

**FINAL
ENVIRONMENTAL ASSESSMENT**

PU'U ALI'I CONSERVATION FENCING PROJECT

**Upper Pu'u Ali'i Plateau
Pu'u Ali'i Natural Area Reserve
Moloka'i**

In accordance with:
Chapter 343, Hawai'i Revised Statutes
National Environmental Protection Act
National Historic Preservation Act, Sect. 106
Endangered Species Act, Sect. 7

Prepared by:

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PROJECT SUMMARY

Project Name: Pu‘u Ali‘i Conservation Fencing Project
Upper Pu‘u Ali‘i Plateau
Pu‘u Ali‘i Natural Area Reserve
Moloka‘i.

Project Location: Pu‘u Ali‘i Natural Area Reserve
County of Kalawao
District of Kalawao
Island of Moloka‘i
TMK 6-1-001-002 (State of Hawai‘i)

Land Use Conservation District, Protective Subzone

Applicant: State of Hawai‘i
Department of Land and Natural Resources
Division of Forestry and Wildlife (DOFAW)
Natural Area Reserves System (NARS)

Approving Agency: Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawai‘i 96809

Anticipated Determination: Finding of No Significant Impact [FONSI]

Agencies/Individuals Consulted:
Advisory Council on Historic Preservation
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
U.S. Geological Survey, Biological Resource Discipline
National Park Service
Natural Resources Conservation Service
U.S. Senator Daniel Inouye
U.S. Senator Daniel Akaka
U.S. Representative Mazie Hirono
U.S. Representative Neil Abercrombie
Department of Agriculture
Department of Health, Kalaupapa office
DLNR – State Historic Preservation Division
DLNR – Division of Conservation and Resources Enforcement
DLNR – State Parks

DLNR – Office of Conservation and Coastal Lands
Department of Hawaiian Home Lands
Office of Environmental Quality Control
Kalaupapa Patient Advisory Council
Molokai Island Burial Council
Office of Hawaiian Affairs
Natural Area Reserves Commission
University of Hawaii, Environmental Center
State Representative Mele Carroll
State Representative Sol Kahoohalahala
State Senator J. Kalani English
Maui County Council Member Danny Mateo
Rural Development Project
Alu Like: Molokai Island Center
Maui County Department of Planning
Maui County Department of Public Works
Maui County Department of Water Supply
Molokai Planning Commission
Molokai Community Service Council
Molokai/Lanai Soil and Water Conservation District
Ke Aupuni Lokahi
Bishop Museum, Hawaii Biological Survey
Conservation Council for Hawaii
Earthjustice Legal Defense Fund
Hawaii Audubon Society
Hawaiian Botanical Society
Historic Hawaii Foundation
Hui Malama I Na Kupuna O Hawaii Nei
Hui Malama O Moomomi
IDEA
Kamehameha Schools
Ka Ohana O Kalaupapa
Kawela Plantation Homeowners' Association Board
Mediation Center of Molokai
Moanalua Gardens Foundation
Molokai 4-H
Molokai Ranch
Molokai Visitors Association
Native Hawaiian Plant Society
Puu o Hoku Ranch
Queen Lilioukalani Childrens Center
Joyce Kainoa
William Akutagawa
Malia Akutagawa
Dr. Emmet Aluli
Alton Arakaki

Riki Cooke
Shannon Crivello
Glenn and Kathy Davis
Clifford Dudoit, Kapualei Ranch
Crysal Egusa
Don Habon
Vanda Hanakahi
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Kalani Johnston
Moses and Mary Kalilikane
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Kalani Mahiai
Walter Mendez
Edmund Pedro
Russel Phifer
Ron Rapanot, Sr.
Joe Reich
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Joann Simms

Summary of Action

The State of Hawai'i Department of Land and Natural Resources (DLNR), in cooperation with Kalaupapa National Historic Park (KALA), National Park Service, U.S. Department of the Interior, proposes to construct new animal exclusion fences at Pu'u Ali'i Natural Area Reserve (NAR) on Moloka'i.

The project would protect approximately 484 acres of the 1,330 acre Reserve with animal-proof fences, followed by the removal of all feral ungulates from within the fenced enclosure. Approximately 5 miles of new fence will connect to a fenced unit (South Unit) completed recently by KALA staff. Combined with the existing fencing, the proposed fencing will result in the protection of approximately 75% of the NAR from the damaging impacts of feral animals, providing long-term protection for important native forest and watershed.

The natural ecosystem of Pu'u Ali'i is still fairly intact, but ungulate activity in many parts of the Reserve is at unacceptably high levels. In similar landscapes throughout Hawai'i, feral pigs and goats cause significant damage to native vegetation. Irreversible alteration of forest structure, spread of alien weeds, loss of sensitive plant and animal species, and invasion of avian disease causing mosquitoes are some results of severe and prolonged ungulate activity. Natural recovery is possible if animals are removed, but is often limited once a critical threshold of habitat degradation is passed. Continued animal disturbance in Pu'u Ali'i NAR will lead to further declines in forest health, and rare elements of the Reserve (plants and animals) may be lost.

The primary objective of this project is to prevent further damage to a portion of the Reserve in which the native vegetation is still fairly pristine. Removing animals from the area now is a critical component of long-term protection of the native forest.

This Environmental Assessment describes two project alternatives: building fences as described above and a no action alternative. The project is expected to have primarily positive effects on the resources protected in the Reserve. No significant adverse effects are anticipated with regard to the environment, archaeological features, view planes, or public access or use of this area during or after construction of the proposed fencing.

PROJECT BACKGROUND AND NEED

Native ecosystems of the Hawaiian Islands provide among the world's most spectacular examples of the ecological and evolutionary processes of speciation and adaptation. Millions of years of isolation from continental land masses, combined with a full range of available habitats (from wet forest to dry coastal grasslands), resulted in the creation of countless new lineages of plants and animals from relatively few colonizing events. Notable examples are the endemic Hawaiian honeycreepers (*Drepanididae*), lobeliads (*Campanulaceae: Lobelioideae*), and pomace flies (*Drosophilidae*), each of which are represented by dozens of species exhibiting a variety of forms and habits, and each having evolved from perhaps a single colonizing species. Rates of endemism (i.e., percent of species found nowhere else on earth) are extremely high: 99 percent for terrestrial insects, spiders, and land snails, 90 percent for plants, and higher than 80 percent for breeding birds. These biological resources are integral elements of the natural and cultural heritage of the Hawaiian Islands and their people.

With the arrival of humans and consequent introduction of invasive plants, animals, and disease, and development, many of the unique biological resources have declined. Ninety percent of the native dryland habitat, 61% of mesic habitat, and 42% of wetland habitat is estimated to be lost, with less than 40% of the land surface covered in native vegetation today. An estimated half of the native bird species have been lost to extinction, and the majority of those surviving are federally listed as endangered. Two hundred and seventy three plants are listed as threatened or endangered, and another 85 are candidates for listing.

In 1972, Chapter 195 of the Hawai'i Revised Statutes (HRS 195) created the Natural Area Reserves System, to preserve and protect Hawai'i's unique flora and fauna, as well as important geological features, for the benefit and enjoyment of future generations. This legislation mandates the Department of Land and Natural Resources to protect NAR lands so that natural resources remain as unmodified as possible. Pu'u Ali'i NAR was created in 1985, in order to protect the significant biological resources of the area.

In 1996, the Natural Area Reserve Commission adopted Management Policies to guide management activities within the NARS. These policies state:

- In Reserves, strategies to reduce populations of non-native animals to the lowest possible level will be employed.
- Sustained yield management of animals for hunting is contrary to the intent of the NARS.
- Where *practicable* [emphasis added], regulated public hunting will be used to control these animals.

Periodic transect based surveys over the past decade have documented continuing ungulate disturbance throughout Pu'u Ali'i NAR. The level of disturbance varies with topography and vegetation type, but all natural communities within the Reserve are affected. Pigs are causing most of the damage in the core of the Reserve; goats are a secondary threat and primarily affect vegetation on the steep walls and plateau edges. Deer also likely to be in the Reserve; but due to their secretive nature, they are seldom observed. There is ample evidence to support the conclusion that these animals constitute a severe threat to the integrity of the Reserve by their continued destruction of vegetation, which facilitates soil erosion, the spread of weed species, and avian malaria.

On-going dialogue between agencies and concerned members of the public on the issue of animal control eventually led to the formation of the Moloka'i Hunting Test Working Group, and later the East Moloka'i Watershed Partnership. Through these associations, DOFAW, KALA, and The Nature Conservancy have facilitated a cooperative volunteer hunting program intended to reduce erosion and other impacts of pigs, goats and deer in watersheds and other protected natural areas on Moloka'i, including Pu'u Ali'i NAR.

In the early 1990s, two fences were constructed in Pu'u Ali'i (Figure 1 contains a map which illustrates existing fences in Pu'u Ali'i NAR). DOFAW constructed a 1.5-mile long fence that bisected the Reserve from east to west, and The Nature Conservancy constructed a 1.25-mile long fence that roughly followed the southern Reserve boundary. The fences divided the Reserve into two units of roughly equal size – a northern and southern unit.

Between 1994 and 2000, approximately 30 organized hunts took place in Pu'u Ali'i. Two to four times a year, volunteer hunters and their dogs were flown to the Reserve for hunts lasting up to three days. Roughly 80 pigs and 20 goats were removed from the Reserve during this period. Most of the cost of these helicopter flights was paid out of the NARS program operating budget.

Monitoring of animal activity during this time period showed that this program was not enough to reduce impacts to an acceptable level. The steep, rugged terrain and thick vegetation within the Reserve discouraged many hunters from participating in these trips, and it was difficult to recruit enough volunteers to maintain an adequate level of

hunting pressure. In addition, ungulates proved able to traverse the cliffs around the Pu'u Ali'i plateau, negating the effectiveness of the strategic fences. During hunts, animals were often able to evade dogs by descending onto the steep cliffs, only to return to the plateau after the hunt was over.

The failure of these attempts to adequately reduce animal damage is similar to experiences reported from other natural areas in Hawai'i. It has been repeatedly shown that the crucial primary step in the protection of Hawaiian native ecosystems is the permanent removal and exclusion of all feral ungulates.

As the topography was not steep enough to deter animal ingress within the NAR's south unit along the Pelekunu and Waikolu ridgelines, between 2004 and 2007, two actions were taken to prevent animal incursion into the south unit. First, the existing fence lines were retrofitted to increase their height. Second, new sections of fence were installed along the Pelekunu and Waikolu ridgelines oriented roughly along a north-south line. Connected to the existing fence lines running east-west across the plateau, these new sections have effectively made the south unit inaccessible to deer, goats, and pigs from the outside. With this project now complete, and with the recent increase of State funds available for natural area reserve management, DOFAW now proposes to fence the northern portion of the Reserve to expand protection of native forest and prevent irreversible degradation of natural resources.

Protection of Pu'u Ali'i NAR is consistent with the goals of the East Moloka'i Watershed Partnership (EMoWP), formed in 1999. The formation of the EMoWP occurred as one of the results of the grass-roots, community-wide strategic planning process of the USDA Empowerment Zone application. The resulting strategic plan clearly states the intention of the Moloka'i community to take action to protect the Moloka'i watershed and its many rare and endangered native species, to reduce erosion and sedimentation of the near-shore reefs.

This project involves construction of approximately 5 miles of new fence, connecting to the existing fencing protecting the southern portion of the Reserve. This new fence will follow the rims of Pelekunu and Waikolu valleys and will deter animals from entering the northern half of the NAR. Short segments of strategic fencing will also be constructed along selected ridgelines on the northern boundary to further restrict animal entry into the northern unit. When combined with the existing fencing, the proposed project is anticipated to protect approximately 1,000 acres, or 75% of the Reserve. Upon completion of the new fences, all ungulates will be removed from the northern unit with the use of volunteer hunters. The removal of the last few animals will require using alternative methods such as baiting and trapping or snaring inside the enclosure. Alternative methods will be discussed and agreed upon by the Moloka'i Hunter's Working Group. Control of invasive weeds, and augmenting populations of rare and endangered plants by out-plantings, may then be feasible.

The proposed fencing project is consistent with State law, the Maui County General Plan, and the Moloka'i Community Plan. The project provides long-term protection to

areas within the Natural Area Reserves system, as encouraged by HRS Chapter 195 and will perpetuate endangered species and their habitat, as encouraged by HRS Chapter 195D. The fencing is consistent with the Maui County General Plan (1990), specifically Environment Objective 1 “to preserve and protect the county’s unique and fragile environmental resources” and the related policies to “(a) preserve for present and future generation the opportunity to experience the natural beauty of the islands; (b) preserve scenic vistas and natural features; (c) support programs to reduce air, land and water pollution; (d) support programs to protect rare and endangered species and programs which will enhance their habitat, and (e) discourage the introduction of noxious foreign species into Maui County’s unique island ecosystems.” The proposed project is also consistent with the Moloka’i Community Plan (2001) goal to “preserve, protect and manage Moloka’i’s exceptional natural land and water resources to ensure that future generations may continue to enjoy and protect the island environment,” and the following related objective/policy to “protect and encourage the restoration of native habitats through government and private conservation, land management and educational programs.”

Pu’u Ali’i NAR also forms a major portion of the watershed for the Moloka’i Irrigation System administered by the State of Hawai’i to provide water to the Kualapu’u Reservoir for agriculture. Protection of the native vegetation in the watershed facilitates longer term flow of water into the irrigation tunnel even during prolonged periods of drought, as experienced during summers and El Nino events over the past decade. In addition, the protection of native forest in Pu’u Ali’i NAR through fencing and ungulate removal implements the USFWS Recovery Plan for the Multi-Island Plants and Moloka’i Plant Cluster, the Revised USFWS Recovery Plan for Hawaiian Forest Birds, and the State of Hawai’i Comprehensive Wildlife Conservation Strategy.

Pu’u Ali’i NAR is State-owned land within the Conservation District and within the boundaries of Kalaupapa National Historic Park. These facts trigger the need for an Environmental Assessment to be written in accordance with Chapter 343, HRS. Federal (DOI) involvement also requires compliance with the National Environmental Policy Act (NEPA), section 106 of the National Historic Preservation Act (NHPA), as amended, and section 7 of the Endangered Species Act (ESA).

ALTERNATIVES CONSIDERED

Two project alternatives are described: the proposed fencing (preferred alternative) and a no-action alternative.

