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GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

DIVISION OF FORESTRY AND WILDLIFE

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LAND MANAGEMENT
STATE PARKS

February 24, 2004

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, HI 96813

RE: Final Environmental Assessment (DEA) and Finding of No Significant Impact (FONSI)
for Construction of Ungulate Proof Fencing, Upper Pu'u Ali'i Plateau, TMK 6-1-001- 002; 5-4-
003-026, Moloka'i

Dear Ms. Salmonson:

The Department of Land and Natural Resources Division of Forestry and Wildlife has reviewed the comments received on the above project during the 30-day comment period which began on December 23, 2003. After review of the public comments and the final environmental assessment, the Division has determined that this project will not have a significant negative effect on the environment and has issued a Finding of No Significant Impact (FONSI). Please publish this notice in the next OEQC Environmental Notice (March 8, 2004).

We have enclosed a completed OEQC Publication Form and four copies of the final environmental assessment. Please call me or Christen Mitchell, DOFAW Planner, at 587 -0051 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael G. Buck".

MICHAEL G. BUCK
DOFAW Administrator

Enclosures

**2004-03-08 FONSI
PUU ALII NATURAL AREA RESERVE
UNGULATE-PROOF FENCING**

MAR 8 2004
FILE COPY

**FINAL
ENVIRONMENTAL ASSESSMENT**

CONSTRUCTION OF UNGULATE-PROOF FENCING

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

**In accordance with:
Chapter 343, Hawai'i Revised Statutes**

February 2004

**Prepared by:
Kalaupapa National Historic Park
Natural Resource Management
PO Box 2222
7 Puahi St.
Kalaupapa, Hawai'i 96742**

**In consultation with staff of:
Natural Area Reserves System
DLNR, DOFAW, State of Hawai'i
1151 Punchbowl Street, Room 325
Honolulu, HI 96813**

**UNGUATE-PROOF FENCING
 FUN ALLI NATURAL AREA RESERVE
 2004-03-08 FONSI**

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PROJECT SUMMARY

Executive Summary

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 improve existing animal exclusion fences, and construct new fences at the Pu'u Ali'i Natural Area Reserve on Moloka'i.

The project would enclose approximately 528 acres of the Reserve and adjacent lands with animal proof fences, followed by the removal of all feral ungulates from within the fenced enclosure. The project entails construction of 2.9 miles of new fence, and a retrofit of 2.75 miles of existing fence. The new fence will connect fence segments built earlier by The Nature Conservancy of Hawai'i (TNCH) and Hawai'i State Division of Forestry and Wildlife (DOFAW). A temporary campsite will be constructed in the southwest corner of the project area near an existing helicopter landing zone.

The 1,330-acre Reserve, which was established in 1985 by State Executive Order 3302, is located in a remote portion of northern Moloka'i. It is situated on the east Moloka'i volcanic shield and is surrounded by steep valley walls which drop vertically from all but the south boundary.

The Reserve protects five types of wet montane shrublands and forests that provide habitat to native plants, birds, and invertebrates, several of which are considered rare. The 1991 Pu'u Ali'i Management Plan lists 34 rare plant taxa as present in the Reserve, including five species listed as Endangered and four listed as Species of Concern by the US Fish and Wildlife Service (USFWS). There are also seven endemic birds known from Pu'u Ali'i. The Reserve is an important watershed for the island of Moloka'i.

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 this fragile environment 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 may be all that is necessary for the forest to recover and sustain itself without other intensive management.

This Environmental Assessment describes two project alternatives: building and upgrading 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 negative effects are anticipated to the environment, archaeological features, view planes, or public access or use of this area during or after construction of the proposed fencing.

Project Name: Construction of Ungulate-proof Fencing
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,
Island of Moloka'i.
TMK 6-1-001-002 Pu'u Ali'i NAR
5-4-003-026 Kamakou Preserve

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

Agencies/Individuals Consulted: (see References: Consultation and Coordination section of EA)

Anticipated Determination: Finding of No Significant Impact [FONSI]

Project Background and Need

In 1972, Chapter 195 of the Hawai'i Revised Statutes (HRS 195) enabled the Natural Area Reserve 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. As mentioned above, 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 NAR system. 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 the 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.

In the early 1990's, two fences were constructed on Pu'u Ali'i. DOFAW constructed a 1.5-mile long fence that bisected the Reserve from east to west, and TNCH constructed a 1.25-mile long fence that roughly followed the southern Reserve boundary (Figures 1, 2). Both fence lines cross the plateau from the east rim of Waikolu valley to the west rim of Pelekunu valley. The fences were built of 47-inch tall hogwire, intended to exclude goats and pigs, not deer. The fences were intended to be strategic; they did not completely enclose the area, but relied on the steep *pali* of the Waikolu and Pelekunu valleys to act as natural barriers to animal movement.

The fences also divided the Reserve into two units of roughly equal size – a northern and southern unit. The primary intent of the existing fences was to protect the southern unit, containing high quality native forest, by creating a box with strategic fences on two sides and steep cliffs on the rest. It was hoped that hunting or snaring could be used to remove most animals from inside the box, and that ingress past the surrounding cliffs would be limited. Unfortunately, the topography was not steep enough to deter animals, and they continued to pass around the fences and to enter the areas that were supposed to be secure.

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 TNCH 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. 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 (Figure 3). 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. With this in mind, the primary objective of this project is to construct an enclosure that is completely secure against the entry of ungulates, and remove any animals that may be inside after its completion. Short fences might also be constructed at strategic points inside the closed unit, in order to obstruct travel of ungulates along ridgetops. These strategic fences will facilitate hunting to remove animals from inside the fences, as well as to compartmentalize the enclosure in case animals get back in (for instance, if the perimeter fence is damaged by a storm).

A secondary objective of this project is to protect the Reserve from expanding populations of axis deer. Since their introduction to Molokai in the late 1700's, axis deer have occupied most of the islands dry, low elevation habitat. Little is known about their distribution in the wet forests at higher elevation, but it is likely that they will eventually colonize these areas; there have been occasional sightings of deer in the vicinity of the Pu'u Ali'i project. In order to prevent their further incursion into the NAR, it is prudent to design the project fences to exclude deer as well as pigs and goats. 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 happened through a grass-roots, community-wide strategic planning process of the USDA Empowerment Zone. The strategic plan clearly states the intention of the Moloka'i community to take action to protect the Moloka'i watershed containing many rare and endangered native species and reduce erosion and sedimentation of the near-shore reefs.

This project involves construction of 2.9 miles of new fence, connecting the two existing fence segments. This new fence will follow the rims of Pelekunu and Waikolu valleys and will prevent animals from entering the Reserve. This will surround the southern, higher-elevation half of the NAR (which has the most intact forest) and form a completely enclosed unit of approximately 528 acres. Upon completion of the new fences, all ungulates will be removed from the enclosed southern 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 Molokai 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."

Purpose of the Environmental Assessment

The Pu'u Ali'i Natural Area Reserve is State-owned land, within the Conservation District. 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).

An informational public meeting was held for the Molokai community on April 2, 2003. The meeting was advertised in the Molokai Dispatch of March 20th, which is distributed free on Molokai, and copies of the notice were posted on bulletin boards throughout the island. There were no significant items of concerns generated at the public meeting and the minutes are on file. The U.S. Fish and Wildlife Service (USFWS) was consulted under Section 7 of the Act with a letter to the Field Supervisor on January 17th, 2003. A Section 7 concurrence letter was received from USFWS on February 13, 2003 (Appendix 1). The draft EA was published in the State of Hawai'i Environmental Notice for public review.

Summary of Alternatives Considered

This environmental assessment considers the following project alternatives:

- 1) Construction of two 1½ mile sections of deer proof fence parallel to the edges of Waikolu and Pelekunu Valleys and retrofitting of existing fences. The new fence segments will connect the existing fences and form a 528-acre enclosed unit in the upper portion of Pu'u Ali'i NAR. Short strategic fences may be constructed on selected ridgelines within the enclosure to further restrict animal movement and aid in removing animals that remain inside once the perimeter fence is complete. The existing fences will be retrofitted with longer posts and additional fabric to make them deer proof. All ungulates will be removed from the enclosed area.
- 2) No fence to be constructed (no action).

Discussion of Alternatives

Alternative 1. Construction of a 528-acre enclosure in the southern portion of Pu'u Ali'i plateau:

Two new fence segments, totaling 2.9 miles, will be built to enclose the southern portion of Pu'u Ali'i NAR for the purpose of excluding all ungulates. 2.75 miles of existing fence would be improved to make it deer proof. A temporary campsite will be constructed in the southwest corner of the project site (Figure 1). Short strategic fences may be constructed on selected ridgelines to further restrict animal movement and aid

in removing the animals that remain inside the enclosure. The exclusion of ungulates would allow for the recovery of damage that has occurred, and for the restoration of the rare and endangered species found within the fence.

This is the preferred alternative, as it will allow managers to assist in reducing or eliminating ungulate disturbance in a significant portion of Pu'u Ali'i NAR. The fencing will provide protection against a major threat to the continued existence of the biological resources the Reserve was established to protect.

Alternative 2. No action:

No new fences would be constructed on the upper 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 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 animals will continue to circumvent the existing strategic fences. Goats and deer will penetrate farther into the forest, and deforestation and erosion will accelerate.

