person-use days.

- d. Access to areas of the island by personnel beyond the campsite and landing shall be limited to periods when surveys, other data collection, and refuge management activities are necessary.
- e. Personnel shall combine field activities whenever possible to minimize the number of times a specific area is visited.

#### IV. Protection of cultural sites

- a. A qualified cultural liaison<sup>4</sup> shall be invited to participate on each trip to provide guidance regarding access, cultural protocols, and protective measures for areas that may be affected by the activities of the undertaking.
- b. Personnel shall be encouraged to participate in Hawaiian protocol as deemed appropriate by the cultural liaison.
- c. Personnel shall not displace, move, remove, dig, collect or otherwise disturb cultural sites, rocks, artifacts, or other materials. If personnel observe a cultural resource that needs attention, they shall leave it in place, map its location, describe its appearance, photograph it, and file a report with the FWS Superintendent for the Monument.
- d. Personnel shall be informed of the location of archaeological and cultural sites and provided with maps so that these sites can be avoided to the extent possible during fieldwork (some activities may require access to such sites). (Figure 1).

#### V. Protection of biological resources

- a. All personnel shall follow guidelines set forth in the *FWS Biological Opinion for Hawaiian Islands National Wildlife Refuge – Prudent and Reasonable Measures* (Attachment 1.)
- b. All personnel shall be trained by a person designated by the FWS Superintendent for the Monument, who has previous experience at Nihoa on minimizing impacts to nesting seabirds while navigating through bird colonies. This training shall include a walk on Nihoa with the trainer to become familiar with safest routes and appropriate wildlife avoidance behavior including learning ways to safely traverse areas with high burrow density and avoiding species particularly sensitive to human disturbance. This training shall also include a briefing on minimizing disturbance to monk seals during on-island activities. At a minimum, each group on the island must have at least one trained person within the group, including smaller groups that break off from a larger group while on-island.

<sup>&</sup>lt;sup>4</sup> A qualified cultural liaison is a person designated by Co-Managers based upon the recommendations of the Office of Hawaiian Affairs and the Papahānaumokuākea Native Hawaiian Cultural Working Group.

- c. Personnel landing on the island shall attempt to land in an area that will minimize disturbing any resting seals. Due to safety concerns, landing locations may be limited, resulting in an unintended disturbance. If this occurs, the disturbance should be noted and reported for recordkeeping upon returning to Honolulu.
- d. Personnel traversing the shoreline shall do so only if it can be done without disturbance to monk seals, in particular mother-pup pairs. The most sensitive area for seals is the only sandy beach on the island. Between April and October, it is likely that there will be seal mothers with pups on the beach. However, throughout the rest of the year, animals in this area are prone to disturbance by human activities because the beach is shorter and narrower. Seals often haul out on the rock platform immediately adjacent to the beach to the east. The beach shall not be used as access to West Palm Valley when seals are present.
- e. Personnel moving across the island shall use streambeds, ridgelines, and other exposed bedrock surfaces as much as possible to avoid archaeological sites and nesting birds.
- f. Where travel though vegetation is required, personnel shall walk single file and strive to step where the ground surface is visible, and not obscured by vegetation, so as to ensure it is not occupied by a nest.
- g. When maintaining or repairing the National Wildlife Refuge sign, personnel shall not dig new post holes, disturb the ground, or enlarge the superstructure beyond its present size. Paint shall be applied in a manner that prevents splashing, spilling, or spattering on any other surfaces.

#### VI. <u>Human health and safety</u>

- a. Nihoa is an extremely steep island, and many areas are subject to rock fall. Tents should never be sited directly adjacent to cliffs, and great care should be taken when walking beneath the cliffs. The rock is ancient, extremely fragile, and breakable, so all footholds and handholds should be tested before weight is placed on any rock. Experts in climbing and rappelling have visited Nihoa and deemed it to be too dangerous for rope work.
- b. The ocean land interface at Nihoa is also extremely dangerous. If personnel are swept off the lava bench into the water, rescue would be unlikely. When working or bathing in the intertidal area, personnel should always face the oncoming waves and have an escape route to higher ground planned.
- c. The main camp area in the Miller Valley wash (Figure 2) runs full of water during heavy rainfall, and can easily wash away equipment and supplies with little warning; therefore all camping gear should be stowed above the level of the creek bottom.