Alternative 1. Construction of approximately 5 miles of ungulate-proof fencing to form an approximately 484-acre unit in the northern portion of Pu’u Ali’i plateau, followed by animal removal

The preferred alternative is to construct approximately 5 miles of ungulate-proof conservation fencing, followed by conservation actions such as animal removal, weed

control, and outplanting. It is anticipated that the near vertical drop of the sea cliffs along the northern boundary will serve as an adequate barrier to animal intrusion along this edge of the enclosure. However, if it later determined necessary as a result of monitoring, short strategic fences may also be constructed on selected ridgelines as needed to further restrict animal movement and aid in removing the animals that remain inside the enclosure. Strategic fencing on ridges connected to waterfalls may also need to be employed on the northern rim as the terrain is too steep to fence this boundary in its entirety. This will allow managers to reduce or eliminate ungulate disturbance in a significant portion of Pu'u Ali'i NAR. Without fencing, animal populations cannot be effectively reduced within the project area. The exclusion of ungulate would allow for the recovery of damage that has occurred, and for the restoration of the rare and endangered species found within the fenced area. The proposed fencing will enable long-term protection against a major threat to the continued existence of the biological resources the NAR was established to protect. Ultimately, the preferred alternative is expected to prevent further decline of native forest, protect watershed, support restoration, protect important habitat for forest birds, and contribute to the recovery of several rare plant and animal species.

Alternative 2. No action:

The no-action alternative would result in no new fences being constructed on the northern portion of the Pu'u Ali'i Plateau. Ungulate control in the project area would be restricted to the present program of aerial shooting and ground hunts with volunteers.

This alternative is not recommended, as it continues a program that is ineffective. It is unlikely that funding would continue to be available to support ground hunting, as the cumulative cost of using helicopters to ferry hunters to this remote area is prohibitively expensive and the hunts have been ineffective in reducing animal numbers. Also, the rugged terrain and dense vegetation will continue to discourage volunteers from participating, making it difficult to continue the program over the long-term.

Further, this alternative is not preferred because it implies an acceptance of the status quo and continued degradation of the native resources in the Reserve, as animal populations increase within this native forest and watershed area. Goats and deer will penetrate farther into the forest, and deforestation and erosion will accelerate. With no action, the native forest may eventually disappear, further reducing habitat for endangered plant and animal species and depriving future generations of the opportunity to appreciate these resources.

PROJECT DESCRIPTION

Fence construction will be coordinated by the Kalaupapa Natural Resources staff, in collaboration with DOFAW Maui NARS staff. Map A illustrates the proposed fence alignment. The fenceline follows the rims of Waikolu and Pelekunu valleys, respectively the western and eastern boundaries of the proposed unit. Due to the steepness of the

northern boundary, continuous fencing along this boundary is not feasible. It is anticipated that the near vertical drop of the sea cliffs will serve as an adequate barrier to animal intrusion along this edge. However, if it is determined necessary as a result of monitoring, short segments of strategic fencing may be constructed on selected ridgelines to prevent animal entry into the area. The final alignment of these strategic fences will be determined at a later date with additional reviews as required by NEPA, NHPA, and the ESA.

The expected specifications for the project are described below and construction drawings are included as Figure 3. Minor changes may be made as needed based on the terrain, conditions, and professional judgment to improve the effectiveness and/or life span of the fencing.

Hogwire fences will be constructed to prevent entry by pigs, goat, and deer. The fencing is anticipated to be approximately seven feet tall, made of steel posts and steel wire. To construct the fencing, a corridor no wider than four feet will be cleared of vegetation if necessary using powered and non-powered hand tools. Final fence alignments will be selected to minimize removal of native trees and vegetation. Fence construction will involve driving ten-foot galvanized t-posts into the ground approximately eight feet apart along the fence route. Two-foot galvanized anchors will be placed between posts. High tensile galvanized or bezinal-coated steel woven wire mesh three to four feet high will be attached to the outside of the posts, and four foot plastic deer mesh will be hung on the top from nine-gauge bezinal wire. One strand of smooth wire will run along the top of the fencing. One strand of barbed wire will run along the ground at the base of the fencing, or alternatively, a continuous apron of hog wire will be laid horizontally on the ground and attached to the outside of the standing fence with hog rings to prevent entry by feral animals. Self-closing swinging gates will be installed strategically at historical access points and other strategic areas for hunting and management activities. Due to the remote nature of the project area, the fencing crew will transport themselves, materials, supplies, and equipment to the project area using helicopters.

Temporary campsites may be established to support fence construction and future maintenance and management activities. The temporary campsites will use 12-inch pre-poured cement blocks, leveled with wood blocks, to serve as footings for three use area platforms: (1) 16' x 16' reinforced helicopter landing pad, consisting of a wooden platform leveled on removable concrete footings; (2) 34' x 16' camping platform, consisting of a wooden platform leveled on removable concrete footings and mounted with two polyvinyl sheds and water catchments; and (3) 4' x 4' outhouse platform, mounted with a custom removable outhouse with tank that will be flown in and out, and will be pumped and disposed of by a certified waste management company. High use campsite trails may be maintained with removable concrete grass blocks to support soft areas and mitigate the impacts of high-frequency foot traffic between platforms.

Rare plant surveys and archaeological surveys were conducted along the proposed east and west boundaries and future surveys will be conducted, as applicable, for the

shorter segments of strategic fencing along the proposed north boundary as well as the final fence corridors before any construction activities commence to confirm that the final alignment avoids sensitive natural and cultural resources. During all construction activities, if any unanticipated archaeological sites, artifacts, or burials are encountered, fence construction will halt and the appropriate agencies notified to discuss further action, including re-routing the fence line to avoid these elements.

Upon completion of the new fences, all ungulates will be removed from the unit using a combination of methods, beginning with the use of volunteer hunters. The removal of the last few animals will require using alternative methods such as baiting and trapping or snaring inside the enclosure. Alternative methods will be discussed and agreed upon by the Moloka'i Hunter's Working Group. The fenced area will be monitored afterwards periodically for ungulate ingress, and the fencing will be inspected and maintained on a regular basis. Control of invasive weeds, and augmenting populations of rare and endangered plants by out-plantings, may also occur after the fencing is complete.

Fence construction is planned to occur once all permissions and approvals have been received.

Summary of project costs:

Fence construction and animal removal	\$421,531
In-kind contributions	\$157,000
TOTAL	\$578,531

The high cost of fencing per unit acre is related to several factors. First, the area is remote and roadless and requires that all logistical aspects of the project involve helicopter support from the island of Maui. Second, the terrain is very steep and dissected by rivers and streams requiring the construction of fences on steep slopes with specialized stream guards. Third, inclement weather and rain are common in the mountains and slow progress by creating difficult working conditions. Finally, the animal removal component of the project is critical to the long-term success of the project and it will be expensive to effectively hunt and trap all the animals within the area. The funding source for this project comes from the National Park Service Natural Resource Protection Program's Resources Management fund open through national competition Park Service wide. Additional funding is available from the State Natural Area Reserve Special Fund.

DESCRIPTION OF THE AFFECTED ENVIRONMENT

General Setting

Pu'u Ali'i Natural Area Reserve (TMK 6-1-001-002) was established in 1985 by State Executive Order 3302, and is located in a remote portion of northern Moloka'i on the east Moloka'i volcanic shield. The reserve is primarily composed of a northwest-sloping, stream-dissected plateau surrounded by valley walls that drop off steeply on

the north, east and west and totals approximately 1,330 acres. Elevation of the plateau ranges from 4200' at the summit to approximately 2200' at the top of the sea cliffs on the northern edge. Rainfall averages below 70 inches annually at lower elevations, increasing to 120 inches in the summit region. Much of the year, the area is shrouded in clouds.

Soils in the project area are Tropaquods (rTO), rough mountainous land (rRT), and Amalu-olokui association, 3-20% slopes (rAOD). Tropaquods consist of steepwalled gulches and mountainsides, with slopes ranging from 30 to 70%. Rough mountainous land consists of very steep land broken by intermittent drainage channels. Amalu-olokui association soils consists of Amalu peaty silty clay, 3-20% slopes, and Olokui silty clay loam, 3-30% slopes. All three soils are used for watershed and wildlife habitat.

There are no roads to or through the Reserve. Rough dirt roads provide access to the Kamakou Preserve, and a foot trail connects the Preserve to Pu'u Ali'i NAR. The terrain within the NAR is very rough. Access to the interior of the NAR is infrequent and usually by helicopter. Three helicopter landing zones and a small management cabin have been established within the Reserve to facilitate management.

The Hawai'i State Department of Land and Natural Resources, Division of Forestry and Wildlife has primary responsibility for the Pu'u Ali'i NAR. The Pu'u Ali'i plateau is also located within the designated boundaries of Kalaupapa National Historical Park. Management of the NAR takes place under a Cooperative Agreement between the National Park Service and DOFAW.

The Reserve's south boundary adjoins Kamakou Preserve, managed by The Nature Conservancy through the Natural Area Partnerships Program. The Nature Conservancy, DOFAW, and KALA are members of the East Moloka'i Watershed Partnership, formed to manage native ecosystems and watersheds and to reduce erosion causing agents on a regional basis. Partners assist with fencing and feral animal control on adjacent lands.

Current Land Use

The project area is located within the Protective subzone of the State Conservation District and within the County Special Management Area. Current land uses in the NAR are primarily composed of rare plant and bird surveys and monitoring, weed control, conservation research, and occasional recreational hunting.

Flora

The NAR is dominated by native vegetation. Five natural communities were observed in the Pu'u Ali'i NAR during a January 1989 Heritage survey: 'Ōhi'a/'Ōlapa Montane Wet Forest, 'Ōhi'a/Mixed Shrub Montane Wet Forest, 'Ōhi'a/Uluhe Montane Wet Forest (which forms patches within the 'ōhi'a/'ōlapa forest on steep slopes), 'Ōhi'a-dominated shrubland, and a mixed fern/mixed shrub cliff community. The two shrubland

communities are found primarily on the steep slopes and extend from the adjacent valley walls onto the Reserve's western edge and eastern extension at 'Ōhi'alele.

In Pu'u Ali'i Reserve, a wet forest dominated by 'ōhi'a (*Metrosideros polymorpha*) and 'ōlapa (*Cheirodendron trigynum*) covers a large portion of the gentle to moderately sloping terrain. 'Ōhi'a/'Ōlapa Montane Wet Forests are generally found above 3,000 feet elevation and are known from the islands of Kaua'i, O'ahu, Moloka'i, Maui, Lana'i and Hawai'i. In the NAR, 'ōhi'a dominates more than 60 percent of the 'ōhi'a/'ōlapa forest canopy. The codominant 'ōlapa often exceeds 25 percent cover, though rarely attains 40 percent cover. The most common trees in the secondary tree layer are kāwa'u (*Ilex anomala*), kōlea (*Myrsine lessertiana*), and kōpiko (*Psychotria spp.*). Hāpu'u ferns (mostly *Cibotium chamissoi*, some *C. glaucum*) are often prominent.

The diverse native shrub and fern layer in the understory includes shrubs such as kanawao (*Broussaisia arguta*), 'ōhelo kau lā'au (*Vaccinium calycinum*), pilo (*Coprosma ochracea*), kāmakahala (*Labordia hedyosmifolia*), manono (*Hedyotis terminalis*) and saplings of 'ōhi'a and 'ōlapa. Native ferns are well represented by hō'i'o (*Athyrium sandwichianum*), 'ākōlea (*Athyrium microphyllum*), *Elaphoglossum spp.*, wahine noho mauna (*Adenophorus spp.*), 'ae (*Polypodium pellucidum*) and *Dryopteris spp.* Epiphytic filmy ferns, mosses and liverworts are abundant. Where pig damage is minimal, native herbs such as 'ala'ala wai nui (*Peperomia macraeana*) and pa'iniu (*Astelia menziesiana*) are also abundant.

A total of 34 rare plant taxa have been reported from the Pu'u Ali'i NAR and surrounding area (Table 1). Of these, 10 have been confirmed within the NAR boundaries. The 24 taxa known from adjacent areas may be found within the Reserve in future surveys. During rare plant surveys conducted in 1989, *Cyrtandra biserrata* and *Cyanea solenocalyx* were observed within the NAR along a side branch of Waikolu Stream near a small waterfall. This species of *Cyrtandra* is known only from the wet forests of eastern Moloka'i (Wagner et al. 1990). *Cyanea solenocalyx* is known only from the wet forests of eastern Moloka'i (Wagner et al. 1990). Several fruiting plants of *Lobelia hypoleuca* were also seen in the west central part of the Reserve along a side branch of Waikolu Stream, above a large waterfall. *Lobelia* is found in mesic and wet forests throughout the main islands.

Fauna

Birds make up the native terrestrial vertebrate fauna on Moloka'i. Of the seven endemic birds known from Pu'u Ali'i NAR, two are listed endangered by the U.S. Fish and Wildlife Service (Moloka'i creeper or kākāwahie (*Paroreomyza flammea*) and Moloka'i thrush or oloma'o (*Myadestes lanaiensis*)), and one is considered endangered by the State of Hawai'i ('i'iwi (*Vestiaria coccinea*)) (Table 2).

The kākāwahie is federally listed as endangered. As it was last recorded on the Reserve's eastern boundary in 1963, it is likely now extinct. The oloma'o is also federally listed as endangered, was last observed in 1988, and is possibly extinct. 'I'iwi

is considered endangered by the State of Hawai'i for Moloka'i, O'ahu, and Lana'i, but is a common species on Maui, Kaua'i, and Hawai'i. The USFWS 1979-80 Forest Bird Survey of Moloka'i found a relict distribution in the Oloku'i NAR and the Kamakou Preserve. 'I'iwi was last reported in the Reserve near the in two separate location near the rim of Pelekunu Valley in 2005 and 2006. Three more common endemic bird species known from the NAR include the Hawaiian owl or pueo (*Asio flammeus sandwichensis*), 'apapane (*Himatione sanguinea*) and 'amakahi (*Hemignathus virens wilsoni*). The pueo is common on Moloka'i. 'Apapane was commonly heard and 'amakahi was heard less frequently during a January 1989 survey.

In recent years two endemic seabirds, the threatened 'a'o or Newell's shearwater (*Puffinus auricularis newelli*) and the endangered 'ua'u or Hawaiian petrel (*Pterodroma sandwichensis*) have been heard calling on east Moloka'i. Historically they have been found on cliffs in Moloka'i valleys. It is not known whether nesting occurs or if significant habitat exists in Pu'u Ali'i NAR for either species. Burrows are usually found in rugged terrain in forested areas and are very difficult to locate.