Specifications, Progression, and Timeline of Preferred Alternative

There are four major components to this project: the retrofit to increase the height of the existing fences in the NAR, the construction of new fence near the edge of Waikolu Valley, the new construction of new fence near the edge of Pelekunu Valley, and construction of strategic fences on ridgetops within the enclosure, as needed. In addition, a temporary campsite will be constructed near the Pu'u Ali'i Landing Zone above Waikolu Falls near Hanalilolilo to support the fence construction crew. The progression and timeline of the project follows:

1. The retrofit is planned to begin in the Winter of 2003/2004 and should take 10 to 12 weeks to complete depending on weather conditions.
2. Preparation for the new Waikolu fence will take 3 to 4 weeks ending in April 2004.
3. Construction of Waikolu fence and stream guards - 6 months ending in September 2004.
4. Preparation of Pelekunu fence - 3 to 4 weeks ending in October 2004.
5. Construction of Pelekunu fence - 5 months ending in March 2005.
6. Construction of short strategic fencing - as necessary.

The expected specifications for each portion of the project are as follows; however, 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. Construction drawings are included in Figure 5.

Retrofit specifications

1. Four foot wide corridor to be cleared on inside boundary of the fence for construction and maintenance. All brush clearing work will be conducted with the use of powered and non-powered hand tools.
2. Existing four-foot hog wire fence on the bottom with four-foot plastic deer mesh hung on the top from nine-gauge bezinal wire with a two foot overlap to make a six-foot high fence.
3. Replacement of existing t-posts where needed with nine-foot galvanized steel t-post with spades spaced approximately 8 feet apart with 2-foot galvanized anchors placed between each post.
4. All corners will have wedge locks for support
5. One strand of barb wire run along ground at base. Alternatively, a continuous apron of 32-inch wide hogwire hog-ringed to the vertical mesh fence may be installed along the base of the fence.
6. One strand of barb or smooth wire along the top of the fencing.
7. Self-closing swinging gates will be installed strategically at historical access points and other strategic areas for hunting and management activities.

Waikolu specifications

1. Same as retrofit specifications.
2. Addition of custom stream guards with hanging curtains at stream crossings and waterfalls.

Pelekunu specifications

1. Seven and a half foot high plastic deer mesh hung on stainless steel wire.
2. Ten-foot galvanized steel t-posts spaced approximately eight feet apart. Two strands of bezinal wire spaced in the middle sections for support.
3. One strand of barb wire along the ground. Alternatively, a continuous apron of 32-inch wide hogwire hog-ringed to the vertical mesh fence may be installed along the base of the fence.

Temporary Campsite Specifications

Use of 12-inch pre-poured cement blocks that will be leveled with wood blocks to serve as footings for three use-area platforms:

1. 16'x16' reinforced Helicopter Landing Pad, wooden platform leveled on removable concrete footings.
2. 34'x16' wooden platform leveled on removable concrete footings, mounted with two polyvinyl sheds and water catchments.
3. 4'x4' 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

4. 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.

Estimated Costs and Funding Sources of Preferred Alternative

Summary of project costs:

Fence construction and animal removal	\$565,156
Fence retrofit	\$ 98,000
In-kind contributions	\$157,000
TOTAL	\$820,156

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 to national competition.

DESCRIPTION OF THE AFFECTED ENVIRONMENT

General Setting

Pu'u Ali'i Natural Area Reserve is a northwest-sloping, stream-dissected plateau surrounded by valley walls that drop off steeply on the north, east and west. 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.

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 the Pu'u Ali'i Reserve. The terrain in the Reserve is very rough. Access to the interior of the Reserve is infrequent and usually by helicopter. Three helicopter landing zones, and a small cabin have been developed within the Reserve.

The Hawai'i State DOFAW 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 (Figure 4). Management of the Reserve takes place under a Cooperative Agreement between the National Park Service and DOFAW.

The Reserve's south boundary adjoins TNCH Kamakou Preserve. TNCH, 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. Partners assist with fencing and feral animal control on adjacent lands.

The project area is located within the Protective and Resource Subzones of the State Conservation District.

Flora

Five natural communities were observed in the Pu'u Ali'i NAR during a January 1989 Heritage survey. Two of the three types of 'Ōhi'a forest that dominate the Reserve were surveyed by transect: 'Ōhi'a/'Ōlapa Montane Wet Forest and 'Ōhi'a/Mixed Shrub Montane Wet Forest. 'Ōhi'a/Uluhe Montane Wet Forest (which forms patches within the 'ohi'a/'olapa forest on steep slopes) and two shrubland communities that occupy the steepest slopes of the Reserve were not directly surveyed and are described here by their typical components. The shrublands (an 'ōhi'a-dominated shrubland and a mixed fern/mixed shrub cliff community) extend from the adjacent valley walls onto the Reserve's western edge and eastern extension at Ohialele.

In the 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 Reserve, '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 kawa'u (*Ilex anomala*), kolea (*Myrsine lessertiana*) and kopiko (*Psychotria spp.*). Hapu'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 la'au (*Vaccinium calycinum*), pilo (*Coprosma ochracea*), kamakahala (*Labordia hedyosmifolia*), manono (*Hedyotis terminalis*) and saplings of 'ohi'a and 'olapa. Native ferns are well represented by ho'i'o (*Athyrium sandwichianum*), akolea (*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 Reserve and surrounding area (Table 1). Of these, 10 have been confirmed within the Reserve boundaries. The 24 taxa known from adjacent areas may be found within the Reserve in future surveys. Of the adjacent taxa, seven have been reported recently (since 1972): *Adenophorus periens*, *Cyrtandra halawensis*, *C. macrocalyx*, *Joinvillea ascendens ssp. ascendens*, *Platanthera holochila*, *Schiedea diffusa*, and *Zanthoxylum hawaiiense*. The 17 remaining taxa known from the adjacent area were, for the most part, reported prior to the 1920s, but may be found in further surveys. Six other taxa, *Gardenia remyi*, *Hedyotis mannii*, *Hibiscus kokio ssp. kokio*, *Huperzia sulcinervia*, *Lagenifera maviensis*, and *Lobelia dunbarii ssp. dunbarii* have been reported for the

general area, but not enough information is available to confidently depict them as in or adjacent to the Reserve.

Three of the ten rare plant taxa reported within the Reserve were observed during a 1989 survey. All populations of these three taxa were observed in 'Öhi'a/'Ölapa Montane Wet Forest. Several fruiting plants of *Lobelia hypoleuca* were 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.

Cyrtandra biserrata and *Cyanea solenocalyx* were observed along another side branch of Waikolu Stream southeast of the *Lobelia* at a higher elevation, near a small waterfall. The one sterile shrub seen here is the only reported occurrence of *Cyrtandra biserrata* in the Reserve and surrounding area. 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).

South of the *Cyrtandra* and *Cyanea*, several more flowering *Lobelia hypoleuca* were observed during the survey along a stream bank at the head of Waikolu Valley. A sterile *Cyanea solenocalyx* was seen at the same site.

Cyanea solenocalyx was also observed on the rim of Pelekunu Valley north of Pu'u Ali'i along the Reserve's eastern boundary. A scattered population of approximately eight plants was seen, some of which were flowering and fruiting.

Fauna

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

The kakawahie is federally listed endangered (USFWS 1989), and was last recorded near Ohialele on the Reserve's eastern boundary in 1963. The kakawahie was also seen at two other locations in the vicinity of Pu'u Ali'i and Kamakou Preserve in 1961 and 1962. It is possible that kakawahie is now extinct (Scott et al. 1986).

The oloma'o is also federally listed endangered (USFWS 1989). The small remnant population appears to have a low probability of long-term survival (Scott et al. 1986). It has been reported only along the Pelekunu Valley rim from Ohialele south and beyond Pu'u Ali'i, and the Olokui NAR east of Pu'u Ali'i Reserve. It was last reported from the Reserve in 1979 during the USFWS Forest Bird Survey in the south-central part of the Reserve. Previous to this sighting, oloma'o was last recorded in 1907 just south of Pu'u Ali'i and in Pelekunu.

'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 (DOFAW n.d.). The USFWS 1979-80 Forest Bird Survey of Moloka'i found a relict distribution in the Olokui NAR and the Kamakou Preserve. 'I'iwi was last reported in the Reserve near the southeast corner in May 1988 (DOFAW 1988). It was also observed during a 1979 survey in the central and north-central part of the Reserve.

Three more common endemic bird species known from the Reserve include the Hawaiian owl or pueo (*Asio flammeus sandwichensis*), 'apapane (*Himatione sanguinea sanguinea*) and 'amakihi (*Hemignathus virens wilsoni*). The pueo is common on Moloka'i and has been observed in adjacent Kamakou Preserve but was not seen on the survey. 'Apapane was commonly heard and 'amakihi was heard less frequently during a January 1989 survey.

