



Natural Resources Conservation Service  
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December 11, 2007

William L. Robinson  
Regional Administrator  
National Marine Fisheries Service, NOAA  
Pacific Islands Regional Office  
1601 Kapiolani Boulevard, Suite 1110  
Honolulu, HI 96814-4700

Dear Mr. Robinson,

The State of Hawaii Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (DOFAW), in cooperation with the Natural Resources Conservation Service (NRCS), is planning to implement a conservation plan and contract off the windward coast of the island of Oahu, on the Mokulua and Manana islets under the Wildlife Habitat Incentives Program (WHIP). The attached maps depict the project area and its proximity to critical habitat and sightings of listed species. We have already consulted with the US Fish and Wildlife Service on this project for the seabirds, migratory birds, and plant critical habitat and received a concurrence on a "Not Likely to Adversely Affect" determination.

#### Proposed Action and Action Area

Between 2007 and 2016, the NRCS will cost share with the DOFAW to implement a wildlife habitat management plan for the Mokulua and Manana islets (contract number XXXXXXXXXXXX) to improve the habitat for seabirds as well as migratory shore birds. The action area consists of three islets off the shore of Oahu, including North and South Mokulua and Manana islets.

Mokulua is made up of two volcanic islets: Moku Nui or North Mokulua and Moku Iki or South Mokulua. Together they total 24 acres in size and reach elevations of 225 and 150 feet respectively. They are located approximately three-fourths of a mile offshore from Lanikai, Oahu. North Mokulua has two peaks and is the larger of the islets. It is separate from South Mokulua, which has one peak, by a shallow channel 200 feet wide. Both islets have steep slopes, cliffs, and mostly rocky shores. The sandy west beach of North Mokulua is suitable for landing in good weather and is the destination for thousands of kayakers and other visitors coming across from Kailua each year.

Both Mokulua Islets are State Seabird Sanctuaries managed by the Hawaii DOFAW. Regulations in Hawaii Administrative Rules, Title 13 Chapter 125, protect wildlife and plants and restrict human activities in seabird sanctuaries. Federal law also protects seabirds, shorebirds, and threatened and endangered species. Visitors must obey all posted signs and stay away from the interior of the islet, where dense concentrations of seabird burrows occur.

Wedge-tailed shearwaters nest on North and South Mokulua. A 2000 survey estimated almost 15,000 breeding adult shearwaters on both islets. In 2000, heavy rains and erosion of unvegetated soil collapsed and filled in many nest burrows, killing seabird chicks trapped inside. This event highlighted the need for vegetation restoration as a means of seabird colony restoration.

Vegetation cover on both Mokulua islets is primarily non-native but some native species remain. A 2005 survey recorded 37 plant species on North Mokulua, 17 of which were native. The same survey documented 42 plant species on South Mokulua, including 18 native species. Non-native grasses, especially *Cenchrus echinatus*, dominate many areas but native species are present near coastlines and in windward areas. Drought and soil erosion have been periodic problems.



A University of Hawaii study is examining the effects of alien plants on nesting seabirds on North and South Mokulua. Several species of ants, including big-headed ants, crazy ants (*Paratrechina longicornis*) and fire ants (*Solenopsis geminata*) are common. Intensive insect collecting associated with the project has shown that most insects on Mokulua are non-native, although the rare, native yellow-face bee is still present. Part of the project included a 2002 experimental broadcast of toxic ant bait on North Mokulua, which was then compared to the untreated South Mokulua. The bait eradicated crazy ants and significantly reduced fire ants on North Mokulua, resulting in decreased ant attacks on the shearwaters and increased health of some native plants.

Rocky tide pools and intertidal areas are common around both islets. Green sea turtles are often seen in the waters around the islets but are not known to nest there.

Manana islet is 67 acres in size, making it Oahu's largest offshore islet. It is also called Rabbit Island, not only because it resembles a crouching rabbit but also because rabbits once lived there. The islet reaches a height of 360 feet and lies one mile north of Makapuu Beach on the southeast coast of Oahu. Rains have cut deep gullies in the outer and inner slopes of the main crater.

State regulations prohibit landing on Manana. The islet is a State Seabird Sanctuary managed by the Hawaii DOWAW. Manana is covered by the same state and federal rules governing Mokulua islets, as mentioned above.