In addition to the endemic birds reported from the Reserve, one rare migrant raptor and ten nonnative birds have been reported. During a 1989 survey, a single peregrine falcon (*Falco peregrinus*), listed as endangered by the U.S. Fish and Wildlife Service and an occasional to frequent migrant to Hawai'i, was seen from the edge of Pelekunu Valley in pursuit of an 'amakahi. Nonnative forest birds commonly heard in Pu'u Ali'i NAR include Japanese white-eye (*Zosterops japonicus*), red-billed leiothrix (*Leiothrix lutea*) and Japanese bush-warbler (*Cettia diphone*).

Nonnative mammals in the reserve include feral pigs (*Sus scrofa*) and goats (*Capra hircus*). It is likely that rats (*Rattus spp.*) and mongooses (*Herpestes auropunctatus*) are present in the forest portion of the reserve.

Native invertebrate fauna in the Reserve is very diverse and includes intricate land snails. Native invertebrates incidentally sighted in the Reserve include crickets, drosophilid flies, Hawaiian happyface spiders, tornatellinid snails, and succinid snails. Since the native forests and shrublands are relatively intact, it is probable that additional invertebrate taxa would be discovered with more extensive survey work.

Four species of achatinellid land snails have been reported from the Pu'u Ali'i NAR area (Table 3). *Partulina tessellata*, *P. redfieldii*, *P. proxima*, and *P. mighelsiana* were found on or near the southern boundary of the NAR in adjacent Kamakou Preserve in 1988. Because habitats of Kamakou Preserve and Pu'u Ali'i NAR are similar, it is highly probable that all four species occur in the Reserve. During recent rare plant surveys, *Partulina mighelsiana* and other native land snails (as-yet unidentified to the species-level) were incidentally observed in the NAR. Malacologists believe virtually all Hawaiian land snails are rare and in danger of extinction.

Significant and Sensitive Habitats

Pu'u Ali'i Natural Area Reserve is significant habitat simply by virtue of being a Natural Area Reserve. The State Natural Area Reserves System was established to "preserve in perpetuity specific land and water areas which support communities, as relatively unmodified as possible, of the natural flora and fauna, as well as geological sites of Hawai'i." (HRS Chapter 195). Currently, there are 19 Reserves established statewide, each established to protect unique natural resources of Hawai'i, including rare native plants and animals that occur nowhere else in the world.

In addition, the general project area includes federally designated critical habitat for the following plants: *Adenophorus periens*, *Clermontia oblongifolia* ssp. *brevipes*, *Cyanea procera*, *Lysimachia maxima*, *Phyllostegia mannii*, and *Schiedea nuttallii*.

Finally, the Revised Recovery Plan for Hawaiian Forest Birds identifies the project area as recovery habitat for 'ākohekohe (crested honeycreeper (*Palmeria dolei*)) and the Maui parrotbill (kīkēkoa (*Pseudonestor xanthophrys*)), endangered forest birds currently found only on Maui, but historically present on Moloka'i.

Archaeological Sites and Cultural Resources

The steps that have been taken thus far to determine the cultural and historical significance of the project area are as follows: (1) a general literature review was conducted for reports or studies with relevant information regarding the NAR or surrounding area; (2) review of information gathered during consultation for previous fencing projects in Pu'u Ali'i NAR was reviewed; (3) scoping letters were sent in March 2007 to a variety of Section 106 stakeholders, including agencies, organizations, and individuals that might be interested in the project or have relevant information about potential impacts on archaeological features or traditional and cultural practices; and (4) an archaeological field survey was conducted along the fence corridor of the western and eastern boundary by Mr. Adam Johnson, a qualified archaeologist, to identify any surface archaeological features within the fencing corridor.

In addition to the field survey work, Mr. Johnson conducted a literature search and review of archaeological studies within Kalaupapa National Historical Park. His report, which includes a section on probability findings on cultural uses of the Pu'u Ali'i Natural Area Reserve, is currently under internal review. The following excerpts from his draft report are included here:

Because the project area is located at a high elevation, within a wet montane forest environment, it is not anticipated to contain high site density. The project area is located in a rough, mountainous setting that would not have been suitable for agriculture or permanent habitation.

More likely, the project area would have been periodically visited by *kanaka maoli* (Native Hawaiians) for forest resource extraction. The region

may also have been visited and traversed during travel between the various *ahupua'a* of the area.

The one previous archaeological survey conducted by the National Park Service directly adjacent to the current project area did not identify any historically significant resources. Thus, it is expected that the project area is a low probability area for archaeological remains.

The site types believed to most likely be encountered during the survey would be historic trails and perhaps *ahu* - sites that would demarcate travel into/out of and between the large valleys located on the northeastern coast of Moloka'i. Temporary habitations sites, such as rockshelters, that may have been used during periods of resource gathering could also be present within the project area.

Also, because the current portions of the project area are possibly located within the *wao kanaka* – the upland forest resource zone utilized by native Hawaiians. Other, higher elevation, reaches of the project are located within the *wao akua* – the realm of the gods, a deeply spiritual place that, as discussed in Handy and Handy (1971), would have been associated with many spirits. Therefore, because of intangible associations the area may have to traditional Hawaiian cultural practices, the Pu'u Ali'i area as a whole may potentially have much cultural significance to *kanaka maoli* (Native Hawaiians).

Due to the remoteness of the project area, visitation is minimal and is primarily limited to the vicinity of the Pelekunu Trail. During pre-consultation, Joyce Kainoa, long time North Shore resident, expressed concern for obstructions to the Pelekunu Rim Trail that her 'ohana uses to access their home. The fence alignment has been designed to keep the fencing entirely off of the Pelekunu rim so as to not impede transit or disturb the enjoyment of the Pelekunu Rim trail.

Traditional uses of the wet mountain forests may have included the gathering of plant material and bird feathers. Present NAR regulations prohibit the collection of plant, animal or mineral material, except by special use permit. There have been no applications for special use permits for gathering for traditional purposes in Pu'u Ali'i NAR. However, the proposed fencing is not anticipated to impede public access to the area should a request for permission to exercise traditional gathering rights be made. The proposed fence will provide long-term protection for native forest that contains native plants, some of which were used historically by Native Hawaiians for ethnobotanical or medicinal purposes. Providing long-term protection for these native plants is anticipated to positively impact traditional and cultural practices.

Consultation with the Moloka'i Island Burial Council on the previous fencing project in Pu'u Ali'i brought to the attention of the NPS cultural resource specialist that there are *mo'olelo* (legends) specific to the Pu'u Ali'i area. However, the fencing was not

anticipated to have an adverse effect on this aspect of Molokai's traditional Hawaiian cultural heritage and no additional concerns were raised during or after fence construction. As the project site is immediately adjacent to the previous fencing project, it likewise is not anticipated to have an adverse effect on Molokai's traditional Hawaiian cultural heritage.

Based on the archaeological surveys conducted from May 14-18, 2007, there are no historic sites or archaeological features within the currently proposed fencing corridor that may be impacted by the fencing. There was one potentially historic site identified, a historic era petroglyph, during the field survey. An arrow was found carved into a boulder on an eroded ridge halfway along the alignment on the western boundary (on the rim of Waikolu Valley). The site was marked with orange and white striped flagging and GPS coordinates of the location were recorded to ensure that the site is avoided during fence construction. It is unlikely that additional historic sites are present, due to the elevation and topography of the planned fencing corridor. However, if additional sites are found, fence construction activities in the area will cease, and the site will be assessed by a professional archaeologist and consultation with appropriate parties will occur.

POTENTIAL ENVIRONMENTAL IMPACTS OF THE PROJECT

Vegetation

The proposed fence corridor has been selected and surveyed by a trained Park wildlife biologist. The installation of approximately 5 miles of fencing will entail clearing a four-foot wide corridor through the vegetated areas as necessary and installing a hogwire fence supported and anchored with galvanized steel posts. Native vegetation dominates the landscape and some native vegetation will have to be cut and removed. The amount of clearing required in a given area will vary depending on the predominant vegetation type and the amount of previous disturbance. Some of the proposed fence line passes through areas that have been disturbed by feral ungulates. The fence alignment takes advantage of existing game trails wherever possible, and in many sections, it may be possible to weave the fence between the trees with minimal clearing. However, in some locations, the fence route must pass through an area supporting a denser native understory of short trees, shrubs ferns and mosses. Clearance of some of this native vegetation is unavoidable.

Wildlife

There are no foreseen negative impacts to native bird populations. Because most of the vegetation clearing required will be limited to understory ferns and shrubs, the chance of damage to nests is minimal. One objective of the fence is to minimize damage to the forest caused by digging from animals that result in breeding areas for mosquitoes that typically vector diseases that harm native birds, so the overall impact to native birds is expected to be positive. Rare snails may be on brush cleared for the fence, but no

significant impact is anticipated because it is presumed that they will survive and relocate to new sites from cut branches.

Archaeological and Cultural Resources

No impacts to archaeological or cultural resources are anticipated as a result of the proposed fencing project. Based on the remote location of the project area, no historic sites are anticipated, and the final fence alignment will be surveyed (and any sites identified recorded) prior to construction to confirm that no historic sites are present. If any sites are identified, impacts will be avoided by re-routing the fence alignment as necessary to protect the identified site. As required by the National Historic Preservation Act (NHPA), Section 106 consultation has been initiated for this project between the National Park Service, the Hawai'i State Historic Preservation Division, and other applicable Section 106 stakeholder groups. The Section 106 consultation process is planned to run concurrently with the NEPA and State Chapter 343 environmental review process.

Although remote, the project area may have been used traditionally by Native Hawaiians for gathering of plant material and birds. Present NAR regulations prohibit the collection of plant, animal or mineral material (except by special use permit). Also, gathering of certain plant and animal species is further restricted by State and Federal endangered species law. Construction of fences will have no effect on existing regulations, and hence are not anticipated to affect Native Hawaiian gathering rights. The incorporation of self-closing gates at historical access points will facilitate continued public access to the area. As the intent of the fence is to protect and restore natural resources, the long-term impact on gathering rights may be positive.

Economic

The proposed action involves the expenditures of funds necessary to construct the fencing, including the purchase of fencing materials, the hiring or contracting of crews, and the purchase or rental of equipment including helicopters, and after fence construction, to remove animals and to restore the project area. The estimated total cost of the conservation project is in excess of \$500,000

The project is not expected to have any major negative economic impacts. Positive economic impacts will result from the release of project funds into the State economy through the purchase of goods and services from local vendors and through the hiring of local term laborers to construct the fence.

Soils

No significant impacts are anticipated. There may be some minor erosion caused by establishment of foot trails along the fence corridor. The net benefit from vegetation recovery after ungulates are removed from within the fence is expected to more than compensate for this minor impact.

Noise

Hand held gas powered drills will be used on rocky surfaces to drill holes for post installation. Drill noise may be audible at distances up to 200 meters depending on wind direction and terrain. This disturbance should not exceed three weeks. An MD500 light helicopter will be used to transport fence materials to the jobsite. Helicopter operations typically should not exceed more than one hour two days a week. Visitors to this area are primarily hikers and hunters who may occasionally see or hear the aircraft. Overall, noise impacts are not considered significant.

Visual

In addition to the physical impact installation of fencing may have on any historic properties, the visual impact of installed fencing on view planes of the area was also considered. Care was taken to set the fence alignment away from the Pelekunu rim so that it will not impact or be visible from the Pelekunu rim trail.

Public Access

One long-term result of this project will be that the area is no longer available for public hunting. However, because of the remoteness of the project area, few hunters are known to visit this area regularly. In addition, over the short term, hunting opportunities may improve, as volunteer hunters will be used to remove feral animals from within the fenced enclosure. Other appropriate public uses such as hiking, nature study, etc. will not be affected.

Water/Streams

Due to the method of fence construction and the limited corridor to be disturbed, no significant changes in the normal runoff or percolation patterns are anticipated as a result of this project. Over the long-term, by excluding feral animals from native forest and watershed, the proposed fencing is anticipated to positively impact water quality.

Alien Species

Disturbance along the fencing corridor, as well as the transport of fence materials, equipment, and crew, could increase the potential accidental introduction or spread of non-native plants and invertebrates (including ants) to and within the project site.

Air Pollution

Limited air pollution from helicopter sling loads and the use of small power tools will be unavoidable during fence construction. Use of this equipment is temporary and is not anticipated to significantly contribute to the overall air quality in the region.

MITIGATION OF POTENTIAL IMPACTS

While this project is not expected to have any significant negative impacts on the environment, the following items have been identified as possible areas of concern. Planned actions to mitigate possible negative effects are described below.

Vegetation

Before construction, the fence corridor will be surveyed by a botanist for rare or endangered plant species. If located, the fence will be rerouted to avoid harm to these plants. In addition, final fence alignments will be selected to minimize the removal of live trees, including 'ōhi'a, and native shrubs. Attempts will be made to install fence in fern-dominated areas because ferns typically grow back rapidly. Cut vegetation will be left to decompose, providing habitat for native decomposition organisms. All fence construction activities including the clearing of the corridor will be carried out under the direct supervision of trained Park personnel. Fence construction crews will consist of experienced Kalaupapa NHP staff. Kalaupapa's fencing crew has had extensive experience constructing pig resistant fences in ecologically sensitive, remote areas with minimal impact.

Wildlife

In order to minimize impacts to the native achatinellid land snails, the fence will be rerouted whenever possible to minimize the removal of large 'ohi'a trees and other known host vegetation. Any trimming or cutting of trees or shrubs in areas known or expected to host tree snails will be done only after the vegetation has been carefully inspected for snails. Cleared vegetation will be placed on native vegetation so that any undetected native tree snails will have an opportunity to reach a replacement host plant.

Archaeological and Cultural Resources

An inventory level archaeological survey along the proposed fencing corridor for the east and west boundaries of the north unit confirmed that there are no surface archaeological features. As required by the National Historic Preservation Act (NHPA), Section 106 consultation has been initiated between the National Park Service, the Hawai'i State Historic Preservation Division, and other applicable Section 106 stakeholder groups. If concealed historic properties, such as archaeological resources, are inadvertently encountered during project activities, all necessary steps will be taken to protect them, including notifying and consulting with all appropriate parties, including the Park's cultural resource specialist and the State Historic Preservation Division, prior to resuming the project. Convenient gates will be designed and constructed along access points and trails to limit impacts of the fences on any person accessing the area for traditional and cultural practices. Care has been taken to propose a fenceline corridor that is located entirely away from the Pelekunu Valley Rim so as to not impede access or disturb the enjoyment of the historic rim trail.

Alien Species

The disturbance to the ground surface and vegetation involved with building a fence may create conditions suitable for the establishment of weedy plants. The following practices will be implemented to minimize the introduction of alien plants and insects and to reduce the possibility of establishment. First, boots, equipment and materials will be inspected for seeds, eggs, larvae, etc., prior to delivery and/or entry into the project area, and cleaned as necessary. All construction workers will be instructed on specific procedures to prevent the spread or introduction of noxious alien plants in the project area. In addition, precautions will be taken to prevent spreading alien plants already found in the project area, and all food, refuse, tools, gear, and construction scrap will be removed upon completion of work.