In recent years two endemic seabirds, the threatened 'a'o or Newell shearwater (*Puffinus newelli*) and the endangered 'ua'u or Hawaiian dark-rumped petrel (*Pterodroma phaeopygia sandwichensis*) have been heard calling on east Moloka'i (USFWS n.d.). Historically they have been found on cliffs in Moloka'i valleys (Banko 1980a, 1980b). It is not known whether nesting occurs or if significant habitat exists in Pu'u Ali'i Reserve 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 'amakihi. Nonnative forest birds commonly heard in Pu'u Ali'i Reserve 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 beautiful land snails. Native invertebrates incidentally sighted in the Reserve include crickets, drosophilid flies, Hawaiian happyface spiders, tornatellid 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 Reserve area in recent years (Table 3). *Partulina tessellata*, *P. redfieldii*, *P. proxima*, and *P. mighelsiana* were found on or near the southern boundary of the Reserve in adjacent Kamakou Preserve in 1988. Because habitats of Kamakou Preserve and Pu'u Ali'i Reserve are similar, it is highly probable that all four species occur in the Reserve. 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 proposed fence will provide protection for Federally designated critical habitat of approximately six Moloka'i plants: *Adenophorus periens*, *Clermontia oblongifolia* ssp. *brevipes*, *Cyanea procera*, *Lysimachia maxima*, *Phyllostegia mannii*, and *Schiedea nuttallii*.

Archaeological Sites and Cultural Resources

The following steps were taken to determine the cultural and historical significance of the project area: (1) a general literature review was conducted to determine if there were any studies of the area or any myths or legends specific to the area; (2) Kalaupapa Chief of Cultural Resources Jennifer Cerny conducted a surface field survey and identified no signs of surface archaeological features (see Archaeological Survey Clearance Form KALA/2003/01 attached as Appendix 2); (3) the following organizations were consulted to determine if the project would have an impact on archaeological features or traditional and cultural practices: Hui Mālama E Nā Kūpuna o Hawai'i Nei, Moloka'i Island Burial Council, Office of Hawaiian Affairs, the State Historic Preservation Division; and (4) an informational public meeting was held for the Moloka'i community on April 2, 2003, where KALA and DOFAW staff discussed the proposed project and shared maps of the proposed fenceline with those attending to receive public input on the project, including input on whether the fencing would impact traditional and cultural practices.

After reviewing the Draft Environmental Assessment, the State Historic Preservation Division commented that "no historic properties will be affected" by the proposed fencing due to the planned construction in areas where it is unlikely that historic sites are present due to elevation and topography.

Consultation with the Moloka'i Island Burial Council brought to the attention of cultural specialists with NPS that there are *mo'olelo* (legends) specific to the Pu'u Ali'i area. Additional information is pending; however, the fencing is not anticipated to have a negative impact on this aspect of Moloka'i's traditional Hawaiian cultural heritage. No specific items of concern were raised during the public meeting or during consultation.

As the project site is in remote wilderness, visitation to the area is minimal and is primarily limited to the vicinity of the Pelekunu 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.

Construction of the fencing will have no effect on existing regulations and will not affect Native Hawaiian gathering rights. 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.

POTENTIAL ENVIRONMENTAL IMPACTS OF THE PROJECT

Vegetation

The proposed fence corridor has been selected and surveyed by a trained Park wildlife biologist, botanist, and archaeologist. The installation of approximately 3 miles of fencing will entail clearing a four-foot wide corridor through the vegetated areas as necessary and installing a four foot woven wire fence supported and anchored with galvanized steel posts. No rare or sensitive species were identified within the fence corridor during surveys, but 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. For the retrofit of existing fences, clearing will require pruning of overhanging branches and minor brushing to remove plants that have grown into the corridor since the fences were built. For the new fence along the Waikolu rim, more extensive clearing will be necessary. However, most of this 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. The new fence along the Pelekunu rim will require the most extensive clearing. Because this segment passes at the top of an east-facing slope at higher elevation than the Waikolu rim, it is wetter and supports a denser native understory of short trees, shrubs ferns and mosses. Clearance of some of this native vegetation is unavoidable. Finally, the short strategic fences, located to prevent animal movement within the enclosure, are expected to be constructed in areas of heavy disturbance and to require minimal clearing of vegetation.

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.

Cultural Resources

Kalaupapa Chief of Cultural Resources Jennifer Cerny conducted a surface field survey and identified no signs of surface archeological features (see Appendix 2). The site will not be significantly affected by fence construction activities. 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 interested parties. The Section 106 process and consultation is running concurrently with the NEPA review process. Traditional Hawaiian use of the area

undoubtedly included 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 will not affect Native Hawaiian gathering rights. However, as the intent of the fence is to protect and restore native natural resources, the long-term impact on gathering rights may be positive. As the forest recovers, it may become possible to allow limited collecting of certain species for traditional practices.

Economic

No economic impacts are foreseen by the project. Hunters will ultimately relinquish the area as a protected area for native Hawaiian plants and animals, but volunteer community hunters will be used to assist in elimination of feral animals from the enclosure. Positive economic aspects of the project include 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.

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

The non-historic Pelekunu rim trail, used occasionally by hikers and hunters, passes within 250 meters of the easternmost segment of the enclosure and the Waikolu lookout vista is directly across from the western proposed fenceline.

Public Access

As noted above, one long-term result of this project will be that the area is no longer available for public hunting. During the short term, however, 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. Construction of deer proof fencing may impede entry to the area.

MITIGATION OF POTENTIAL IMPACTS

Vegetation

The Park botanist and the NARS resource management specialist have surveyed the proposed fence corridor twice for rare or endangered species. None were located. The fence will be rerouted whenever possible 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. An expert in Hawaiian botany will conduct a final survey and will accompany laborers during the brushing and clearing phase to minimize impacts to uncommon trees and shrubs and re-route the fence if rare species are discovered. 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. For the strategic fences, a thorough botanical survey will be made of the alignment before construction.

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.

Cultural Resources

Kalaupapa Chief of Cultural Resources Jennifer Cerny conducted a surface field survey and identified no signs of surface archeological 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 interested parties. If concealed historic properties, such as archeological 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 State Historic Preservation Division and the Park's cultural resource specialist, 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.

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

The non-historic Pelekunu trail passes along the easternmost segment of the enclosure and Waikolu lookout is directly across the valley from the western proposed fence. Concealing the fenceline from public view was a major consideration in determining the final alignment. Tree lines and natural terrain features were used to meet this objective. During the process of selecting the corridor, personnel were 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 from the trail or the lookout after installation, paint will be used to camouflage and conceal that portion from public view. The fence was set back approximately 30 meters from the rim to minimize visual effects.

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 be installed where the trail crosses the existing fences. Gates will also be installed at various locations around the fence perimeter to allow access to the interior unit.

SIGNIFICANCE DETERMINATION

It is not anticipated that this project will have a significant negative impact on the surrounding environment, and a Finding of no Significant Impact (FONSI) is recommended. This determination 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.

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

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 500-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.*

This project follows the mandate of the state Natural Area Reserve Law, HRS 195, recognizing Hawai'i's unique natural resources 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 proposed action is also consistent with Chapter 344 and with the State's mandate to conserve threatened and endangered species, as required by Chapter 195D, HRS.

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

This project is not expected to have substantial 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 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.*

No public facilities will be impacted. No change of population will result from this project.

7. Involves a substantial degradation of environmental quality.

The project will not degrade the environmental quality of the area. The intent of the project is to improve environmental quality by restoring a natural 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 preferred alternative 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 is in accordance with the recommendations of the Service for endangered species recovery.

10. Detrimentially affects air or water quality or ambient 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. 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 fence alignments that were chosen are set back from cliffs, and where gulches are crossed, natural barriers such as waterfalls were used to minimize stream crossings.

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 was designed not to affect the scenic quality of these areas. Fence alignments were chosen to use terrain and vegetation to screen the fence from public view, especially from the Pelekunu trail and from the Waikolu Lookout. 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 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.

ENVIRONMENTAL ASSESSMENT PREPARATION INFORMATION

This Environmental Assessment was prepared by staff of:
Kalaupapa National Historic Park
National Park Service
US Department of the Interior
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Kalaupapa, HI 96742

In consultation with staff of:
Natural Area Reserves System
DLNR, DOFAW, State of Hawai'i
1151 Punchbowl Street, Room 325
Honolulu, HI 96813

REFERENCES

Consultation and Coordination

Albert Agliam from Kalaupapa NP Resource Management staff provided advice for fence construction and alignment and identified and marked the proposed fence corridor with Jason Misaki (Moloka'i TNC) and Bryon Stevens, Maui NARS Specialist.

Bryon Stevens, Maui NARS Specialist, involved in all aspects of cultural, botanical, and fence route surveys. Integral partner in drafting and commenting on this document and another State of Hawai'i draft EA.

Guy Hughes, Wildlife Biologist Kalaupapa National Historical Park, and Bryon Stevens, Maui NARS Specialist surveyed the proposed fence route for rare plant and animal species.

Hui Mālama E Nā Kūpuna o Hawai'i Nei, Kunai Nihipali, PO Box 190, Haleiwa, HI 86712.

Jennifer Cerny, Chief of Cultural Resources, inspected the project site for surface cultural resources and coordinated the Section 106 consultation.

Kalaupapa State Department of Health, Mike McCarten, PO Box 4444, Kalaupapa, HI, 96742.

Moloka'i Island Burial Council, Mary Perzinshi, SHPD, 33 S. King St. Suite 155, Honolulu, HI 96748.

Office of Hawaiian Affairs – Moloka'i Branch. Irene Kaahanui, Community Resource Coordinator, PO Box 1717, Kaunakakai, HI 96748.