#### VII. Emergency and law enforcement activities

a. These BMPs do not apply to activities necessary to respond to emergencies threatening life, property, or the environment, or to activities necessary for law enforcement purposes. (50 CFR 404.8 (2006)).

## Additional protective measures while camping and working

#### VIII. Tents and movement around site Nh-20

- a. Personnel shall not move, shape, or alter the surface of site Nh-20. Tent stakes shall only be used where they can be inserted into the ground without digging up the soil or moving rocks. Personnel shall photograph the tent area before, during, and after tent set up. Personnel shall avoid bird nests when erecting tents. All nest failures that can be attributed to human disturbance shall be documented and included in the final trip report. In addition, personnel shall adhere to whatever additional instructions are provided by archaeologists, cultural liaisons, and biologists through the Monument Management Board.
- b. The use of backpacker-style "pup" tents or similarly staked structures shall be reduced in favor of cots or "tent cots" to reduce or eliminate the need to stake and/or cover the ground, which smothers vegetation and disturbs soil and rocks.
- c. Only sleeping and management of personal effects shall occur at site Nh-20. Other campsite (Figure 1) activities including work, cooking, eating, and personal hygiene shall occur in the Miller Valley wash, outside of the boundaries of Nh-20. The south edge of site Nh-20 is characterized by a Native Hawaiian constructed, stone retaining wall on a rocky cliff that drops into the Pacific Ocean. The wall features a standing stone (upright) and associated coral offerings. All personnel shall avoid disturbing the wall and upright. All tenting, cots, and any other activities shall stay back two (2) meters from the south edge of site Nh-20 and avoid the wall, upright, and associated elements.
- d. The terraced area of Nh-20 is occupied by Sooty Terns in high densities during the breeding season. If activities will be conducted during Sooty Tern breeding season, campers should choose an alternate site in the wash to deploy their tent cots.

#### IX. Safeguards to minimize accidental drowning of land birds

- a. Buckets shall always be overturned so that they cannot collect rainwater.
- b. Laundry buckets must have lids while laundry is soaking.
- c. Buckets, bowls, and any other vessels (large enough to hold a small bird) containing water for dish washing or any other purpose shall always be attended or covered securely.

- d. Tarps (e.g., those covering propane) shall be tucked in tightly so that they cannot collect rainwater.
- X. Safeguards to minimize accidental bird entanglement
  - a. Loose threads on fabric shall be burned to minimize the risk of entanglement. Birds' feet can become entangled when fabric is hung out to dry.
  - b. Loose threads shall be cut off tents and tarps.
  - c. Anything with small mesh (e.g., mist nets) shall be stored in closed Ziploc bags to avoid entanglement.
  - d. Tent doors shall be kept closed at all times (day and night) to preclude entry by birds.

#### XI. Safeguards to minimize impacts from general camping and maintenance activities

- a. Camp supplies and water jugs shall be aligned with ample space between rows so that small birds cannot become entrapped.
- b. Storage jugs shall always be capped.
- c. For stability reasons, buckets shall not be stacked more than two high. Personnel shall watch for leaning buckets or water jugs and level the surface beneath leaning buckets, if necessary.
- d. Birds shall not be fed or allowed access to human food, because dependency on the camp food by these birds may result in adverse impacts to them during or after camping periods.
- e. To prevent nesting in undesirable locations, camp gear shall be checked daily during nesting seasons for signs that birds are building nests on or under gear. If it is determined nest building has begun, the nest site should be modified to prevent nest completion.
- f. Refuge personnel and permitted personnel under the Co-Trustee permit (permittee) are authorized to remove from tents; other structures; or objects any birds that enter or become entangled in them to minimize the further risks of injury and death if not removed quickly.

