

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 Tristram’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. Permit application guidelines and person-use days

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 disturbance¹ 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.

¹ 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 days² 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 activities³.
- 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.

² 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.

³ 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 liaison⁴ 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.

⁴ 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 through 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. Human health and safety

- 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.

Protective measures when removing invasive plants via mechanical and chemical means

I. Safeguards for removing Indian marsh fleabane mechanically

- 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™

- 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™ for drift recognition and control. Aquamaster™ 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.