Office of Hawaiian Affairs – Dr. Pua Aiu, 711 Kapiolani Blvd., Suite 500, Honolulu, HI, 96813.

State of Hawai'i Historic Preservation Office, Peter Young, Board of Land and Natural Resources, Department of Land and Natural Resources, Kakuhikewa, Suite 555, 601 Kamokila Blvd, Kapolei, HI 96707.

The Nature Conservancy of Hawai'i, Moloka'i Office. P.O. Box 220, Kualapu'u, HI 96757.

United States Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office, 300 Ala Moana Blvd, Room 3-122, Box 50088, Honolulu, HI. 96850. Section 7 Consultation (Appendix 2).

The Draft Environmental Assessment was distributed to the following agencies, organizations and individuals:

Federal	US Department of Agriculture, Natural Resources Conservation Service US Environmental Protection Agency US Fish and Wildlife Service US Geological Survey, Biological Resources Division US National Park Service, Kalaupapa National Historical Park
State	Department of Agriculture Department of Hawaiian Home Lands Department of Health Department of Land and Natural Resources, Division of Conservation and Resources Enforcement Department of Land and Natural Resources, Division of Forestry and Wildlife Department of Land and Natural Resources, Division of State Parks Department of Land and Natural Resources, Land Division Department of Land and Natural Resources, Office of Conservation and Coastal Lands Department of Land and Natural Resources, State Historic Preservation Division Land Use Commission Molokai/Lanai Soil and Water Conservation District Molokai Public Library Natural Area Reserves Commission Office of Environmental Quality Control Office of Hawaiian Affairs Office of Planning Representative Sol Kaho'ohalahala University of Hawaii
County	Councilmember Danny Mateo Department of Planning Department of Public Works Department of Water Supply
Private	Bishop Museum – Hawaii Biological Survey Central Maui Hawaiian Civic Club Conservation Council for Hawaii Earthjustice Legal Defense Fund Hawaiian Botanical Society Hawaiian Ecosystems at Risk Hawaii Audubon Society Historic Hawaii Foundation Hui Malama O Moomomi Ilio'ulaokalani Coalition Kahea – the Hawaiian/Environmental Alliance Kamehameha Schools Ke Aupuni Lokahi

Maui Invasive Species Committee
Maui Nui Botanical Gardens
Mediation Center of Moloka'i
Moanalua Gardens Foundation
Moloka'i 4-H
Moloka'i Ranch
Na Kupuna o Maui
Native Hawaiian Plant Society
The Nature Conservancy
Pu'u O Hoku Ranch
Sierra Club, Maui Group

Individuals Dr. Emmett Aluli
 Riki Cooke
 Shannon Crivello
 Crystal Egusa
 Vanda Hanakahi
 Adolph Helm
 Walter Mendez
 Ron Rapanot, Sr.

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Table 2: Rare Birds of Pu'u Ali'i Natural Area Reserve

Table 3: Rare Snails of Pu'u Ali'i Natural Area Reserve

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

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: U.S. Fish and Wildlife Service Endangered Species Act Section 7 consultation concurrence letter

Appendix 2: Archaeological Survey Clearance Form KALA/2003/001

Appendix 3: Comments received during the public comment period and responses

TABLE I
RARE PLANTS OF PUU ALII 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>Platago princeps</i> var. <i>laxiflora</i>	E	?
<i>Plantathera holochila</i>	E	?
<i>Ranunculus mauianus</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:

SOC = Species of Concern

E = Endangered

C = Candidate for listing

Status in Reserve:

* = confirmed, seen during 1989 survey or later.

x = cited in recent literature but not observed during survey.

? = historically known from the vicinity/similar habitat;
no recent observations.

Based on Puu Alii Management Plan (1991).

Taxonomy follows Wagner et. al. (1990) revised

TABLE 2
RARE BIRDS OF PUU ALII NATURAL AREA RESERVE

Scientific Name (Common Name)	Population Estimate (Molokai) ¹	Federal/State Status ²	HHP Rank ³
<i>Myadestes lanaiensis rufus</i> (Molokai thrush or oloma' o)	19 ± 38	LE	1
<i>Paroreomyza flammea</i> (kakawahie, Molokai 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 Molokai population considered endangered by the State of Hawaii only (DLNR 1986)

³ Key to Hawaii 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 PUU ALII 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 Hawaii Heritage Program Ranks:
1 Critically imperiled globally (typically 1-5 occurrences)

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**Figure 1: Proposed and Existing Fencing
Puu Alii NAR, Kalawao, Hawaii**