Manana has the highest number of seabirds of Oahu's offshore islets and, along with Mokumanu, Kaula, and Lehua, is among the most important seabird islets in the Main Hawaiian Islands. Estimates from the 1980 are that between 85,000 and 130,000 breeding adults of six species of seabirds (sooty terns, brown noddies, wedge-tailed shearwaters, Bulwer's petrels, and red-tailed tropicbirds) were present.

Rabbits were introduced in the late 1800s and drastically altered Manana's vegetation, a situation not improved by its use as a target range during World War II. Although rabbits were removed and the shelling stopped, the native vegetation has not been able to recover and non-native plants currently dominate. A 2005 survey recorded 42 plant species, only 11 of which were native. Golden crown beard (*Verbesina encelioides*) and buffelgrass (*Cenchrus ciliaris*) are dominant non-native covers.

Recent collections found only non-native insect species, including several types of ants. More extensive collecting efforts could discover some native species.

Hawaiian monk seals haul out on Manana and have pupped there in recent years. Formal marine surveys are unknown, although anecdotal information suggests that sharks are fairly common around Manana.

Beginning in 2008 and continuing into 2015, the NRCS practice **Critical Area Planting** will be applied to approximately 30 acres between the three islets. This practice will address soil erosion problems and improve water quality on and around the islets. It will also provide habitat for native birds. The NRCS practice **Tree and Shrub Establishment** will also be used to plant native woody plants. This practice will be applied starting in 2008 and continue through 2013 and will address soil erosion and water quality on 11 acres. Native plants will be planted just prior to and during the rainy season, which begins in October. This work will be done using picks and shovels. No chemical fertilizers or amendments will be used and all plastics (pots, plant labels) will be removed from the islets after planting.

The NRCS practice **Upland Wildlife Habitat Management** will be applied in all years of the contract and will be used to monitor for management of native plants and animals and non-native pests (plants and animals).

The NRCS practice **Pest Management** will be applied starting in 2008 and continuing until 2012. This practice will address non-native, invasive plants and non-native ants on all three islets. Invasive plants will be controlled using hand-pulling and use of the chemical glyphosate. Cleaning of spray equipment will not take place on the islets or near the water, but at the DOWAW facility on Oahu. A 50 meter chemical-free

buffer on the shore of the islets will be established to prevent any chemical products from entering the surrounding marine environment. The chemical will be properly diluted and applied using a pump-style sprayer. The herbicide will be applied under low pressure, resulting in a dribble that will create little to no misting that might drift in the winds. The herbicide becomes bound as soon as it dries so no leaching is expected. No herbicide is expected to enter the marine environment. All label directions will be followed in compliance with state and federal laws.

The invasive ant species, *Anapoolepis gracilipes*, will be controlled using a hand-broadcast bait. The same 50 meter buffer used for glyphosate will be used for the ant bait to prevent movement into the marine environment. The bait consists of a growth regulator and a mildly toxic pesticide. The chemicals are not water soluble and do not bioaccumulate. They are not toxic to mammals. The hand broadcasting will be done in such a way as to hit only target areas and non-target placement is not expected. No insecticide is expected to enter the marine environment. All label directions will be followed in compliance with state and federal laws.

Surveys for protected species will be performed before any work starts, and all work will be postponed or halted if protected species are seen in the area. If Hawaiian monk seals are in the area, either loafing or pupping, a 100+ meter buffer will be observed and no humans will approach them. They will be allowed to leave on their own.

The action area for this project includes the complete islets and the area immediately adjacent to the work sites where ESA-listed marine species may encounter activity, noise, or plumes in the water. This is an estimated area equal to a 50 meter radius around all work areas.

#### Species That May Be Affected

ESA-listed species under NMFS jurisdiction that are known to occur, or could reasonably be expected to occur in waters of the Hawaiian Archipelago, and which may be in the vicinity of the proposed action area include threatened green sea turtles (*Chelonia mydas*), loggerhead sea turtles (*Caretta caretta*), and olive ridley sea turtles (*Lepidochelys olivacea*), as well as endangered hawksbill sea turtles (*Eretmochelys imbricata*), leatherbill sea turtles (*Dermochelys imbricata*), blue whales (*Balaenoptera musculus*), humpback whales (*Megaptera novaeangliae*), North Pacific right whales (*Eubalaena japonica*), sei whales (*Balaenoptera borealis*), sperm whales (*Physeter macrocephalus*) and Hawaiian monk seals (*Monachus schauinslandii*).