# Protective measures when undertaking specific survey and habitat restoration work

#### XII. Safeguards to avoid impacting birds

- g. Personnel shall identify, avoid, and not disturb endangered birds.
- h. During the nesting seasons, personnel shall only conduct activities in areas once they have surveyed and not found a nest or nesting birds.
- i. A minimum buffer of 33 ft. (10 m) shall be observed for nests and individual birds.
- j. Personnel shall walk slowly and always watch where they are walking. In addition, extra caution shall be taken around caves, crevices, and eroded pockets where Nihoa finch may be nesting.
- k. In addition to visually checking bushes for nests and adults, personnel shall also listen for the cheeping of nestlings prior to disturbing vegetation.

#### XIII. Protective measures to avoid impacting monk seals

- a. Personnel shall perform a visual survey of the area before proceeding and maintain constant vigilance for seals while traversing the area.
- b. Personnel shall keep a minimum distance of 150 feet from individual adult monk seals, and a minimum of 300 feet from mother and pup pairs.
- c. Personnel shall move slowly and use rocks for cover or try to stay close to the cliff face; monk seals are more likely to be disturbed if they see a person's profile against an open sky.
- d. Personnel shall minimize communication, and speak quietly if communication is necessary.
- e. If a seal wakes up, personnel shall remain still and keep a low physical profile. If the seal is watching the person, he or she shall stay still until it closes its eyes or turns away. If there is a stand off, move away from the seal back in the direction you came, or to the closest point of coverage.
- f. If personnel is not behind cover, do not stop to take photos if there is a potential for disturbance.

*NOTE:* These safeguards are for personnel permitted to remove invasive plants from Nihoa. They do not automatically authorize removal of invasive plants for all personnel accessing Nihoa.

# <u>Protective measures when removing invasive plants via mechanical and</u> <u>chemical means</u>

## I. <u>Safeguards for removing Indian marsh fleabane mechanically</u>

- a. Targeted plants shall be identified and plots treated and maintained according to Pesticide Use Protocol R1-10-12538-002.
- b. Prior to cutting, the bushes shall be checked for nesting birds (in bush or on grass around bush) to avoid disturbing a nest and incurring take of un-hatched eggs or nestlings. Laysan finches are known to forage, roost, and nest in Indian marsh fleabane; millerbirds are anticipated to do so once they have been moved to Laysan. Finches and millerbirds are least likely to be nesting in winter, so removal shall occur then to the maximum extent practicable.
- c. If removal must occur at a time other than winter, personnel shall only treat areas of Indian marsh fleabane that are open enough to allow biologists to visually and audibly check for the presence of nests and birds.
- d. If a nest is found in vegetation, its removal within a 66 ft. (20 m) radius of the nest shall be delayed until it is determined that the nest is no longer being used.
- e. Prior to cutting, all treatment plots shall also be checked for endangered plants. If an endangered plant is in a treatment plot, plants targeted for removal within 10 feet (3 m) shall be pulled by hand to avoid affecting the endangered plant. Furthermore, a buffer of at least 10 ft. (3 m) shall be used for Garlon® application.
- f. After Indian marsh fleabane is cut, Garlon® solution (with Turfmark®, a blue dye added so that sprayed stumps can be detected) shall be applied using sponges and sprayers to mark sprayed stumps.
- g. Cut branches shall be placed in piles. Care shall be taken not to cover any seabird burrow entrances and not to stack branches next to Indian marsh fleabane bushes that have nesting birds in them.

Note: FWS anticipates that brush piles will be great foraging habitat for millerbirds because they will be extremely dense and full of invertebrates, especially once they are grown over by *Sicyos* sp., a native vine. Millerbirds may even nest in the piles while they last, so consideration must be taken when siting brush piles.