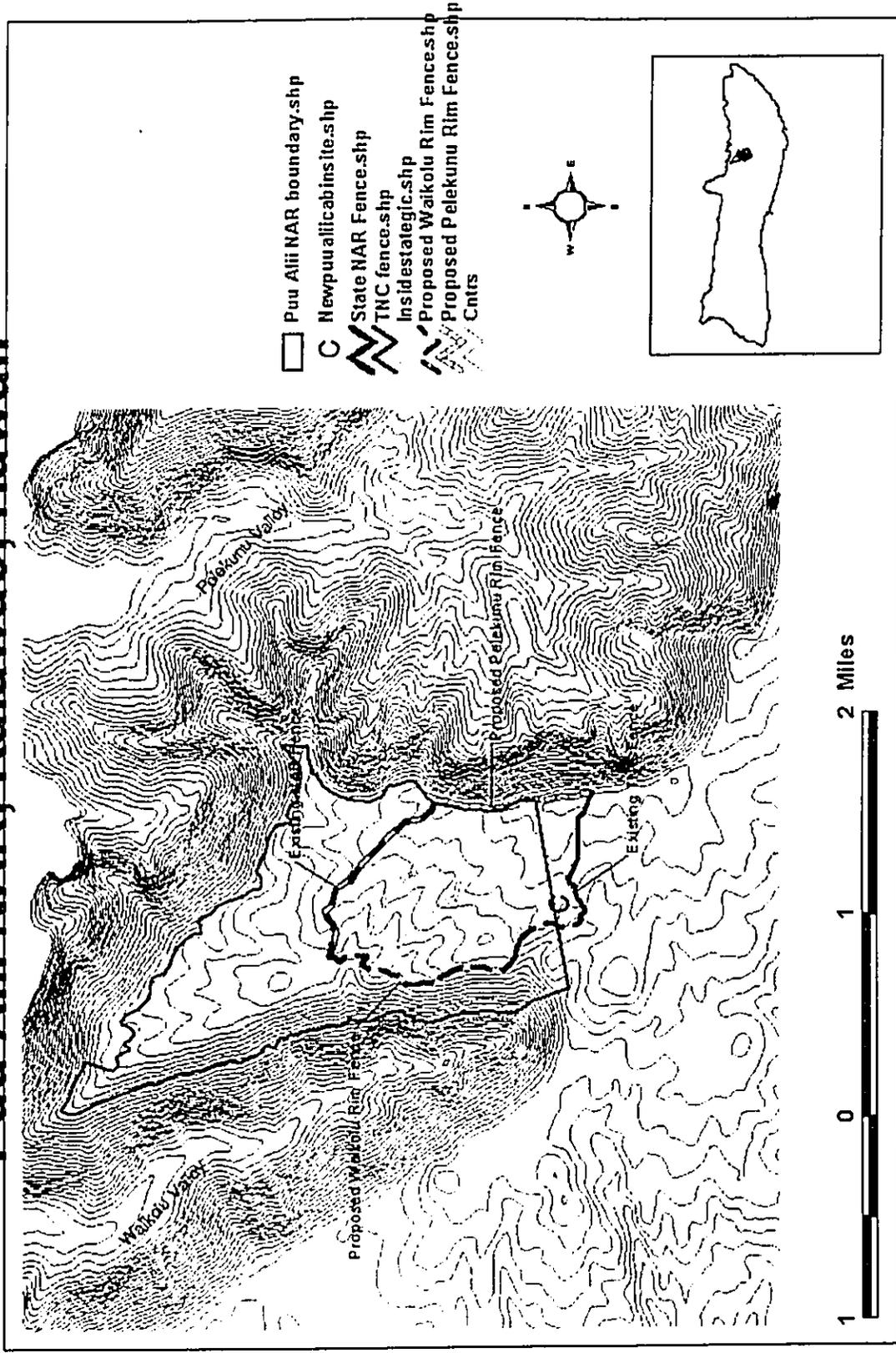


Figure 2
Contour Map of Pu'u Ali'i NAR vicinity
and features mentioned in the EA

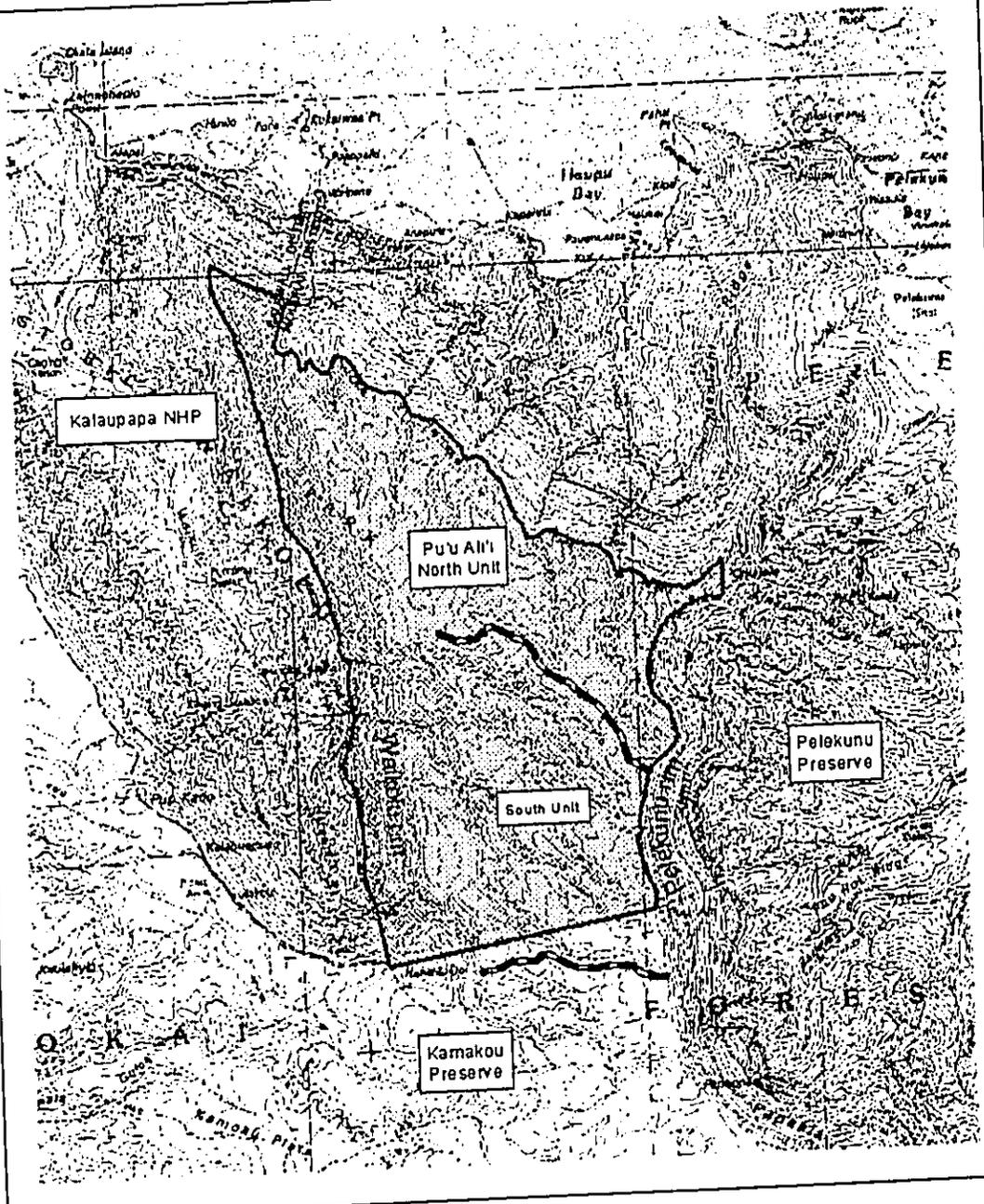
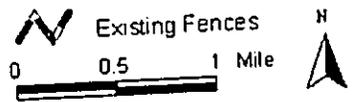
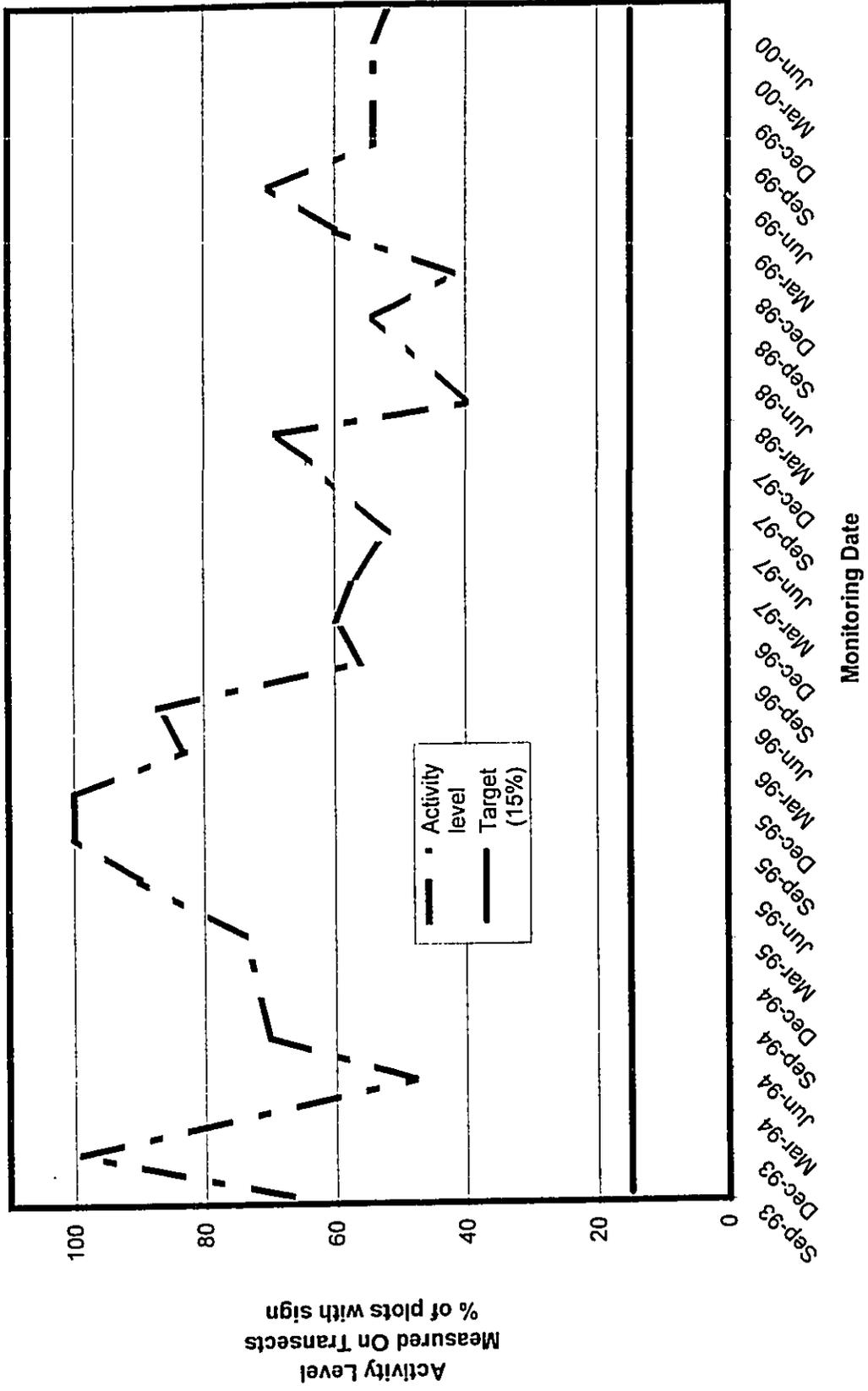