Noise

An MD500 light helicopter will be used to transport fence materials to the jobsite. This aircraft is the smallest and quietest available to accomplish this task. Operations will typically be limited to one hour of flight two times per week during construction.

Visual

Care was taken to align this fence away from the rim of Pelekunu valley to limit visibility of the fencing. During the process of selecting the final fence corridor, personnel will be placed at various points along the trail to work with and redirect the alignment team as necessary. If any section of the fence remains visible to the public after installation, paint will be used to camouflage and conceal that portion from public view.

Public Access

The Pelekunu trail, which is the main public access to the Pu'u Ali'i area, will not be obstructed by the new fences. Gates will also be installed at various locations around the fence perimeter to allow access to the interior unit.

ANTICIPATED DETERMINATION AND FINDINGS AND REASONS SUPPORTING THE ANTICIPATED DETERMINATION

The goal of the proposed fencing project is to provide long-term protection for approximately 484 acres of native forest from the damaging effects of feral ungulates. Without fencing, pigs, goats, and deer could be expected to degrade the native forest, impairing watershed and reducing the quality of important habitat for native birds, invertebrates, and plants.

It is not expected that this project will have a significant adverse effect on the environment, and a Finding of No Significant Impact (FONSI) is anticipated. The

anticipated FONSI is based on the evaluation of the project in relation to the following criteria identified in the Hawai'i Administrative Rules § 11-200-12:

1. *Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.*

The intent of this project is to benefit natural resources (native plants and animals) protected in Pu'u Ali'i NAR. Some common native plants may be damaged during fence construction, but not to any significant degree. Regeneration of vegetation after removal of ungulates is expected to more than offset damage incurred during construction. No archaeological sites have been identified in the immediate vicinity of the fence alignment. The project may indirectly benefit the preservation of sites in the area, as trampling and soil disturbance by hooved animals will be stopped. The long-term goal of the proposed action is not loss or destruction of any natural or cultural resource, but protection and enhancement of existing native forest, watershed, and habitat for native plants and animals.

2. *Curtails the range of beneficial uses of the environment.*

The proposed action will not curtail beneficial uses of the environment. Instead, the project will protect important native forest, watershed, and habitat. Appropriate public access to and use of the area will not be affected. The site will remain open space, managed as a NAR. The only use that will be curtailed over the long-term is the hunting of feral animals in an approximately 484-acre area; hunting will continue to be available in many areas nearby. Protection of the watershed and native species through fencing increases the beneficial uses of the environment.

3. *Conflicts with the state's long term environmental policies or goals and guidelines as expressed in Chapter 344, Hawai'i Revised Statutes (HRS), and any revisions thereof and amendments thereto, court decisions, or executive orders.*

The proposed action is consistent with the environmental policies established in Chapter 344, HRS, contributes to the conservation of threatened and endangered species, as covered by Chapter 195D, HRS, and implements the mandate of Chapter 195, HRS, establishing the natural area reserve system and encouraging that actions be taken which "...preserve in perpetuity specific land and water areas which support communities, as unmodified as possible, of the natural flora and fauna..." The fencing implements the goals and objectives of the East Moloka'i Watershed Partnership and is consistent with the policies outlined in the Memorandum of Understanding of the Hawai'i Association of Watershed Partnerships. Finally, protection of the native forest of Moloka'i at Pu'u Ali'i implements the Hawai'i Comprehensive Wildlife Conservation Strategy (2005), the Recovery Plan for Multi-Island Plants (1999) and for the Moloka'i Plant Cluster (1996), and the Revised Recovery Plan for Hawaiian Forest Birds (2006).

4. *Substantially affects the economic or social welfare of the community or state.*

The proposed fencing will not substantially affect the economic or social welfare of the community or State. Fencing is not expected to have negative impact on the economy, as there is no present economic use of the site, and funds for implementation are coming from grants and normal government operational budgets. Social impacts are expected to be positive, as the community will benefit from the protection and restoration of this unique example of Moloka'i's rapidly vanishing natural heritage, in the form of improved opportunities for nature appreciation, education, and research. Community members will benefit from the recovery of meat from animals taken by volunteer hunters as animals are removed from the enclosure.

5. *Substantially affects public health.*

The proposed fencing is not anticipated to substantially affect public health. The project site is in remote wilderness. The nearest urban area is at Kalaupapa settlement, several miles away. Implementation is not expected to create any off-site effects, other than short-term noise generated by small power tools, and occasional use of helicopters.

6. *Involves substantial secondary impacts, such as population changes or effects on public facilities.*

The proposed fencing is not anticipated to result in any substantial secondary impacts. No public facilities will be impacted. No change of population will result from this project.

7. *Involves a substantial degradation of environmental quality.*

The proposed fencing does not involve a substantial degradation of environmental quality. Instead, the intent of the project is to improve environmental quality by protecting and restoring a native forest system. Off-site benefits may include reduced soil erosion and watershed enhancement; improving stream water quality, nearshore water quality, and the health of reef ecosystems.

8. *Is individually limited, but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.*

The proposed fencing is a stand-alone project that will affect only this one site. Other forest/watershed protection projects are being developed on Moloka'i; a regional conservation plan that addresses all of these sites and allows for leveraging of resources should be addressed by the East Moloka'i Watershed Partnership, but is beyond the scope of this document. Any cumulative effect on the environment of these forest/watershed protection projects is anticipated to be positive.

9. Substantially affects a rare, threatened or endangered species or its habitat.

The project will not negatively affect a rare, threatened or endangered species or its habitat. The purpose of the project is to protect a native Hawaiian rain forest, and the plant and animal species found therein. Numerous rare plant species are known from Pu'u Ali'i NAR; all will benefit from increased protection, as will other species that could potentially be reintroduced to the area. The project site is within an area proposed as critical habitat for plants by the U.S. Fish and Wildlife Service; the project implements recommendations of the Service for endangered species recovery. The fencing will also provide a benefit to native forest birds by protecting potential habitat, as recommended by the Revised Recovery Plan for Hawaiian Forest Birds and the Recovery Plans for Multi-Island Plants and the Moloka'i Plant Cluster.

10. Detrimentially affects air or water quality or ambient noise levels.

The proposed fencing will have no detrimental effects on air quality, water quality or noise levels. Some noise will be generated during fence construction, primarily from small power equipment and hand tools, with occasional operation of helicopters. This activity will take place only during daylight hours, and far from any residential area. Construction noise will be localized and temporary. Over the long term, regional water quality may be improved when increased vegetative cover reduces soil erosion.

11. Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

The project area is in an environmentally sensitive, high rainfall area, prone to landslides due to extremely steep terrain. The final fence alignments will be set back from cliffs, and where gulches are crossed, natural barriers such as waterfalls will be used to minimize stream crossings. There is a remote possibility that the fencing could be damaged by a storm event or landslide. However, the value of protective fencing that excludes feral ungulates from native forest outweighs the potential costs associated with loss of fencing due to damage. The proposed action will not damage, but protect, environmentally sensitive areas.

12. Substantially affects scenic vistas or view planes identified in county or state plans or studies.

The project is within the Kalaupapa National Historic Park, as well as the Moloka'i Cliffs National Natural Landmark. The project has been designed not to affect the scenic quality of these areas. Fence alignments will be chosen to use terrain and vegetation to screen the fence from public view. For the most part, the fence is not anticipated to be visible to most residents or visitors due to the remote location of the fencing. Based on experience with fences in similar terrain and elevation, the fencing is not expected to be noticeable from a distance. As a result, the project is not anticipated to negatively affect scenic vistas or view planes of the area.

13. Requires substantial energy consumption.

The proposed fencing project will not require substantial energy consumption, but instead will consume small amounts of energy during construction through the use of small power tools and the transportation of materials and crew. After completion of the project, there will be minimal demand for energy use, limited to periodic helicopter flights to support fence maintenance.

LIST OF PERMITS REQUIRED

Construction of the project requires permission of the Department of Land and Natural Resources. No other permits are anticipated at this time.

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Figure 2: Contour Map of Pu'u Ali'i NAR Vicinity

Figure 3: Pu'u Ali'i Ungulate Activity During Hunting Test

Figure 4: Location of Pu'u Ali'i State Natural Area Reserve Within Kalaupapa National Historical Park

Figure 5: Construction Drawings

Appendix 1: Comments received during NEPA, Chapter 343, and NHPA Section 106 Scoping

Appendix 2: Comments and responses to comments received during Public Comment Period

TABLE 1
RARE PLANTS OF PU‘U ALI‘I NATURAL AREA RESERVE

Scientific Name	Federal Status	Status in Reserve
<i>Adenophorus periens</i>	E	?
<i>Bidens wiebkei</i>	E	?
<i>Canavalia molokaiensis</i>	E	?
<i>Clermontia oblongifolia</i> ssp. <i>brevipes</i>	E	?
<i>Cyanea procera</i>	E	?
<i>Cyanea profuga</i>	SOC	?
<i>Cyanea solanaceae</i>	SOC	?
<i>Cyanea solenocalyx</i>	SOC	*
<i>Cytrandra biserrata</i>	SOC	*
<i>Cyrtandra halawensis</i>	SOC	?
<i>Cyrtandra hematos</i>	SOC	?
<i>Cyrtandra macrocalyx</i>	SOC	x
<i>Diella erecta</i>	E	?
<i>Eurya sandwicensis</i>	SOC	x
<i>Exocarpos gaudichaudii</i>	SOC	?
<i>Gardenia remyi</i>	SOC	?
<i>Haplostachys linearifolia</i>	---	?
<i>Hedyotis mannii</i>	E	?
<i>Hesperomannia arborescens</i>	E	?
<i>Hibiscus kokio</i> ssp. <i>kokio</i>	SOC	?
<i>Huperzia sulcinervia</i>	---	?
<i>Joinvillea ascendens</i> ssp. <i>ascendens</i>	C	x
<i>Lagenifera maviensis</i>	SOC	?
<i>Lobelia dunbarii</i> ssp. <i>dunbarii</i>	SOC	?
<i>Lobelia dunbarii</i> ssp. <i>paniculata</i>	SOC	?
<i>Lobelia hypoleuca</i>	---	*
<i>Lysimachia ternifolia</i>	---	?
<i>Melicope reflexa</i>	E	?
<i>Phyllostegia mannii</i>	E	*
<i>Phyllostegia mollis</i>	E	?
<i>Phyllostegia stachyoides</i>	SOC	?
<i>Plantoago princeps</i> var. <i>laxiflora</i>	E	?
<i>Plantathera holochila</i>	E	?
<i>Ranunculus mauiensis</i>	C	?
<i>Schiedea diffusa</i>	SOC	?
<i>Schiedea pubescens</i> var. <i>pubescens</i>	C	?
<i>Sicyos cucumerinus</i>	SOC	?
<i>Stenogyne bifida</i>	E	?
<i>Vandenboschia draytoniana</i>	---	x
<i>Zanthoxylum hawaiiense</i>	E	x

Federal Status:	Status in Reserve:
SOC = Species of Concern	* = confirmed, seen during 1989 survey or later.
E = Endangered	x = cited in recent literature but not observed during survey.
C = Candidate for listing	? = historically known from the vicinity/similar habitat; no recent observations.

Based on Pu‘u Ali‘i Management Plan (1991).
Taxonomy follows Wagner et. al. (1990) revised

TABLE 2
RARE BIRDS OF PU‘U ALI‘I NATURAL AREA RESERVE

Scientific Name (Common Name)	Population Estimate (Moloka‘i) ¹	Federal/State Status ²	HHP Rank ³
<i>Myadestes lanaiensis rutha</i> (Moloka‘i thrush or oloma‘o)	19 ± 38	LE	1
<i>Paroreomyza flammea</i> (kākāwahie, Moloka‘i creeper)	(poss. extinct)	LE	H
<i>Vestiaria coccinea</i> (‘i‘iwi)	80 ± 65	E	1

¹ Birds/km² with a 95% confidence interval (Scott et al. 1986)

² Key to Federal/State Status:

LE Endangered (USFWS 1989)

E Moloka‘i population considered endangered by the State of Hawai‘i only (DLNR 1986)

³ Key to Hawai‘i Heritage Program Ranks:

1 Critically imperiled globally (typically 1-5 occurrences)

H Historically known; no observations since 1972 throughout its range

TABLE 3
RARE SNAILS OF PU‘U ALI‘I NATURAL AREA RESERVE

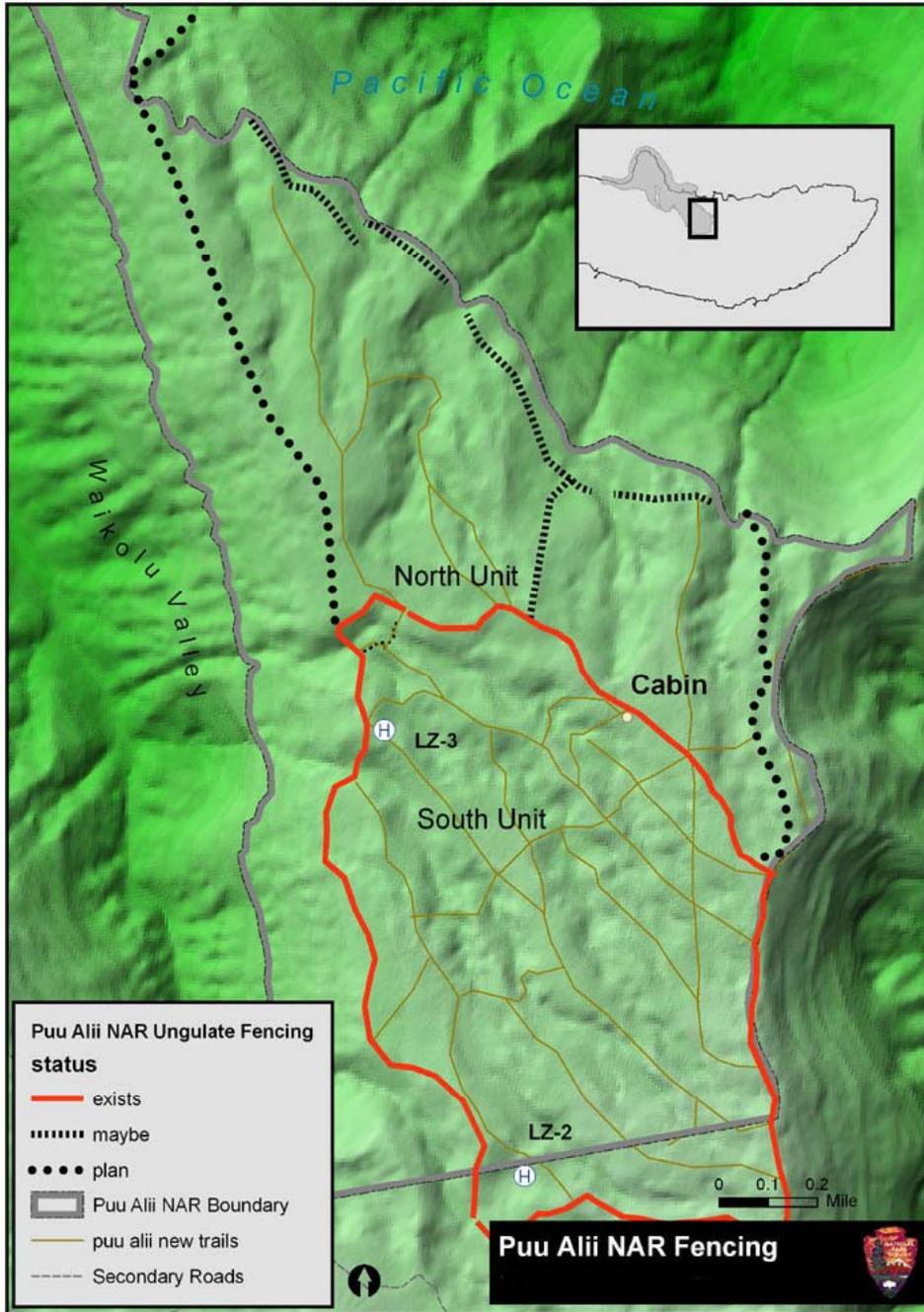
Scientific Name	Current Occurrences in Reserve ¹	HHP Rank ²
<i>Partulina mighelsiana</i>	2	1
<i>Partulina proxima</i>	1	1
<i>Partulina redfieldii</i>	2	1
<i>Partulina tessellata</i>	2	1