#### II. Safeguards for removing Indian dropseed and Bermuda grass using Aquamaster<sup>TM</sup>

- a. Targeted plants shall be identified and plots treated and maintained according to Pesticide Use Protocol R1-09-12538-001. This protocol also directs disposal of unused solution, which is not in the soil, on native plants, or near endangered species.
- b. If a nest is found in vegetation, its removal within a 66 ft. (20 m) radius of the nest shall be delayed until it is determined that the nest is no longer being used.
- c. When seeds are found during nest searches they shall be removed before herbicide treatment to minimize exposure risk because either the Laysan finch or Laysan duck may forage on the seeds of Indian dropseed or Bermuda grass.
- d. Prior to applying herbicide, all treatment plots shall be checked for endangered plants. If an endangered plant is in a treatment plot, plants targeted for removal within 10 feet (3 m) shall be pulled by hand to avoid affecting the endangered plant.
- e. Drift due to wind can be a problem for non-targeted plants, animals, and people. If a treatment area contains endangered species, herbicide shall only be sprayed on low wind days. Methylated Seed Oil, a surfactant, and Turfmark®, a blue dye, shall be added to Aquamaster<sup>TM</sup> for drift recognition and control. Aquamaster<sup>TM</sup> shall be applied until the targeted plant is wet, but not dripping. To the maximum extent practicable, it shall only be applied when it is not raining and rain is not imminent, when wind speeds are less than ten miles per hour, and during the early morning when temperatures are cool. In addition, wet vegetation shall not be treated because water dilutes the herbicide, reduces its effectiveness, and necessitates re-treatment sooner than scheduled. To further control drift during windy conditions, the person applying the chemical will 1) adjust the nozzle to increase droplet size; 2) spray downward and in the direction the wind is blowing; and 3) keep the sprayer nozzle close to the plants targeted for herbicide treatment.

#### **BEST MANAGEMENT PRACTICES (BMPS) FOR MARITIME HERITAGE SITES**

#### Papahānaumokuākea Marine National Monument

The following BMPs should be followed to reduce or eliminate adverse effects upon maritime heritage sites through potential interactions or discoveries during in water or shoreline activities. They are primarily aimed at small-scale projects such as research dives, marine debris removal, or oceanographic equipment repair or maintenance conducted by resource agencies or contracted personnel. These BMPs are not necessarily comprehensive for major construction activities or disaster response.

- Prior to entry, all personnel should be aware of potential maritime heritage resources in areas of work/survey, including ongoing archaeological research sites. This may occur during a pre-access briefing. Permitted personnel conducting activities within Special Preservation/Management Areas that may potentially encounter maritime archaeological sites incidental to permitted activities may be required to have a briefing on maritime archaeological resources. The briefing includes an overview of maritime heritage sites and the Monument's maritime heritage program as well as best practices should a site be encountered. Permit coordinators would work with NOAA Office of National Marine Sanctuaries Maritime Heritage Coordinator in order to determine which permitted personnel would require this briefing.
- 2. Maritime heritage sites should be avoided unless necessary for survey/research, or with the guidance of a maritime archaeologist or designee. If sites are necessary for survey/research, appropriate permits and Section 106 consultation must be in place.
- 3. If anchoring, area should be assessed prior to setting anchor to make sure no maritime heritage resources will be disturbed.
- 4. If any maritime heritage sites are discovered, at a minimum, site location should be reported to the NOAA Office of National Marine Sanctuaries Maritime Heritage Coordinator (telephone number: 808-725-5800) and the Hawaii State Historic Preservation Division (Monday thru Friday from 8am 4pm: 808-692-8015; nights and weekends: 808-643-3567). As per the Monument's Management Plan, the definition of maritime heritage resources includes submerged and beached shipwrecks, aircraft, and other sites of historical, cultural and archaeological significance. Other sites may include submerged structures and artifacts thrown overboard. Significant items to report also include artifacts associated with shipwreck or sunken aircraft sites, or evidence of past human activity in the Northwestern Hawaiian Islands. These may include disassociated anchors, anchor chain, aircraft parts and pieces, and any small cluster of artifacts that may have broken apart and drifted away from a larger site.

- 5. If time permits, additional information to be collected and reported includes: GPS coordinates, photographs (with scale if possible), sketches (rough or measured), brief description, compass bearings.
- 6. No artifacts or material culture should be moved, or removed from the seafloor. Moving or recovering the artifact disturbs the context of the site, which is important for interpretation and archaeological survey. Additionally, removal has the potential to irreversibly damage and/or destroy the artifact. Artifact recovery can only take place if appropriate permits are in place, and there is a plan and infrastructure for conservation, stabilization, and curation of the artifact. Recovery should only take place by or under the supervision of an archaeologist.
- 7. Maritime Heritage resources are non-renewable, and thus, must be treated with the utmost care. Once lost, these resources are gone forever, so activities in the vicinity should aim to be non-invasive.