Figure 3
Puu Alii NAR Ungulate Activity
During Hunting Test



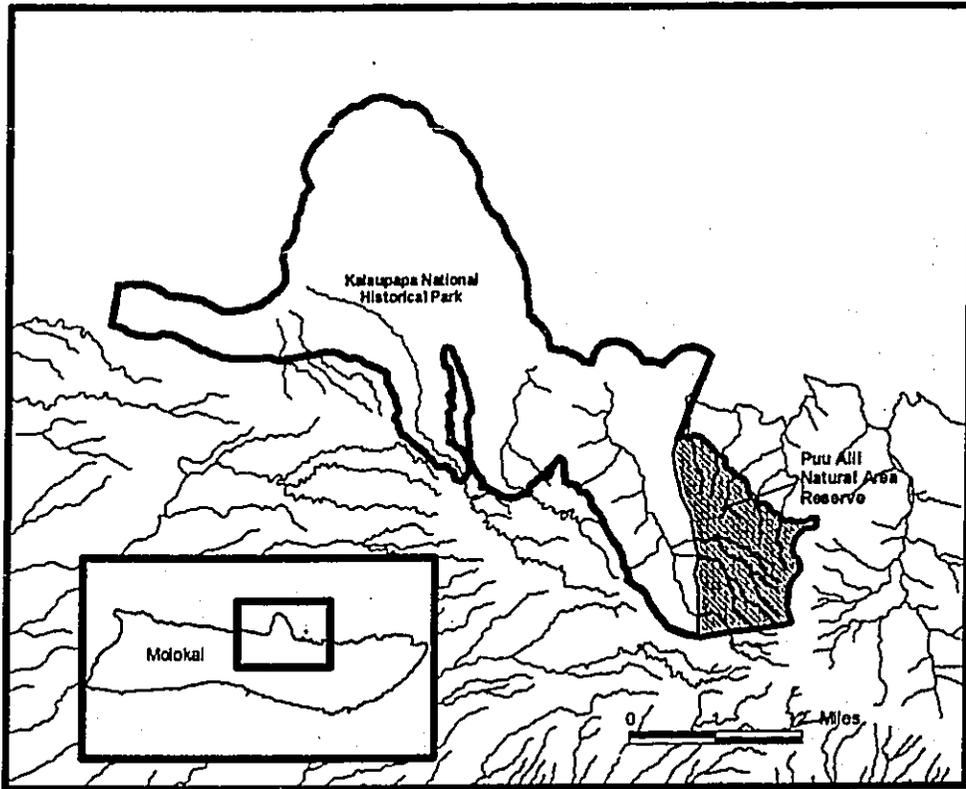
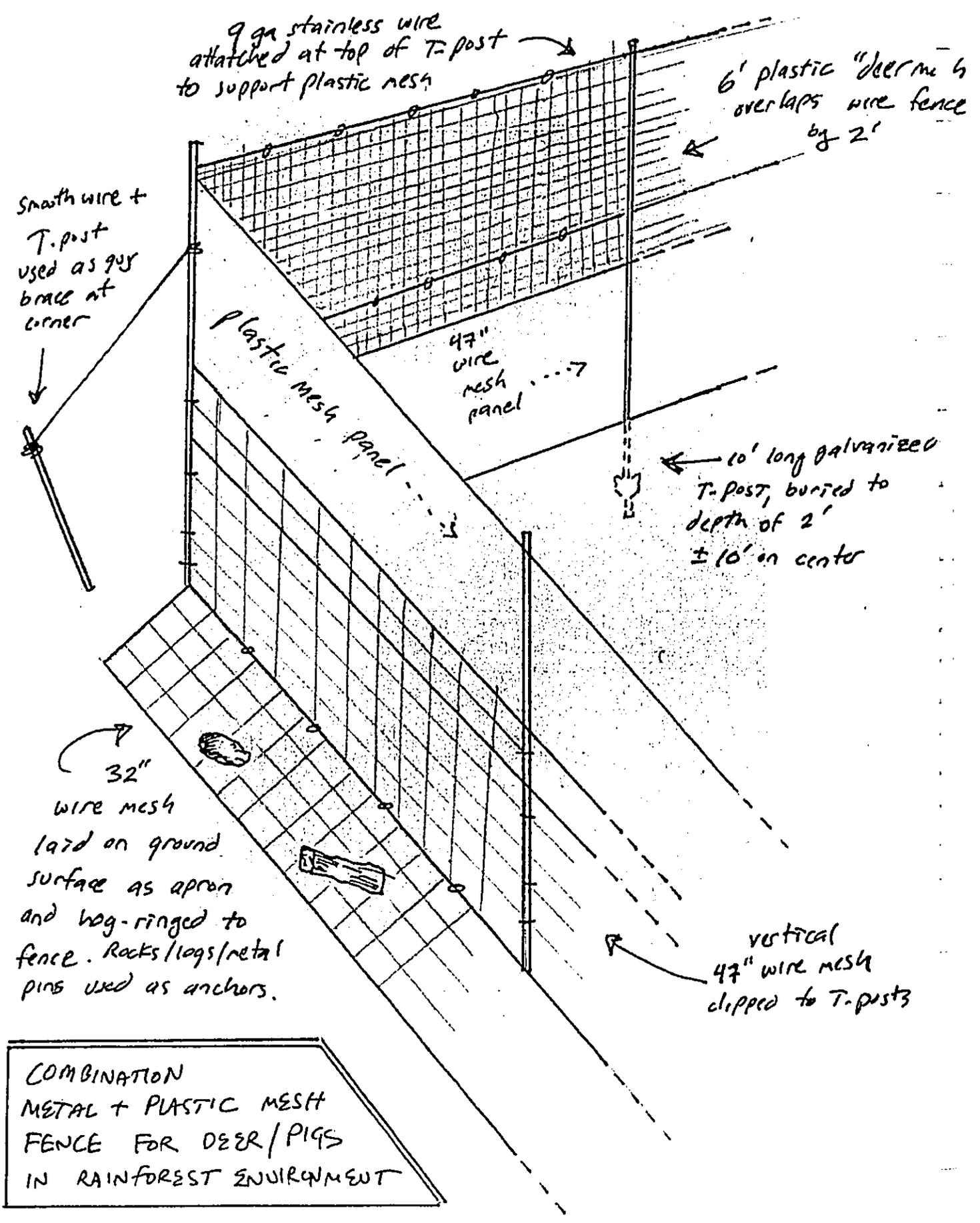
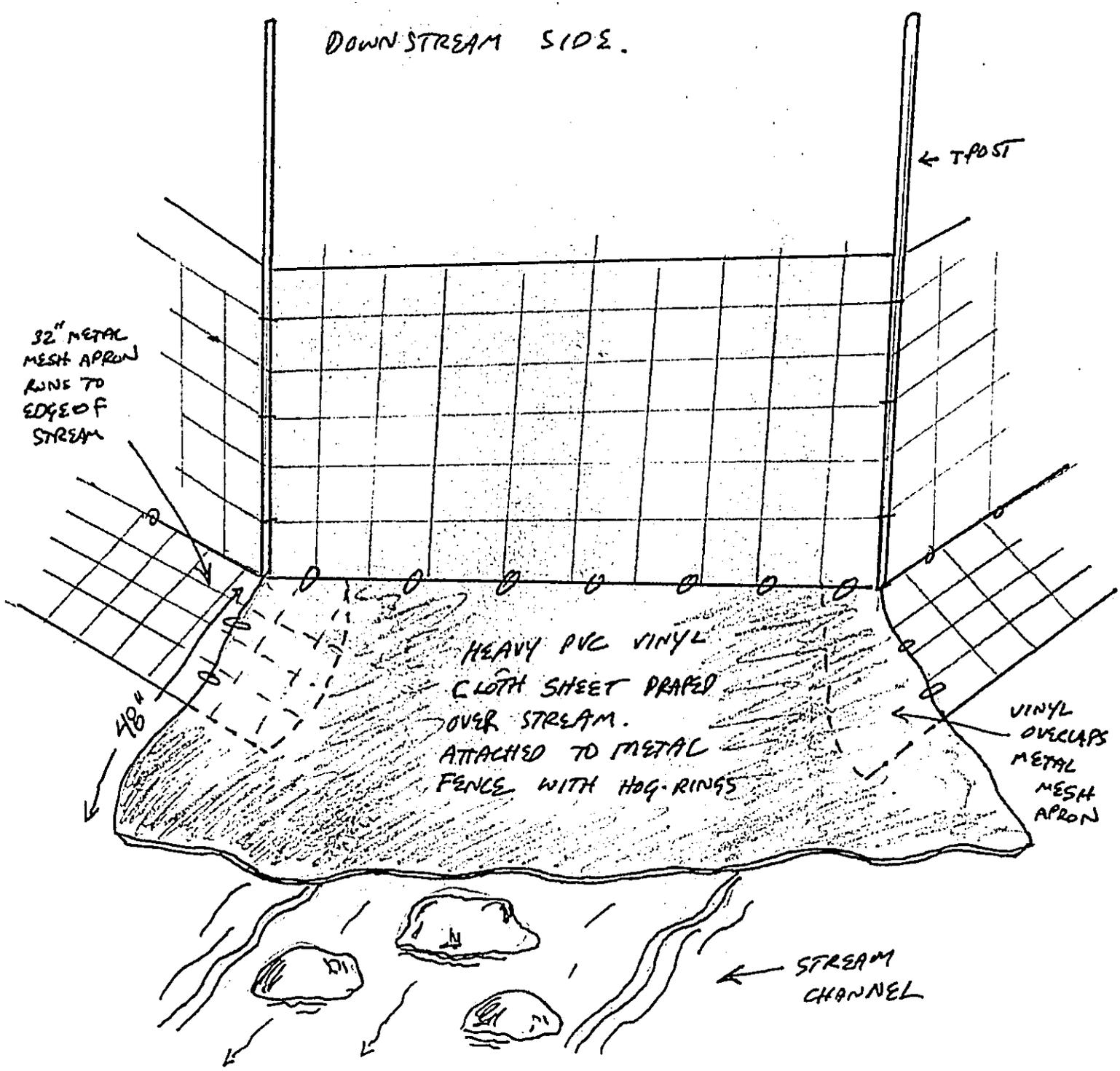


Figure 4. Location of Puu Aii State Natural Area Reserve within Kalaupapa National Historical Park

Figure 5: 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.



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Appendix 1: U.S. Fish and Wildlife Service Endangered Species Act Section 7
Consultation Concurrence Letter



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:
1-2-2003-I-086

FEB 13 2003

Guy D. Hughes
Kalaupapa National Historical Park
P.O. 2222
Kalaupapa, Hawaii 96742

Dear Mr. Hughes:

This responds to your request of January 17, 2003, for the U. S. Fish and Wildlife Service's concurrence with your determination under section 7 of the Endangered Species Act. You determined that the implementation of a fencing project in Puu Alii NAR, Kalawao County, Molokai, is not likely to adversely affect any federally listed or proposed species. Your letter was received in this office on January 23, 2003. The proposed project involves fencing off 500 acres of the most pristine part of the rainforest and removing all animals from the enclosure. The project consists of constructing 2.9 miles of new fence and retrofitting 2.75 miles of existing fence. This would be accomplished by connecting two existing fences that were previously built by The Nature Conservancy of Hawaii and Hawaii State DLNR Division of Forestry and Wildlife. No rare plants were noticed on the proposed route during a survey. Additional plant surveys will be conducted as the fence line is being cleared upon implementation, and the route will be adjusted to minimize damage to rare plant species.