¹ Current occurrences reported since 1972

² Key to Hawai‘i Heritage Program Ranks:

1 Critically imperiled globally (typically 1-5 occurrences)

Figure 1. Map of Proposed and Existing Fencing, Pu'u Ali'i NAR



C:\GIS\Working_data\Natural_Resources\PuuAliiNARFencesA.mxd

Figure 2: Pu'u Ali'i Ungulate Activity During Hunting Test

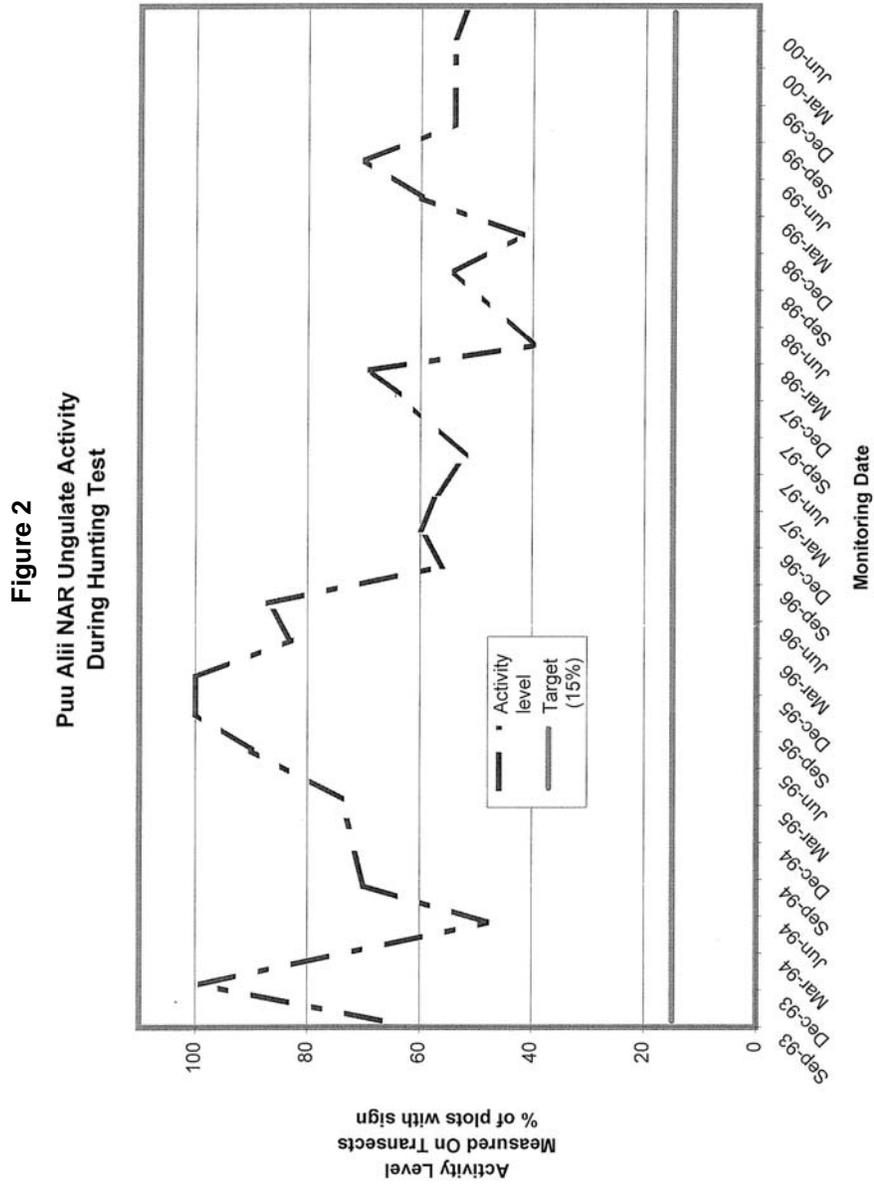
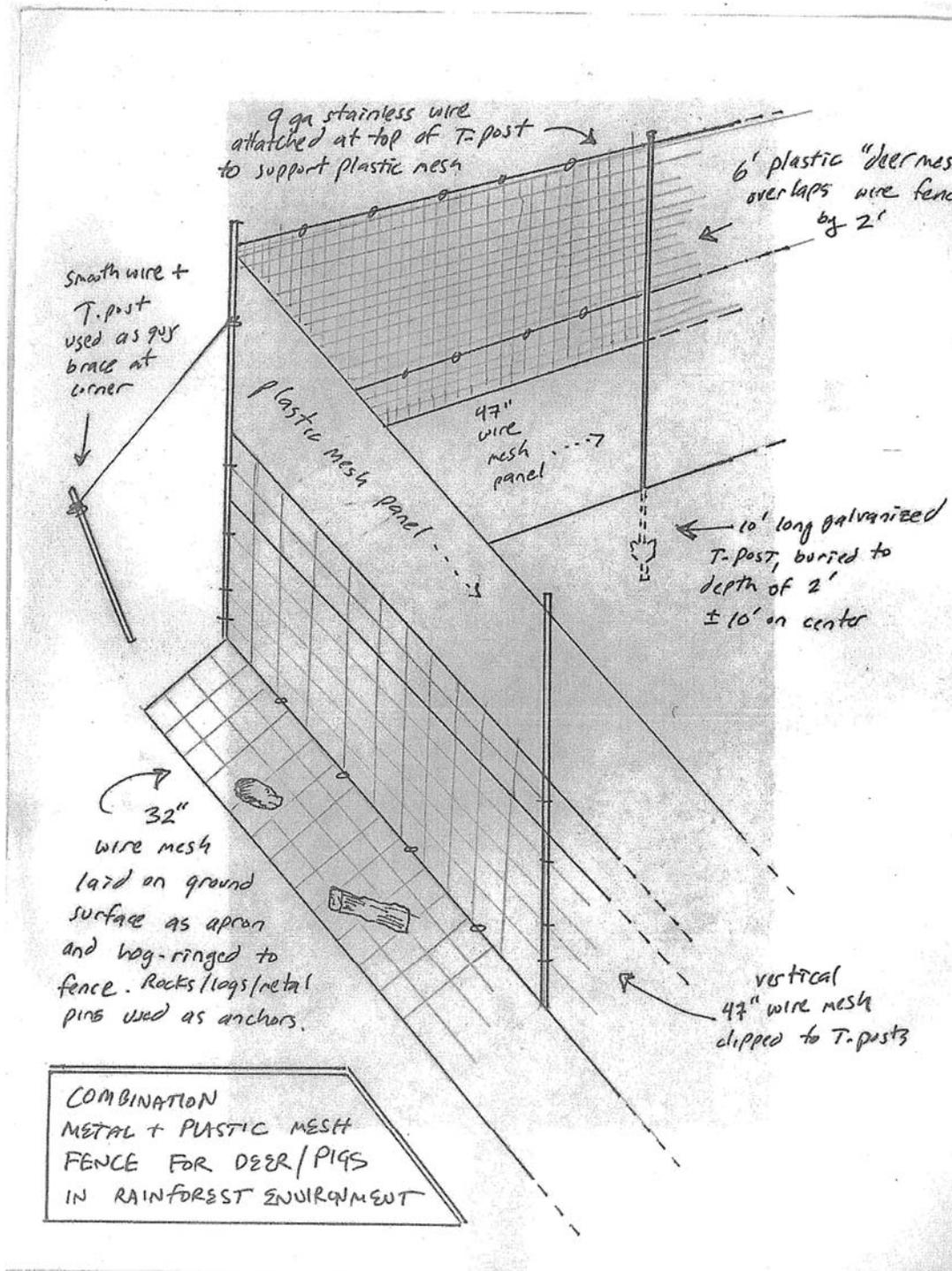
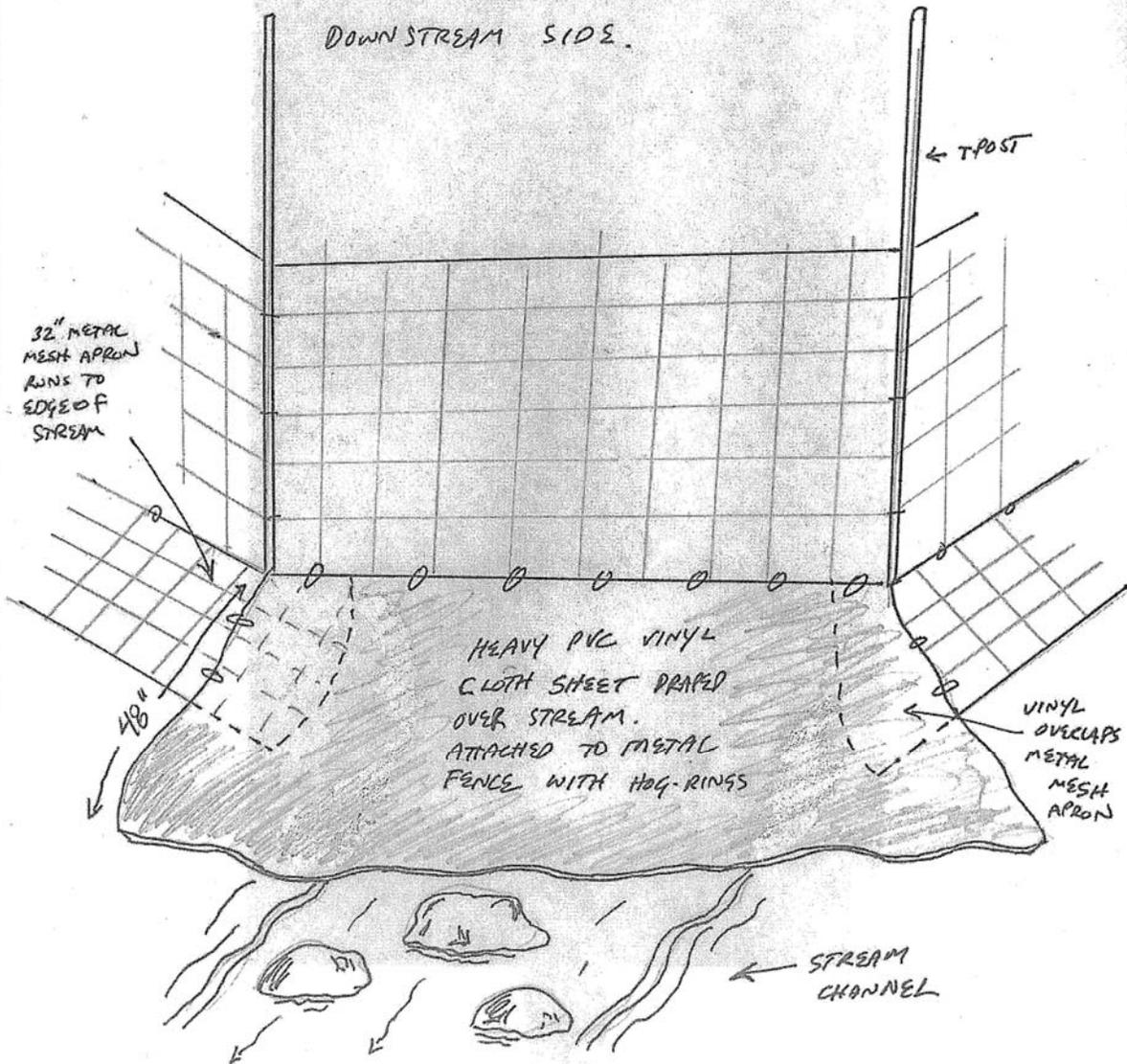


Figure 3: Construction Drawings



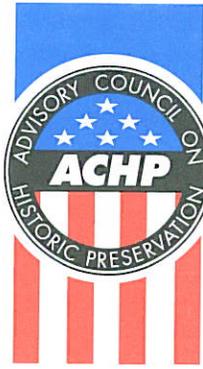
CURTAIN TYPE "STREAM GUARD"

USED WHERE FENCE CROSSES STREAMS
ALLOWS HIGH WATER FLOWS AND DEBRIS TO
PASS BELOW FENCE, BUT ANIMALS CANNOT
LIFT IT TO ENTER FROM
DOWNSTREAM SIDE.