Leatherback, loggerhead, and olive ridley sea turtles all occur in the waters of the Hawaiian archipelago. However, there is no record of nesting for any of these turtles in the Hawaiian Islands and they are only rarely sighted in near-shore waters. Similarly, blue and North Pacific right whale sightings in the region are historically rare. Finally, the action area for this project is restricted to shallow, near-shore waters, whereas leatherback, loggerhead, and olive ridley sea turtles, and blue, sei, and sperm whales are all predominately pelagic, deep-water animals. Although humpback whales frequent relatively shallow near-shore waters, it is extremely unlikely that they would enter the action area. Based on the rarity of sighting, and/or the physical separation between these species and the action, the likelihood of interaction between the action and these species is considered discountable. Thus, leatherback, loggerhead, and olive ridley sea turtles, as well as blue, humpback, North Pacific right, sei, and sperm whales are considered not affected by the proposed action. Green and hawksbill sea turtles and Hawaiian monk seals all occur in near-shore waters of Oahu and may be affected by the proposed action.

Green sea turtles are globally distributed in tropical and subtropical waters between 30 degrees north and 30 degrees south, and are highly migratory. Juveniles recruit to near-shore habitats and have a nearly exclusive herbivorous diet of sea grasses and marine algae upon reaching a carapace length of about 35 centimeters (cm). Every few years after reaching sexual maturity, green sea turtles make breeding migrations that may span thousands of kilometers (km) between their resident foraging grounds and their natal nesting areas.

Green sea turtles are the most common sea turtle in the Hawaiian Archipelago. Limited nesting occurs on some of the main Hawaiian Islands. Over 90 percent of the nesting occurs in the French Frigate Shoals in the Northwestern Hawaiian Islands. Major forage and resting areas have been identified along the coastlines of Oahu, Molokai, Maui, Lanai, Hawaii, Lisianski Island and Pearl and Hermes Reef. Hawaiian green sea turtles feed primarily on benthic algae, but they also forage on sea grass. Adult male and female Hawaiian green sea turtles regularly haul out in the daytime to bask along the shoreline, a practice that is very uncommon in other regions. Although the Hawaiian green sea turtles population has increased over recent years, an often fatal tumor affliction known as fibropapillomatosis is reaching epidemic proportions on the islands, affecting more than 50 percent of some populations. Green sea turtles are common in waters adjacent to the Mokulua and Manana islets, where they likely forage, rest, and transit to and from other areas. There is no record of nesting in the project site's action area.

Hawksbill sea turtles are globally distributed in tropical and subtropical waters between 30 degrees north and 30 degrees south, and are highly migratory. Post-hatchlings and oceanic stage juveniles are believed to occupy the pelagic environment for several years where they probably drift along major current systems and feed primarily at the surface. At about 35 cm carapace length, juveniles recruit to near-shore foraging grounds where they are most commonly associated with healthy coral reefs. There, they begin feeding on benthic organisms including sponges, other invertebrates, and algae. Every few years after reaching sexual maturity, adult hawksbill sea turtles make breeding migrations that may span thousands of km between their foraging grounds and nesting areas.

Although hawksbill sea turtles occur around all of the Main Hawaiian Islands, they are uncommon, occurring in much lower numbers than green sea turtles. There are no measurable trends in the stock. They are only known to nest on beaches in the main islands, primarily along the east coast of the island of Hawaii and on the east end of Molokai. They also nest on Maui. Nesting normally begins in late May with hatching normally completed by early December. It is reasonable to expect that hawksbills could occasionally occur in the waters near the Mokulua and Manana islets, where they would likely forage, rest, and transit to and from other areas. There is no record of recent nesting near the project site.