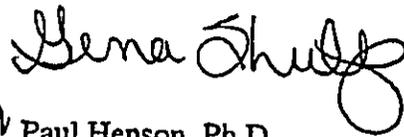
According to the information provided with your January 17th letter and pertinent information in our files, including maps prepared by the Hawaii Natural Heritage Program, no federally listed or proposed species occur along the proposed fence line route. However, critical habitat for *Adenophorus periens*, *Clermontia oblongifolia* ssp. *brevipes*, *Cyanea grimesiana* spp. *grimesiana*, *Cyanea procera*, *Hibiscus arnottianus* spp. *immaculatus*, *Lysimachia maxima*, *Phyllostegia mannii*, *Platanthera holochila*, *Schiedea nuttallii*, and *Stenogyne bifida* has been proposed in the area. We believe that the proposed fence line is not likely to adversely modify the proposed critical habitat for these plant species.

Guy D. Hughes

2

We appreciate your efforts to conserve endangered species. If you have any questions, please contact Greg Koob, Fish and Wildlife Biologist (phone: 808/541-3441; fax: 808/541-3470).

Sincerely,



 Paul Henson, Ph.D.
Field Supervisor

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Appendix 2: Archaeological Survey Clearance Form KALA/2003/001

CLEARANCE NO. KALA/2003/001
REPORT DATE: March 10, 2003
AUTHOR: Jennifer Cerny

ARCHEOLOGICAL CLEARANCE SURVEY FORM

1. PROJECT: Exclude Ungulates from the Upper Pu`u Ali`i Plateau
Pu`u Ali`i, Molokai.
2. PACKAGE NO.: N/A
3. CONSTRUCTION PROJECT DESCRIPTION: Construct a fence surrounding the Natural Area Reserve (NAR) on the Pu`u Ali`i plateau on Molokai in order to systematically remove ungulates from enclosure and protect 34 rare plants, including 5 endangered plants and 4 Species of Special Concern. Project will fence off 500-acres of native rainforest via the construction of 2.9 miles of new fence and retrofit 2.75 miles of existing fence.
4. CONSTRUCTION PROJECT LOCATION: The Pu`u Ali`i Reserve is located on the north shore of Molokai along the upper plateau between Waikolu and Pelekunu valleys. The reserve's location is set in along the plateau from the coastal cliffs at a distance of approximately two miles. The proposed and existing fence lines are not visible from the valleys below, and in most cases will remain inland of an existing trail marked with blue flagging tape that runs along the ridge facing Pelekunu Valley.
5. SURVEY AREA SIZE (a) AND BOUNDARIES (b): a) Total = 11.2 acres.
b) Approximately 489,245 sq. feet

Note: The NAR encompasses approximately 1300 acres. Phase one of the project involves approximately 500 acres. The Archeological Clearance Survey was conducted along the existing and proposed fence-line corridors planned to encompass the 500 acre southern unit of the NAR. Due to low visibility the surveyed corridor was on average 5 meters (16.4 feet) wide and the perimeter of the reserve is approximately 9093 meters (29,832 feet) long, resulting in an estimated 489,245 square feet (45,465 square meters) surveyed.
6. DATE(S) OF SURVEY: November 14-15, 2002
7. SURVEYOR(S): Jennifer Cerny, Park Cultural Anthropologist/Chief of Cultural Resources
8. NUMBER OF PERSON-DAYS IN SURVEY: Approx. 2.0
9. DESCRIPTION OF AREA SURVEYED: Native rainforest.
10. SURVEY PROCEDURE: Reconnaissance.

11. DESCRIPTION OF CULTURAL RESOURCES LOCATED: There is an absence of cultural/archeological surface features and sites along the existing and proposed fence lines.

12. EVALUATION OF CULTURAL RESOURCES LOCATED: An existing trail currently marked with blue flagging tape runs along the rim that looks east over Pelekunu Valley.

13a. NATIONAL REGISTER STATUS:

- On Register: Kalaupapa National Historic Landmark
- In Process of Nomination:
- Eligibility Determination in Process:
- No Action Yet
- Does Not Meet Criteria
- Not applicable (N/A)

13b. SHPO Consultation:

- N/A
- Yes:

14. EFFECT OF PROJECT ON CULTURAL RESOURCES:
No Adverse Affect.

15a. RECOMMENDATIONS:

- Clearance Not Recommended
- Clearance Recommended with the Following Condition(s):

If concealed archeological resources are encountered during project activities, all necessary steps will be taken to protect them and to notify the Park Anthropologist and/or Pacific Island Support Office Archeologist, immediately.

- 15b. This archeological clearance completes Section 106 documentation for this undertaking.
- This clearance must be included with other Section 106 documentation (e.g. Triple X Form) prior to SHPO or ACHP distribution.

16. ENCLOSURES:

- USGS Map(s):
- Project Map(s):
- Project Design Data:
- Site Record(s):

17. NATIVE AMERICAN CONSULTATION or Traditional Cultural Property (TCP) Survey: Molokai Island Burial Council, June 18, 2003. Project was presented to the Council. Mention was made by one Council member that there are a few mo`olelo, or stories, associated with the general Pu`u Ali`i area, however, additional information is pending.

18. REFERENCES: Summers, Catherine. 1971. Molokai: A Site Survey. Pacific Anthropology Records No. 14. Bishop Museum Press, Honolulu, Hawaii.

Revised 9/15/03

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Appendix 3

Public Comment Received on Draft EA and Responses

Written comments were received from the following agencies and organizations during the public comment period:

- State of Hawai'i, Office of Environmental Quality Control
- State of Hawai'i, Department of Land and Natural Resources
- State of Hawai'i, State Historic Preservation Division
- State of Hawai'i, Land Use Commission
- County of Maui, Department of Public Works and Environmental Management
- County of Maui, Department of Planning
- Richard Larson

LINDA LINGLE
GOVERNOR OF HAWAII



Randy /
Petsy
GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

January 21, 2004

Mr. Peter Young, Chair
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawai'i 96809

Dear Mr. Young:

Subject: Draft Environmental Assessment for the Pu'u Ali'i NAR Ungulate-Proof Fence, Moloka'i

Thank you for the opportunity to review the subject document. We have no comments. Should you have any questions, please call Jeyan Thirugnanam at 586-4185.

Sincerely,

Genevieve Salmonson
Genevieve Salmonson
Director

c: Kalaupapa National Historic Park

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DAN DAVIDSON
DEPUTY DIRECTOR FOR LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR FOR
THE COMMISSION ON
WATER RESOURCE MANAGEMENT

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KAHOOLAWE ISLAND RESERVE
COMMISSION
LAND MANAGEMENT
STATE PARKS

FEB 25 2004

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, HI 96813

Re: Draft Environmental Assessment, Pu'u Ali'i NAR Ungulate-Proof Fencing, Moloka'i

Dear Ms. Salmonson:

Thank you and your staff for taking the time to review the Draft Environmental Assessment for the Pu'u Ali'i Natural Area Reserve Ungulate-Proof Fence on the island of Moloka'i. We understand that you have no comments at this time. If you have any future questions or concerns about this project, please feel free to contact me at (808) 873-3506.

Sincerely,

William Evanson
Maui Natural Area Reserves Specialist

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 14, 2004

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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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BUREAU OF CONVEYANCES
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HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

PUUALIIDOF AW.RCM

LD-NAV

MEMORANDUM:

TO: Christen Mitchell, Planner
Division of Forestry and Wildlife

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Division of Forestry and Wildlife Proposed Construction of Ungulate- Proof Fencing
at Pu'u Ali'i Natural Area Reserve, Molokai, Hawaii
TMK: (2) 6-1-001 & 002 and 5-4-003: 026

The Land Division transmitted a copy of the document pertaining to the subject matter to the Land Division Maui District Land Office and the DLNR Office of Conservation and Coastal Lands for their review and comment.

Attached is a copy of the Office of Conservation and Coastal Lands comment and Maui District Land Office response.

The Land Division has no other comment to offer on the subject matter.

If you have any questions, please feel free to contact Tiger Mills of the Office of Conservation and Coastal Lands at 808-587-0382 or Nicholas A. Vaccaro of the Land Division Support Services Branch at 808-587-0384.

C: OCCL

LINDA LINGLE
GOVERNOR OF HAWAII



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LAND DIVISION

JAN - 8 10 49 AM '04
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE OF HAWAII

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LAND DIVISION

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HONOLULU, HAWAII 96809

OFFICE
DIVISION OF
LAND MANAGEMENT
2003 DEC 24 PM 1:39

PETER J. YOUNG
CHAIRPERSON
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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

December 22, 2003
Ref.: PUUALIIDOFAW.CMT

LD/NAV - L-3647
Suspense date 1/10/04

MEMORANDUM:

TO: Division of Aquatic Resources
APP Division of Forestry & Wildlife
Division of State Parks
Engineering Division
Na Ala Hele Trails
Division of Boating and Ocean Recreation
Commission on Water Resource Management
Land Division Branches:
Office of Conservation and Coastal Lands
XXX Maui District Office (DD)
XXX Planning and Development (DD)

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Construction of Ungulate-Proof Fencing, Pu'u Ali'i Natural
Area Reserve, Molokai, Hawaii
Division of Forestry and Wildlife (DOFAW)

Please review the attached document covering the subject matter and submit your comments (if any) on Division letterhead signed and dated within the time requested above. Should you need more time to review the subject matter, please contact Nicholas A. Vaccaro at ext.: 7-0384.