**Appendix 1: Comments received during
NEPA, Chapter 343, and NHPA Section 106 Scoping**

- Advisory Council on Historic Preservation
- Office of Hawaiian Affairs
- Department of Land and Natural Resources, State Historic Preservation Division
- County of Maui, Department of Public Works and Environmental Management, Development Services Administration
- Historic Hawaii Foundation



Preserving America's Heritage

April 20, 2007

Mr. Tom Workman
Superintendent
Kalaupapa National Historical Park
P.O. Box 2222
Kalaupapa, HI 96742

Ref: Scoping Notice for Proposed Construction of 484 Acre Pu'u Ali'i Natural Area Reserve Fence Unit at Kalaupapa National Historical Park and Use of NEPA Process for Section 106 Purposes pursuant to 36 CFR 800.8(c)

Dear Mr. Workman:

The Advisory Council on Historic Preservation (ACHP) recently received your notification of the scoping process to develop an Environmental Assessment and the Kalaupapa National Historic Park's intent to follow 36 CFR §800.8(c) to meet its section 106 obligations for the referenced undertaking.

We have no preliminary comments at this time, however, we do recommend you continue consultation with the Hawaii State Historic Preservation Office, Native Hawaiian organizations, the State of Hawaii, Department of Land and Natural Resources, and any other consulting parties on all potential impacts that may occur to historic properties.

Thank you for providing us with this notification, and we will look forward to learning more about this project as this process moves forward. If you have any questions, please contact Kelly Yasaitis Fanizzo at (202) 606-8583, or by email at kfanizzo@achp.gov.

Sincerely,

Reid Nelson
Assistant Director
Federal Property Management Section
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION

1100 Pennsylvania Avenue NW, Suite 809 • Washington, DC 20004
Phone: 202-606-8503 • Fax: 202-606-8647 • achp@achp.gov • www.achp.gov



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

HRD06/2504B

April 23, 2007

Thomas Workman, Superintendent
United States Department of the Interior
National Park Service
Kalaupapa National Historical Park
P.O. Box 2222
Kalaupapa, HI 96742

RE: Section 106 and ARPA Consultation for Archaeological Investigations at Kalaupapa National Historic Park, 2007 Summer Field Session, Kalaupapa National Historic Park, Moloka'i.

Dear Mr. Workman,

The Office of Hawaiian Affairs (OHA) is in receipt of your March 19, 2007 submission and offers the following comments:

Our staff has three requests regarding the above-listed submittal:

- 1) That the applicant and National Park Staff formally invite a representative from OHA's Moloka'i office to participate in the 2007 field research session.
- 2) That a copy of 2007 field research results, in a final draft, be submitted to our O'ahu and Moloka'i offices.
- 3) That an electronic copy of all collected GPS data be submitted to our O'ahu office.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck, Native Rights Policy Advocate, at (808) 594-0239 or jessey@oha.org.

Aloha,

A handwritten signature in black ink, appearing to read "Clyde W. Nāmu'o".

Clyde W. Nāmu'o
Administrator

CC: Irene Ka'ahanui
OHA Community Affairs Coordinator (Moloka'i)
P.O. Box 1717
Kaunakakai, HI 96748



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

HRD07/1202C

May 7, 2007

Thomas Workman, Superintendent
United States Department of the Interior
National Park Service
Kalaupapa National Historical Park
P.O. Box 2222
Kalaupapa, HI 96742

RE: Scoping Notice for the Construction of a 484 Acre Pu'u Ali'i Natural Area Reserve Fence Unit, Kalaupapa National Historical Park, Kalaupapa, Moloka'i, TMK: (1) 9-1-016: 24.

Dear Mr. Workman,

The Office of Hawaiian Affairs (OHA) is in receipt of your April 9, 2007 submission and offers the following comments:

It is not anticipate that the above-listed ungulate fencing project will have any adverse impacts on the natural or cultural resources of Kalaupapa National Historical Park. OHA is generally supportive of such projects and looks forward to reviewing the Environmental Assessment upon completion. Thank you for your continued correspondence.

OHA asks that, in accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if the project moves forward, and if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division (SHPD/DLNR) shall be contacted.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck, Native Rights Policy Advocate, at (808) 594-0239 or jessey@oha.org.

Aloha,

A handwritten signature in black ink that reads "Clyde W. Nāmu'o".

Clyde W. Nāmu'o
Administrator

C: Irene Ka'ahanui
OHA Community Affairs Coordinator (Moloka'i)
P.O. Box 1717
Kaunakakai, HI 96748

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCES MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONSERVANCIES
COMMISSION ON WATER RESOURCES MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

April 20, 2007

Mr. Thomas Workman
U.S. Department of Interior
National Park Service
Kalaupapa National Historical Park
P.O.B. 2222
Kalaupapa, HI 96742

LOG NO: 2007.0879
DOC NO: 0704NM15
Archaeology

Dear Mr. Workman:

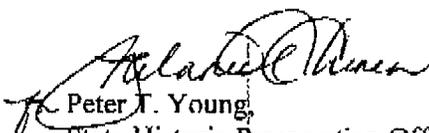
**SUBJECT: National Historic Preservation Act (NHPA) Section 106 Review –
Scoping Notice Construction of 484 acres Pu'u Ali'i Natural Area Reserve
Fence Unit at Kalaupapa National Historical Park
Kalaupapa, Molokai Island
TMK: (2) 6**

Thank you for your letter of April 4, 2007 for the 484-acre fence construction at Pu'u Ali'i project which our office has been involved with in the past. We recommend that an archaeological assessment be conducted and that an assessment team walk the proposed fence line. This team should include an archaeologist, biologist and fence project supervisor who will be flagging the proposed fence alignment to determine whether historic sites or native plants are in the proposed path. If the proposed alignment impacts historic sites we recommend it be realigned and a minimum protective buffer established away from the historic sites. If no historic sites are found, then a quick assessment report will be required giving this project a 'no effect' determination.

If historic sites are found an in-depth report (archaeological inventory survey, which shall describe the proposed mitigation) will be needed. In some cases, realignment of the fence will be acceptable mitigation and in perhaps other situations, monitoring or further archaeological work will be warranted.

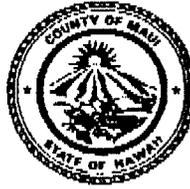
If you have any questions, please contact Nancy McMahon, our Kauai/Molokai Archaeologist at (808) 742-7033.

Aloha,


Peter T. Young
State Historic Preservation Officer

NM:rtp

CHARMAINE TAVARES
Mayor
MILTON M. ARAKAWA, A.I.C.P.
Director
MICHAEL M. MIYAMOTO
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT
DEVELOPMENT SERVICES ADMINISTRATION
250 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793
April 20, 2007

RALPH M. NAGAMINE, L.S., P.E.
Development Services Administration
DAVID TAYLOR, P.E.
Wastewater Reclamation Division
CARY YAMASHITA, P.E.
Engineering Division
BRIAN HASHIRO, P.E.
Highways Division
TRACY TAKAMINE, P.E.
Solid Waste Division

Mr. Tom Workman
KALAUPAPA NATIONAL HISTORICAL PARK
P.O. Box 2222
Kalaupapa, HI 96742

Subject: ENVIRONMENTAL ASSESSMENT
FOR PU'U ALI'I NATURAL AREA RESERVE AT KALAUPAPA
NATIONAL HISTORICAL PARK

Dear Mr. Workman.

We reviewed the subject application and have no comments at this time.

Please call Michael Miyamoto at 270-7845 if you have any questions regarding this letter.

Sincerely,

A handwritten signature in black ink, appearing to read "Milton M. Arakawa".

Milton M. Arakawa, A.I.C.P.
Director of Public Works
and Environmental Management

HISTORIC HAWAII FOUNDATION

April 20, 2007

Tom Workman
Superintendent
Kalaupapa National Historical Park
P.O. Box 2222
Kalaupapa, HI 96742

RE: Scoping Notice and Section 106 Consultation for Pu'u Ali'i Natural Area Reserve Fence at Kalaupapa National Historical Park

Dear Mr. Workman:

Thank you for providing the opportunity to comment on the proposal to construct a fenced enclosure of the Pu'u Ali'i Natural Area at Kalaupapa NHP.

Since 1974, Historic Hawai'i Foundation (HHF) has been a statewide leader for historic preservation. HHF's mission is to preserve and encourage the preservation of Hawai'i's historic buildings, places, objects and communities.

Historic Hawai'i Foundation concurs with the purpose and need for the project, to protect important habitat for native plants, birds and invertebrates, as well as watershed protection.

Because of the density of important historic and cultural resources on the Kalaupapa peninsula, the location, construction method and access to the fence should be done carefully and sensitively to avoid impacts to these resources. I am pleased to be able to participate in the NHPA Section 106 consultation process as these design issues are addressed.

I look forward to working with you on this project. Please let me know if you have any questions.

Very truly yours,



Kiersten Faulkner
Executive Director



**Appendix 2: Comments and Responses to Comments
Received during Public Comment Period**

- U.S. Fish and Wildlife Service
- Advisory Council on Historic Preservation
- Office of Hawaiian Affairs
- Department of Land and Natural Resources, State Historic Preservation Division
- County of Maui, Department of Public Works and Environmental Management, Development Services Administration
- Joyce Kainoa



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122, Box 50088
Honolulu, Hawaii 96850

In Reply Refer To:
2007-I-0251

SEP 12 2007

Memorandum

To: Guy D. Hughes, Chief Natural Resources Management, Kalaupapa National Historical Park, National Park Service

From: *Christa Russell*
for Field Supervisor, Pacific Islands Fish and Wildlife Office
Honolulu, Hawaii

Subject: Informal Consultation for the Puu Alii Natural Area Reserve Conservation Fencing Project, Kalaupapa National Historical Park, Molokai, Hawaii

This memorandum is in response to your August 9, 2007, letter requesting informal section 7 consultation. We received your letter on August 13, 2007. You are proposing to construct a fence approximately 5 miles long to enclose 484 acres of the most pristine part of the rainforest within the Puu Alii Natural Area Reserve (NAR), Molokai, Hawaii (proposed project). As a part of the proposed project, all feral ungulates (pigs and goats) within the 484 acres would subsequently be removed.

The following endangered birds are known from or nearby the Puu Alii NAR: Molokai creeper or kakawahie (*Paroreomyza flammea*) and Molokai thrush or olomao (*Myadestes lanaiensis rutha*). The threatened Newell's shearwater or ao (*Puffinus auricularis newelli*) and the endangered Hawaiian petrel or uau (*Pterodroma sandwichensis*) have been documented nearby the Puu Alii NAR. The following endangered plants are known from or nearby the Puu Alii NAR: *Adenophorus periens*, *Bidens wiebkei*, *Brighamia rockii*, *Canavalia molokaiensis*, *Centaurium sebaeoides*, *Clermontia oblongifolia* ssp. *brevipes*, *Cyanea procera*, *Diellia erecta*, *Hedyotis mannii*, *Hesperomannia arborescens*, *Lysimuchia maxima*, *Melicope reflexa*, *Panicum fauriei* var. *carteri*, *Phyllostegia mannii*, *Phyllostegia mollis*, *Plantago princeps* var. *laxiflora*, *Platanthera holochila*, *Stenogyne bifida*, and *Zanthoxylum hawaiiense*. The federally threatened plant *Tetramolopium rockii* var. *rockii* is also known from or nearby the Puu Alii NAR. Additionally, 15 critical habitat units are within or intersect the Puu Alii NAR (Enclosure). This response is in accordance with section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), as amended (Act).

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The findings and recommendations in this consultation are based on: (1) your August 9, 2007, letter requesting section 7 consultation; (2) the Draft Environmental Assessment (EA) Puu Alii Conservation Fencing Project, received on August 13, 2007; (3) phone conversations between you and Holly Herod of the U.S. Fish and Wildlife Service (Service) on August 22, 2007, and August 28, 2007; (4) electronic mail (email) exchanges between you and Holly Herod on September 4, 2007 and September 6, 2007; and (5) other information available to us. During the August 22, 2007, phone conversation we recommended that Newell's shearwater and Hawaiian petrels be reviewed during this consultation. On September 9, 2007, you also granted us an extension on this memorandum until Sept 18, 2007.

Project Description

The proposed project will construct approximately 5 miles of new ungulate-proof fence and connect to existing fencing. The new fence will follow the rims of Pelekunu and Waikolu valleys and will deter animals from entering the northern portion of the Puu Alii NAR. Short segments of strategic fencing will also be constructed along selected ridgelines on the northern boundary to further restrict animal entry into the northern unit. The near vertical drop of the sea cliffs along the northern boundary is expected to serve as a barrier to animal intrusion along the edge of the enclosure. Monitoring of the area will determine the success of the fences. If ungulates are entering the area from the sea cliffs, short strategic fences may also be constructed to restrict animal movement. Strategic fencing on ridges connected to waterfalls may also be necessary to prevent ungulate intrusion.

To construct the fencing, a corridor no wider than 4 feet will be cleared of vegetation by power and non-power hand tools. Final fence alignments will be selected to minimize removal of native trees and vegetation. Clearing of vegetation will occur between November 2007 and June 2008. Construction of the fence is weather dependent and will begin between May and September 2008. Fence construction will involve driving 10-foot, galvanized t-posts into the ground approximately 8 feet apart. Steel woven wire mesh that is 3 to 4 feet high will be attached to the outside of the posts, and 4-foot plastic deer mesh will be hung on the top from a wire. A single strand of smooth wire will run along the top of the fence and a strand of barbed wire or an apron of hog wire will be laid along the base of the fence to prevent pig intrusion. Self-closing swinging gates will be installed at historical access points and other areas for hunting and management activities. Weed control around the fence corridor may be needed until native vegetation is re-established and will be accomplished through the careful use of a grass-specific herbicide, used at low concentrations.

All supplies, materials, equipment, and construction crew will be transported to the area by helicopters. Temporary campsites may be established to support fence construction and future maintenance and management activities. The temporary campsites will use 12-inch cement blocks to serve as footings for three platforms to include: (1) 16-foot by 16-foot reinforced helicopter landing pad, (2) 34-foot by 16-foot camping platform with two polyvinyl shed and water catchments; and (3) a 4-foot by 4-foot outhouse platform mounted with a custom removable outhouse with tank that will be flown in and out, and will be pumped and disposed of by a certified waste management company. High use campsite trails may be maintained with removable concrete grass blocks to support soft areas and reduce the impacts of high-frequency

foot traffic between platforms. All temporary platforms will be removed once construction of the fence is completed, approximately October 2009.

Upon completion of the new fences, all ungulates will be removed from the northern unit with volunteer hunters. The removal of the last few animals will require using alternative methods such as baiting and trapping or snaring inside the enclosure. Alternative measures for ungulate removal have not been defined at this time. The fenced area will be monitored for ungulate intrusion and the fencing will be inspected and maintained on a regular basis. Once ungulates have been removed, outplantings of rare plants, including listed species, within Puu Alii NAR may be considered.

Conservation Measures

The following are conservation measures proposed within the EA and/or phone conversations, and emails to avoid effects to the listed species and critical habitat units reviewed in this informal consultation and are considered part of the project description.