Hawaiian monk seals are among the most primitive genus of seals and are one of the most endangered marine animals in the United States. Approximately 1,200 individuals remain and the population is declining by about four percent annually. They are endemic to the Hawaiian Archipelago, and are the only marine mammal which exists wholly within the jurisdiction of the United States. Hawaiian monk seals are thought to live 25 to 30 years. Females reach sexual maturity at about five to ten years of age and pup a maximum of once a year. It is thought that they have extensive home ranges and spend about two-thirds of their lives offshore. Inter-island movement is common. They are capable of dives to about 1,500 feet while foraging, and appear to be opportunistic feeders feeding on fish, eels, mollusks, and crustaceans. Although monk seal occurrence and pupping within the Main Hawaiian Islands is on the increase, they remain uncommon here, with their primary habitat being spread among the Northwestern Hawaiian Islands.

Although Hawaiian monk seals occur on Oahu, and pupping on the island has increased over the past few years, the Mokulua islets and the adjacent areas are not known as Hawaiian monk seal haul out or pupping areas. Manana islet is known as both a haul out and pupping area.

#### Critical Habitat

There is no critical habitat designated for any listed marine species within or adjacent to the action area. Therefore, this project will have no effect on designated critical habitat.

### Effects Analysis

Our effects analysis considers the probable duration, frequency, and magnitude of potential interaction between protected marine species and the proposed action. Potential effects on listed marine species from this project include: 1) disturbance from human activity and 2) exposure to toxic chemicals.

**1. Disturbance to human activity:** Listed marine species may experience stress due to a startle reaction should they encounter personnel engaged in the project operations. Their reaction could range from one extreme where an animal calmly approaches and investigate the activity, to the opposite reaction of panicked fright, where the animal may injure itself in an attempt to flee.

Based on avoidance behaviors typically exhibited by sea turtles and marine mammals toward human marine activities, the probable effect of this interaction will be low to moderate level with stress a moderate to high energy avoidance behavior that leads to an animal rapidly leaving the encounter area on its own and without injury. Our client intends to reduce the likelihood of disturbance by watching for protected marine life and postponing or halting operations when the listed marine species is present.

**2. Exposure to toxic chemicals:** Herbicide and pesticide use during this action could potentially expose marine organisms to toxic substances. The adverse effects on marine life to toxic chemicals are well documented throughout current literature. Depending on the chemicals, their concentration, and the animals involved, effects from exposure to these chemicals may range from avoidance or abandonment of an area to instantaneous death.

The proposed project involves the use of herbicide and pesticide to control non-native plants and ants. However, the amounts used are small. In each case, the herbicide and pesticide will be applied well away from the marine environment. The chemicals will be applied in a manner that virtually eliminates drift, overspray or over-application. The herbicide (once dried) and the pesticide are not water soluble and will not leach into the soil or water. The herbicide will completely biodegrade into non-toxic nitrogen and phosphorus compounds between two and eight weeks after application. The pesticide does not bioaccumulate to become a problem for non-target organisms.

Based on the small quantities of herbicides and pesticides to be used, on their insolubility once dried or to begin with, on the speed with which the toxic compounds degrade to non-toxic substances, and on the measures being taken to prevent their entrance into the marine environment, it is very unlikely that ESA-listed marine species will be exposed to significant levels of intoxicants from the use of herbicides or pesticides as part of this action. Therefore, we have determined that it is unlikely that ESA-listed marine species will be significantly affected by exposure to toxic substances from this action.

### Cumulative Impacts

As described in the Proposed Action section, this action includes recurring activities that will take place between 2007 and 2016, particularly the use of herbicides and pesticides. As described in the Analysis of Effects section, NRCS has determined that the individual impacts from the proposed action will have insignificant effects on ESA-listed sea turtles, monk seals, and their habitats.

Based on the limited potential for impacts from effects of the proposed project, the expected annual effects on sea turtles, monk seals, and their habitats are expected to be so insignificant as to be immeasurable and have no additive effect. We have determined that the cumulative impacts expected from these activities will remain insignificant over the life of the action.

Based on the above information, the NRCS has determined that the project (Contract No. 7292510702V) may affect, but is not likely to adversely affect threatened or endangered marine species. Your concurrence with this determination is requested within 30 days, in accordance with the consultation requirements of section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C § 1531 *et seq.*). If you have any questions, please contact Chad Kacir, District Conservationist, in the Aiea Field Office at 808-483-8600 ext. 101.

(WHIP # 7292510702V)  
Mr. William Robinson  
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Sincerely,

LAWRENCE T. YAMAMOTO  
Director  
Pacific Islands Area

Attachments: T&E Maps, T&E Data Tables

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