Avoidance of Listed Species

1. Rare plant surveys were conducted between May 14 and 18, 2007, along the proposed boundaries to preliminarily define the alignment of the fence. When rare, endangered, or threatened species were located, the fence corridor was rerouted to avoid the plants by a minimum of 2 to 3 meters from the edge of the cleared fence corridor and will be aligned so that the plants are within the fence boundary to receive the benefit of protection from ungulates.
2. Future plant surveys will be conducted by botanists, for strategic fencing and all final fence corridors before any construction activities commence to confirm that the final alignment avoids sensitive natural resources, including endangered or threatened plants, as described above.
3. The fence alignments will also be selected to minimize the removal of live native trees, particularly ohia (*Metrosideros polymorpha*) and native shrubs.
4. If any new temporary campsites and platforms are needed, plant surveys will be conducted and platforms will be located such that any endangered or threatened plants are avoided by a minimum of 2 to 3 meters from pathways and platforms. Any new campsites, helicopter pads, and outhouse platforms will be placed outside of critical habitat.
5. All fence construction activities, including the clearing of the corridor will be carried out under the direct supervision of trained Kalaupapa National Historical Park (NHP) and/or Puu Alii NAR personnel and fence construction crews will consist of experienced Kalaupapa NHP and/or Puu Alii NAR staff.
6. Concurrent with brush removal, day time surveys to determine the presence or absence of a nesting colony of Newell's shearwaters and/or Hawaiian petrels will be conducted

along the fence corridor. The surveys will examine the habitat for fresh and historic burrows under plants, whitewash, feathers, and other evidence of nests and nestlings. If evidence of breeding is detected, the fence will be realigned so that it incorporates the colony within the fence including an adequate buffer area from the fence (so that the birds are protected from future ungulate damage). If this type of realignment is not feasible, then the realignment will be situated so that the colony is not divided and burrows are not disturbed. If active nests are located, brush clearing will cease until nestlings have fledged.

7. Kalaupapa NHP and/or Puu Alii NAR personnel will coordinate with State of Hawaii, Division of Forestry and Wildlife to conduct night time seabird surveys on Molokai in the spring, prior to fence construction.
8. Results from both day time and night time seabird surveys will be provided to the Service.
9. If Newell's shearwaters or Hawaiian petrels are heard near the Puu Alii NAR, campsite lighting will be down-shielded so as to not attract any potential fledglings.
10. In areas where the canopy or vegetation is open and the fence is visible or the fence is above the canopy line, white flagging will be added to the fence design (see Swift 2004) to prevent Newell's shearwaters or Hawaiian petrels from colliding with the fence.

Erosion Control

11. Vegetation cut for the fence corridor will be left to decompose which may provide opportunities for re-colonization of these species and may provide a benefit for erosion control. (No rare or federally protected species will be cut or cleared.)
12. To further prevent any erosion, high use campsite trails may be maintained with removable concrete grass blocks to support soft areas and reduce the impacts of high-frequency foot traffic between existing platforms.

Invasive Species Prevention and Control

13. Precautions will be taken to prevent spreading non-native plants already found in the project area. Invasive grasses will be controlled with a grass-specific herbicide applied at low levels. We request that the herbicide be applied by a certified applicator or under the supervision of a certified applicator.
14. Boots, equipment and materials, will be inspected for seeds, eggs, larvae, etc., prior to delivery and/or entry into the project area, and cleaned as necessary by each member of the construction crews. We request that you ask any hunters to implement the same inspection procedures.
15. Construction crews and hunters will prevent the spread or introduction of ohia rust into the area. No infected plants or plant parts will be transported into Puu Alii NAR. Prior

to boarding the helicopter all clothing, equipment, materials, and supplies will be inspected for organic material and soil and any debris will be removed. When possible only move people and equipment between the Puu Alii NAR and areas with ohia rust during the dry season. Prior to transporting crew or hunters, all clothing equipment, materials and supplies (as appropriate) should be sprayed with a disinfectant, such as Lysol, to achieve a greater level of sanitation. These recommendations are from protocols to prevent the spread of the fungus *Phytophthora ramorum* which causes sudden oak death (Anonymous 2007).

16. All construction workers will be instructed on specific procedures to prevent the spread or introduction of noxious non-native plants in the project area.
17. All food refuse, tools, gear, and construction scrap will be removed upon completion of work in order to prevent the attraction of non-native pests (i.e., rats or mongoose).

Other

18. Though fire risk is extremely low due to the high levels of precipitation in the area (100 to 300 inches/year) precautions will be taken to ensure that fire does not ignite while cooking at campsites.

The proposed project will enable long-term protection of the Puu Alii NAR from ungulates and allow for the natural recovery of the ecosystem and restoration of rare and endangered species known from the area. Most recent observations of the Molokai creeper (1968) and Molokai thrush (1988) within the area are older and recent avian surveys have failed to document these species (USFWS 2006). However, there was an unconfirmed sighting of the Molokai thrush in 2005 (USFWS 2006). Also, the proposed activities are generally short-term in nature (minor vegetation clearing, construction, helicopter disturbance, hunting) and could cause flushing if the birds are present but would be unlikely to alter breeding, feeding, sheltering, or dispersal habitats. As closed forest appeared to be the preferred habitat of these two species, the fencing and removal of feral ungulates will benefit the habitat of these species by allowing the natural recovery of the area and filling in of the understory and canopy. We determined that the proposed project may affect but is not likely to adversely affect the Molokai creeper and the Molokai thrush because the unlikelihood of the two birds being present (USFWS 2006), native tree species that would be used by the two bird species (ohia and kolea (*Myrsine spp.*) and ohia forests) would be left in place or trimmed slightly, and the short-term nature of potential effects would be considered insignificant or discountable.

Day and Cooper (2002) determined from timing and movement data, that the threatened Newell's shearwater and the endangered Hawaiian petrel may still occur on Molokai and were entering valleys near or within the study area and may be nesting on the island as well. However, Day and Cooper (2002) caution that their data are not supported by visual verifications. The habitat along the fence corridor is silty, red clay substrates, with bryophytes covering shrubs and ferns covering soils in a wet ohia forest. However, no burrows in the soil or rock out croppings, and no other evidence of active nests were detected along the fence corridor during the previous plant surveys. Also, neither of the species has been heard calling within or near the forest.

Seabird surveys (described under Conservation Measures) conducted prior to brush removal and construction will provide conclusive evidence of the presence or absence of a breeding colony within the proposed project area. If present, the colony will be avoided as described in the conservation measures and the Service will be contacted.

Hawaiian petrel mortality has been documented due to collision with fences 1.2 meters high (Swift 2004 *in litt.*). However, collisions generally occur in open, unvegetated areas/areas of low growing vegetation, areas without a canopy, or where the fence is the tallest obstacle in the landscape. Swift (2004) reports that Hawaiian petrels use sight, as the dominant sense, to avoid fences and that in her study, the birds generally avoided fences but she did observe one collision on a foggy night. The study also suggests that the addition of white flagging to the fence can reduce the risk of a fence strike as the fence could be detected at a greater distance.

The majority, if not all, of the proposed fence will be below the canopy line and though vegetation in the fence corridor will be cleared for construction, it should quickly grow back. The fence design including the use of fence flagging in appropriate places, would make collisions with the fence unlikely to occur. Therefore, due to the implementation of the conservation measures above, we determined that the proposed project may affect but is not likely to adversely affect the Newell's shearwater or Hawaiian petrel.

We also concur that the proposed project is not likely to adversely affect and would be completely beneficial to the 20 endangered and threatened plant species. We made this determination because the proposed project has incorporated the conservation measures above to avoid all effects to the plant species. Furthermore, feral ungulate trampling, grazing, and browsing of these species and the subsequent habitat disturbance and increase of non-native vegetation is generally identified as the greatest threat to these plant species (USFWS 1994, 1996a, 1996b, 1998a, 1998b, 1999). Preventing ungulate intrusion and eliminating ungulates within Puu Alii NAR will greatly contribute to the recovery of these species.

We also determined that the proposed project is not likely to adversely affect the 15 critical habitat units that are nearby or intersect with Puu Alii NAR as the impacts are insignificant or discountable. We made this determination because the proposed project has incorporated the conservation measures above to avoid impacts to the plant critical habitat units. Furthermore, preventing ungulate intrusion will reduce ground disturbance and erosion which, if left unchecked may impact the ability of the soils and surrounding habitat to maintain the function (supporting the primary constituent elements) of the critical habitat units for the respective plant species.

Thank you for the opportunity to review the proposed project. We appreciate the leadership and stewardship that Kalaupapa NHP and Puu Alii NAR are putting forth to protect and further the recovery of rare and federally protected species and their habitats in the Puu Alii NAR. We encourage the outplanting of rare and listed species once ungulates are removed and recommend coordination with our office prior to outplanting so that we may update our species status and baseline information and provide assistance with consultation, if needed. We also request that

Mr. Guy D. Hughes

7

you contact us prior to initiating alternative ungulate removal to determine if any additional avoidance measures are necessary.

Otherwise, unless the project description changes, or new information reveals that the effects of the proposed action may affect listed species in a manner or to an extent not considered, or a new species or critical habitat is designated that may be affected by the proposed action, no further action pursuant to the Act is necessary. If you have questions regarding these comments, please contact Holly Herod, Fish and Wildlife Biologist, at 808-792-9400.

Enclosure

Enclosure. Plant critical habitat units that are nearby or intersect the Puu Alii Natural Area Reserve.

Unit	Scientific Name	Section of Unit that is Applicable for Species
06	<i>Adenophorus periens</i>	a
04	<i>Brighamia rockii</i>	a
06	<i>Brighamia rockii</i>	c
03	<i>Centaurium sebaeoides</i>	a
06	<i>Clermontia oblongifolia ssp. brevipes</i>	a
06	<i>Cyanea dunbarii</i>	a
06	<i>Cyanea mannii</i>	a
06	<i>Cyanea procera</i>	a
04	<i>Hibiscus arnottianus ssp. immaculatus</i>	a
06	<i>Hibiscus arnottianus ssp. immaculatus</i>	b
06	<i>Lysimachia maxima</i>	a
06	<i>Peucedanum sandwicense</i>	b
06	<i>Phyllostegia mannii</i>	a
06	<i>Schiedea mutallii</i>	a
03	<i>Tetramolopium rockii</i>	c

Literature Cited

- Anonymous. 2007. Cleaning recommendations to prevent the spread of *Phytophthora ramorum*, cause of sudden oak death. <http://nature.berkeley.edu/comtf/pdf/SanitationGuide.pdf>. August 22, 2007.
- Day, R.H. and B.A. Coopcr. 2002. Petrel and shearwater surveys near Kalaupapa, Molokai Island, June 2002. Report prepared for Inventory and Monitoring Program, Pacific Islands Network, National Park Service. 17 pp.
- Swift, R. 2004. Potential Effects of Ungulate Exclusion Fencing on Displaying Hawaiian Petrels (*Pterodroma sandwichensis*) at Hawai'i Volcanoes National Park. Masters Thesis, Oregon State University. 70 pp.
- U.S. Fish and Wildlife Service (USFWS). 1994. Recovery plan for *Panicum fauriei* var. *carteri*. U.S. Fish and Wildlife Service, Portland, OR. 50 pp.
- U.S. Fish and Wildlife Service. 1996a. Big island plant cluster recovery plan. U.S. Fish and Wildlife Service, Portland, OR. 202 pp.
- U.S. Fish and Wildlife Service. 1996b. Recovery plan for the Molokai plant cluster. U.S. Fish and Wildlife Service, Portland, OR. 143 pp.
- U.S. Fish and Wildlife Service. 1998a. Molokai II: Addendum to the recovery plan for the Molokai plant cluster. U.S. Fish and Wildlife Service, Portland, OR. 52 pp.
- U.S. Fish and Wildlife Service. 1998b. Recovery plan for Oahu plants. U.S. Fish and Wildlife Service, Portland, OR. 207 pp + appendices.
- U.S. Fish and Wildlife Service. 1999. Recovery plan for multi-island plants. U.S. Fish and Wildlife Service, Portland, OR. 206 pp + appendices.
- U.S. Fish and Wildlife Service. 2006. Revised recovery plan for Hawaiian forest birds. U.S. Fish and Wildlife Service, Portland, OR. 622 pp.



United States Department of the Interior



NATIONAL PARK SERVICE
Kalaupapa National Historical Park
Kalaupapa, Hawaii 96742

IN REPLY REFER TO:

November 15, 2007

Ms. Christa Russell
US Fish & Wildlife Service
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122, Box 50088
Honolulu, HI 96850

RE: Informal Consultation for the Puu Alii Natural Area Reserve Conservation Fencing Project, Kalaupapa National Historical Park, Molokai, Hawaii
TMK 6-1-001-002

Dear Ms. Russell:

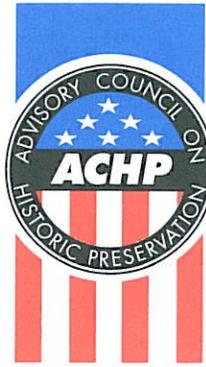
Thank you and your staff for the thorough letter regarding the information section 7 consultation for the Puu Alii Natural Area Reserve Conservation Fencing Project. We understand that after review of the project and the planned conservation measures to be incorporated into the construction, FWS made the following conclusions:

- The project may affect but is not likely to adversely affect the Molokai creeper and the Molokai thrush because the unlikelihood of the two birds being present, the native tree species that would be used by the two bird species would be left in place or trimmed slightly, and the short-term nature of potential effects would be considered insignificant or discountable;
- The project may affect but is not likely to adversely affect the Newell's shearwater or Hawaiian petrel because the majority of the fence will be below the canopy line in areas with vegetation and because the fence design will incorporate the use of fence flagging as needed to increase the visibility of the fencing;
- The project is not likely to adversely affect and would be completely beneficial to the 20 endangered and threatened plant species because the project is incorporating conservation measures to avoid effects on plant species and because the fence protects the plants against feral ungulates, the greatest threat to these species; and
- The project is not likely to adversely affect the 15 critical habitat units that are nearby or intersect with Puu Alii NAR as the impacts are insignificant or discountable, because the project is incorporating conservation measures to avoid impacts to the plant critical habitat units.

Thank you again for your assistance. Should you have any future questions or concerns about this project, please feel free to contact Guy Hughes, Kalaupapa NHP Natural Resources Division Chief at 808-567-6590 (guy_hughes@nps.gov) or Christen Mitchell, DOFAW planner at 808-587-0051 (christen.w.mitchell@hawaii.gov).

Sincerely,

Steve Gibbons
Acting Superintendent



Preserving America's Heritage

August 28, 2007

Tom Workman
Superintendent
Kalaupapa National Historical Park
P.O. Box 2222
Kalaupapa, HI 96742

**Ref: *Continued Section 106 Consultation for Proposed Construction of
484 Acre Pu'u Ali'i Natural Area Reserve Fence Unit,
Kalaupapa National Historical Park, Hawaii***

Dear Mr. Workman:

The Advisory Council on Historic Preservation (ACHP) recently received your letter continuing consultation for the referenced undertaking pursuant to 36 CFR § 800.8(c).

We understand the park has concluded that historic properties will not be adversely affected by this undertaking. If it has not already done so, the park needs to share this effect finding, made in consultation with the Hawaii State Historic Preservation Office (SHPO), with all consulting parties.

Thank you for providing us with this notification. If you have any questions, please contact Kelly Yasaitis Fanizzo at (202) 606-8583, or by email at kfanizzo@achp.gov.

Sincerely,

for Reid Nelson
Assistant Director
Federal Property Management Section
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION

1100 Pennsylvania Avenue NW, Suite 803 • Washington, DC 20004
Phone: 202-606-8503 • Fax: 202-606-8647 • achp@achp.gov • www.achp.gov



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE
Kalaupapa National Historical Park
Kalaupapa, Hawaii 96742



November 15, 2007

Ms. Kelly Fanizzo
Advisory Council on Historic Preservation
1100 Pennsylvania Avenue NW, Suite 803
Washington, DC 20004

RE: Comment letter on Draft Environmental Assessment for the Puu Alii
Conservation Fencing Project, TMK 6-1-001-002, Molokai

Dear Ms. Fanizzo:

Thank you and AHCP for your comments dated August 28, 2007 regarding the Draft Environmental Assessment and continued section 106 consultation for the Puu Alii Conservation Fencing project. We confirm that the project is not anticipated to adversely affect historic properties, and that we plan to share this effect finding with other stakeholders. Should you have any future questions or concerns about this project, please feel free to contact Guy Hughes, Kalaupapa NHP Natural Resources Division Chief at 808-567-6590 (guy_hughes@nps.gov) or Christen Mitchell, DOFAW planner at 808-587-0051 (christen.w.mitchell@hawaii.gov).

Sincerely,

Steve Gibbons

Steve Gibbons
Acting Superintendent



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

HRD07/1202D

August 9, 2007

Tom Workman
Superintendent
Kalaupapa National Historical Park
P.O. Box 2222
Kalaupapa, HI 96742

**RE: Section 106 Consultation: Proposed Pu'u Ali'i Natural Area Reserve,
Kalaupapa, Kalawao County, Moloka'i.**

Dear Tom Workman,

The Office of Hawaiian Affairs (OHA) is in receipt of your July 19, 2007 submission and offers the following comments:

According to the Draft Environmental Assessment, an archeological inventory level survey was performed with a determination that no historic resources would be affected by the proposed fence line. OHA has no further recommendations at this time for the project.

OHA only requests that if iwi kūpuna or Native Hawaiian cultural or traditional deposits be found during ground disturbance, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jason Jeremiah, Policy Advocate-Preservation, Native Rights, Land and Culture, at (808) 594-1816 or jasonj@oha.org.

Aloha,

A handwritten signature in black ink, appearing to read "Clyde W. Nāmu'o".

Clyde W. Nāmu'o
Administrator



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

August 21, 2007

HRD07_1202D

Thomas Workman, Superintendent
Kalaupapa National Historical Park
P.O. Box 2222
Kalaupapa, HI 96742

Re: Draft Environmental Assessment for the construction of a 484 acre fence unit within the Pu'u Ali'i Natural Area Reserve, Kalaupapa National Historical Park

The Office of Hawaiian Affairs (OHA) is in receipt of your July 19, 2007 letter seeking comments on a draft Environmental Assessment (EA) for the proposed construction of new animal exclusion fences at Pu'u Ali'i Natural Area Reserve (NAR) on Moloka'i. This proposed project will protect approximately 484 acres of the 1,330 acre NAR with animal-proof fences followed by removal of all feral ungulates from within the fenced enclosure.

OHA is generally supportive of the primary objective of the project, which is to prevent further damage to a portion of the NAR where native vegetation is still fairly pristine. According to the information contained within the draft EA, natural recovery of the NAR is possible if feral ungulates are removed.

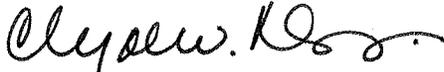
It is our understanding that current NAR regulations require individuals who seek access to the NAR must apply for a special use permit. OHA seeks assurances that consideration will be afforded to individuals seeking access to the NAR for constitutionally protected traditional and customary practices. Based on the information within the draft EA, the proposed fence alignment has been designed to avoid obstruction of the Pelekunu Trail.

OHA requests that in the event Native Hawaiian traditional, cultural or burial sites are encountered during any phase of this project, all work will immediately cease and the appropriate agencies notified pursuant to applicable laws.

Thomas Workman, Superintendent
Kalaupapa National Historical Park
August 21, 2007
Page 2

Thank you for the opportunity to provide comments on this draft EA. Should you have any questions, please contact Keola Lindsey, Lead Advocate- Culture at (808) 594-1904 or keolal@oha.org.

‘O wau iho nō,



Clyde W. Nāmu‘o
Administrator

C: Trustee Colette Machado, Moloka‘i and Lana‘i
Irene Ka‘ahanui, OHA- Community Resource Coordinator, Moloka‘i



United States Department of the Interior



NATIONAL PARK SERVICE
Kalaupapa National Historical Park
Kalaupapa, Hawaii 96742

IN REPLY REFER TO:

November 15, 2007

Mr. Clyde Nāmu‘o, Administrator
Office of Hawaiian Affairs
711 Kapiolani Blvd., Suite 500
Honolulu, HI 96813

RE: Comment letter on Draft Environmental Assessment for the Puu Alii
Conservation Fencing Project, TMK 6-1-001-002, Molokai

Dear Mr. Nāmu‘o:

Thank you and your staff for your comments, dated August 21, 2007, on the Draft Environmental Assessment and your comments, dated August 9, 2007, on the section 106 consultation for the Puu Alii Conservation Fencing Project. We appreciate OHA's general support of the primary objective of this project and confirm that if any Native Hawaiian traditional, cultural or burial sites are encountered during construction, all work will cease and the appropriate agencies notified in accordance with existing laws.

OHA also provided comment seeking assurances that consideration will be afforded to individuals seeking access to the Natural Area Reserve (NAR) for constitutionally protected traditional and customary practices. While current NAR rules do require a permit for the gathering of any plant or animal material (except for game mammals and birds hunted in accordance with DLNR's hunting rules), the Division of Forestry and Wildlife (DOFAW) also recognizes the State's obligations regarding traditional and customary practices. The permit requirement is in place to enable DLNR to protect native species and minimize overcollection of particular species or in certain areas. It is the intent of DOFAW to manage NAR lands in such a way that perpetuates the natural and cultural resources therein for the current and future enjoyment and benefit of all Native Hawaiians and people of Hawaii, and at the same time, supports the exercise of constitutionally protected rights.

Thank you again for your participation in the environmental review process. Should you have any future questions or concerns about this project, please feel free to contact Guy Hughes, Kalaupapa NHP Natural Resources Division Chief at 808-567-6590 (guy_hughes@nps.gov) or Christen Mitchell, DOFAW planner at 808-587-0051 (christen.w.mitchell@hawaii.gov).

Sincerely,

Steve Gibbons

Steve Gibbons

Acting Superintendent



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

July 31, 2007

Mr. Thomas Workman
U.S. Department of Interior
National Park Service
Kalaupapa National Historical Park
P.O.B. 2222
Kalaupapa, HI 96742

LOG NO: 2007.2558
DOC NO: 0707NM45
Archaeology

Dear Mr. Workman:

**SUBJECT: National Historic Preservation Act (NHPA) Section 106 Review –
Archaeological Surface Survey of the Proposed Pu'u Ali'i North Unit
Fence Unit at Kalaupapa National Historical Park (Johnson, National Park
Service, 2007)
TMK: 2-6-1-001: 002
Waiokolu Ahupua'a, Koolau District, Molokai Island**

Thank you for your archaeological report for the 484 acre fence construction at Pu'u Ali'i. The fencing corridor was surveyed. No historic sites were found in the fencing project area. Therefore this project will have a "no effect" on significant historic sites. This assessment report is acceptable.

If you have any questions, please contact Nancy McMahon, our Kauai/Molokai Archaeologist at 742-7033

Aloha,


Allan A. Smith
State Historic Preservation Officer



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE
Kalaupapa National Historical Park
Kalaupapa, Hawaii 96742



November 15, 2007

Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Blvd., Room 555
Kapolei, HI 96707

RE: Puu Alii Conservation Fencing Project, TMK 6-1-001-002, Molokai

Dear Ms. Chinen:

Thank you and your staff for your letter dated July 31, 2007 completing the section 106 review for the Puu Alii Conservation Fencing Project, which was received during the public comment period of the Draft Environmental Assessment. We acknowledge that you found the assessment report provided to your Division to be acceptable and that you concur that this project will have a "no effect" on significant historic sites. Should you have any future questions or concerns about this project, please feel free to contact Guy Hughes, Kalaupapa NHP Natural Resources Division Chief at 808-567-6590 (guy_hughes@nps.gov) or Christen Mitchell, DOFAW planner at 808-587-0051 (christen.w.mitchell@hawaii.gov).

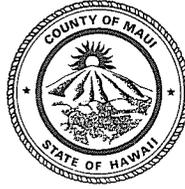
Sincerely,

Steve Gibbons
Acting Superintendent

CHARMAINE TAVARES
Mayor

MILTON M. ARAKAWA, A.I.C.P.
Director

MICHAEL M. MIYAMOTO
Deputy Director



RALPH M. NAGAMINE, L.S., P.E.
Development Services Administration

CARY YAMASHITA, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
DEVELOPMENT SERVICES ADMINISTRATION
250 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

August 1, 2007

Christen Mitchell - Planner
DLNR, Division of Forestry and Wildlife
1151 Punchbowl Street, Room 325
Honolulu, HI 96813

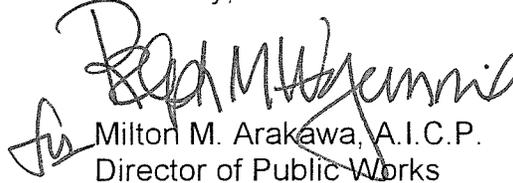
Subject: APPLICATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
FOR PU'U ALI'I CONSERVATION FENCING PROJECT
UPPER PU'U ALI'I PLATEAU

Dear Ms. Mitchell:

We reviewed the subject application and have no comments at this time.

Please call Michael Miyamoto at 270-7845 if you have any questions regarding this letter.

Sincerely,


Milton M. Arakawa, A.I.C.P.
Director of Public Works

c Kalaupapa National Historical Park
Office of Environmental Quality Control

IS S:\LUCA\CZM\Puu_Alii_conserv_fence_proj_dea_ls.wpd



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE
Kalaupapa National Historical Park
Kalaupapa, Hawaii 96742



November 15, 2007

Mr. Milton Arakawa, Director
County of Maui Department of Public Works
250 South High Street
Wailuku, HI 96793

RE: Comment letter on Draft Environmental Assessment for the Puu Alii
Conservation Fencing Project, TMK 6-1-001-002, Molokai

Dear Mr. Arakawa:

Thank you for your comment letter dated August 1, 2007, on the Draft Environmental Assessment for the Puu Alii Conservation Fencing project, stating that you have no comments at this time. Should you have any future questions or concerns about this project, please feel free to contact Guy Hughes, Kalaupapa NHP Natural Resources Division Chief at 808-567-6590 (guy_hughes@nps.gov) or Christen Mitchell, DOFAW planner at 808-587-0051 (christen.w.mitchell@hawaii.gov).

Sincerely,

Steve Gibbons

Steve Gibbons
Acting Superintendent

August 17, 2007

Tom Workman, Superintendent
Kalaupapa National Historical Park
P.O. Box 2222
Kalaupapa, HI 96742

Dear Mr. Workman,

Thank you for sending the EA Draft proposal report. My following comments are based on my review of this draft report. Below are a few comments I have.

pg. 8 fourth paragraph: The statement — The removal of the last few animals will require using alternative methods such as baiting, trapping or snaring inside the enclosure.

comment: I have a problem with the baiting, trapping or snaring methods of animals. The PETA group would have a "Field Day". Discretion advised.

pg. 9 Alternatives Considered

comment: I favor the intent of alternative 1.

pg. 17 Archaeological Sites and Cultural Resources

comment: I am pleased that the fence alignment has been designed to keep the fencing entirely off of the Pelekuu rim so as to not impede transit or disturb the enjoyment of the Pelekuu rim trail. Gates will be installed at various locations around fence perimeter allowing access to the interior unit.

Sincerely,
N. J. ...



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE
Kalaupapa National Historical Park
Kalaupapa, Hawaii 96742



November 15, 2007

Ms. Joyce Kainoa
PO Box 664
Kaunakakai, HI 96748

RE: Comment letter on Draft Environmental Assessment for the Puu Alii
Conservation Fencing Project, TMK 6-1-001-002, Molokai

Dear Ms. Kainoa:

Thank you for your comments, dated August 17, 2007, on the Draft Environmental Assessment for the Puu Alii Conservation Fencing project. We appreciate your support of the preferred alternative and recognize your pleasure with the fence design that keeps the fencing off the Pelekunu Rim.

In response to your concern regarding the proposed methods of animal control (baiting, trapping and snaring), we do intend to follow certain protocols to minimize the use of these control options and to minimize any unnecessary animal suffering. First, we plan to utilize volunteer hunts as the first line of animal control. We will work closely with the Molokai Hunters Working Group to plan and coordinate these hunts. When animal numbers within the fenced unit drop so that volunteer hunts are either not effective or so that volunteer interest stops, we will discuss the next phase of animal control with the Molokai Hunters Working Group. In the event that traps are used, we plan to utilize remote technology, so that resource staff are notified in real-time when any trap doors shut, to minimize the time an animal spends in a trap. In addition, any traps or snares used will be checked on a regular basis.

Thank you again for your participation in the environmental review process. Should you have any future questions or concerns about this project, please feel free to contact Guy Hughes, Kalaupapa NHP Natural Resources Division Chief at 808-567-6590 (guy_hughes@nps.gov) or Christen Mitchell, DOFAW planner at 808-587-0051 (christen.w.mitchell@hawaii.gov).

Sincerely,

Steve Gibbons

Steve Gibbons
Acting Superintendent