If this office does not receive your comments on or before the suspense date, we will assume there are no comments.

We have no comments.

Comments attached.

Signed Jason K. Koga
Name Jason K. Koga
Date: 1/5/04

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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

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DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

REF.:OCCL:TM

CORRESPONDENCE MO-04-89

JAN - 8 2004

MEMORANDUM

TO: Dierdre S. Mamiya, Administrator
Land Division

FROM: Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

SUBJECT: Construction of Ungulate-Proof Fencing, Pu'u Ali'i Natural Area Reserve,
Located at TMK 2-5-4-003: 026 and TMK 2-6-1-001:002

The Office of Conservation and Coastal Lands has received a memorandum from the Land Division, dated December 22, 2003, regarding the construction of ungulate-proof fencing within the Pu'u Ali'i Natural Area Reserve, located at TMK 2-5-4-003:026 and TMK 2-6-1-001:002.

The Department notes departmental records indicate the subject parcels is located in the State Land Use Conservation District, Resource and Protective subzone. The proposed use is an identified land use, pursuant to Section 13-5-22 of the Hawaii Administrative Rules (HAR); P-7, SANCTUARIES; D-1, "Plant and wildlife sanctuaries, natural area reserves and wilderness and scenic areas, including habitat improvements under an approved management plan." Pursuant to Section 13-5-40(a), HAR, a public hearing will be required as the proposed project involves a board permit in the protective subzone.

Should you have any questions, please contact Tiger Mills of our Office of Conservation and Coastal Lands at 587-0382.

RECEIVED
LAND DIVISION
2004 JAN -9 A 9:11
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
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Ms. Dierdre S. Mamiya
Administrator
Department of Land and Natural Resources
Land Division
1151 Punchbowl Street
Honolulu, HI 96813

FEB 25 2004

Re: Draft Environmental Assessment, Pu'u Ali'i NAR Ungulate-Proof Fencing, Moloka'i

Dear Ms. Mamiya:

Thank you and your staff for taking the time to review the Draft Environmental Assessment for the Pu'u Ali'i Natural Area Reserve Ungulate-Proof Fence on the island of Moloka'i. We understand that a copy of the Draft EA was distributed to the Maui District Land Office and the Office of Conservation and Coastal Lands for review, and that Maui Land District Office has no comments at this time. We acknowledge the Office of Conservation and Coastal Lands' confirmation that the project is within the Resource and Protective Subzones of the Conservation District. Based on additional discussions with staff of the Office of Conservation and Coastal Lands, we understand that the construction of fencing in Pu'u Ali'i NAR is considered a non-conforming use, pursuant to Section 13-5-37 of the Hawai'i Administrative Rules, consistent with the purposes of the establishment of the existing Natural Area Reserve, and as such, does not trigger the need for a new Conservation District Use permit issued by the Board or a public hearing. We would note, however, that the Division and Kalaupapa National Historical Park hosted a public informational meeting on this project in March 2003 and incorporated all issues raised into the Draft EA. If you have any future questions or concerns about this project, please feel free to contact me at (808) 873-3506.

Sincerely,

William Evanson
Maui Natural Area Reserves Specialist

Cc: Jason Koga, Maui District Land Office
Sam Lemmo, Office of Conservation and Coastal Lands

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

PETER T. YOUNG
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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

January 26, 2004

MEMORANDUM

LOG NO: 2004.0225
DOC NO: 0401SC12

TO: Christen Mitchell
Division of Forestry and Wildlife

FROM: P. Holly McEldowney, Deputy State Historic Preservation Officer *PHM*
State Historic Preservation Division

SUBJECT: National Historic Preservation Act - Section 106 Compliance Review of
The Proposed Construction of the Ungulate-Proof Fencing at Pu'u Ali'i
Natural Area Reserve [State/DOFAW w/Federal Involvement]
Ko'olau, Moloka'i
TMKs (2)-5-4-003:026; 6-1-001:002

Thank you for the opportunity to comment on the proposed installation of 2.9 miles of new fence line at Pu'u Ali'i Plateau on Moloka'i, and the retrofit of 2.75 miles of existing fence. We received your notification of the proposed undertaking on December 17, 2003 and provide the following comments. Our review is late, and we apologize for any inconvenience this may cause.

We believe that "no historic will be affected" by the proposed undertaking. The fence line sections and temporary camp site will be constructed in areas where, due to elevation and topography, it is unlikely that historic sites are present. In addition, Cultural Resource Management staff of Kalaupapa National Historic Park conducted field inspections of the project area and found no evidence of historic sites.

Should you have any questions, please feel free to contact Sara Collins at 692-8026.

SC:jen

c: Michael Foley, Director, Dept of Planning, 250 South High Street, Wailuku, HI 96793
Cultural Resources Commission, Planning Dept, 250 S. High Street, Wailuku, HI 96793
Malia Akutagawa, Chair, Moloka'i Png Commission, PO Box 1715, Kaunakakai, HI 96748
Guy Hughes, Kalaupapa National Historic Park, PO Box 2222, Kalaupapa, HI 96742
Office of Environmental Quality Control, 235 S. Beretania St, Suite 702, Honolulu, HI 96813

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

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AQUATIC RESOURCES
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FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE
COMMISSION
LAND MANAGEMENT
STATE PARKS

Ms. P. Holly McEldowney, Administrator
State Historic Preservation Division
Department of Land and Natural Resources
Kukuihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, HI 96707

FEB 25 2004

Re: Draft Environmental Assessment, Pu'u Ali'i NAR Ungulate-Proof Fencing, Moloka'i

Dear Ms. McEldowney:

Thank you and your staff for taking the time to review the Draft Environmental Assessment for the Pu'u Ali'i Natural Area Reserve Ungulate-Proof Fence on the island of Moloka'i.

We appreciate the Division's finding that "no historic properties will be affected" by the proposed fencing due to the planned construction in areas where it is unlikely that historic sites are present due to elevation and topography. If you have any future questions or concerns about this project, please feel free to contact me at (808) 873-3506.

Sincerely,

A handwritten signature in black ink, appearing to read "William Evanson".

William Evanson
Maui Natural Area Reserves Specialist

LINDA LINGLE
GOVERNOR

RECEIVED



ANTHONY J.H. CHING
EXECUTIVE OFFICER

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STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
P.O. Box 2359
Honolulu, Hawaii 96804-2359
Telephone: 808-587-3822
Fax: 808-587-3827

January 5, 2004

Mr. Christen Mitchell
Division of Forestry and Wildlife
Department of Land and Natural Resources
1151 Punchbowl Street, Room 224
Honolulu, Hawaii 96813

Dear Mr. Mitchell:

Subject: Draft Environmental Assessment (DEA) for the Construction of
Ungulate-Proof Fencing
Pu`u Ali`i Natural Area Reserve, Molokai, Hawaii
Tax Map Key Nos: 6-1-01: 2 and 5-4-03: 26

We have reviewed the subject DEA and confirm that the project site is designated within the State Land Use Conservation District.

We have no further comments to offer at this time. Thank you for the opportunity to comment on the subject DEA.

Please feel free to contact Bert Saruwatari of my office at 587-3822, should you require clarification or any further assistance.

Sincerely,

A handwritten signature in cursive script that reads "Anthony J.H. Ching".

ANTHONY J.H. CHING
Executive Officer

c: Office of Environmental Quality Control
Kalaupapa National Historic Park

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

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DEPUTY DIRECTOR FOR LAND

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THE COMMISSION ON
WATER RESOURCE MANAGEMENT

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FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE
COMMISSION
LAND MANAGEMENT
STATE PARKS

Mr. Anthony Ching, Executive Officer
Department of Business, Economic Development and Tourism
Land Use Commission
PO Box 2359
Honolulu, HI 96804

FEB 25 2004

Re: Draft Environmental Assessment, Pu'u Ali'i NAR Ungulate-Proof Fencing, Moloka'i

Dear Mr. Ching:

Thank you and your staff for taking the time to review the Draft Environmental Assessment for the Pu'u Ali'i Natural Area Reserve Ungulate-Proof Fence on the island of Moloka'i. We acknowledge your confirmation that the project site is within the State Land Use Conservation District and understand that you have no further comments at this time. If you have any future questions or concerns about this project, please feel free to contact me at (808) 873-3506.

Sincerely,

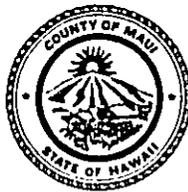
A handwritten signature in cursive script, appearing to read "William Evanson".

William Evanson
Maui Natural Area Reserves Specialist

ALAN M. ARAKAWA
Mayor

GILBERT S. COLOMA-AGARAN
Director

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



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

January 15, 2004

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

TRACY TAKAMINE, P.E.
Wastewater Reclamation Division

LLOYD P.C.W. LEE, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

JOHN D. HARDER
Solid Waste Division

Christen Mitchell
DLNR, Division of Forestry and Wildlife
1151 Punchbowl Street, Room 224
Honolulu, HI 96813

**SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
FENCING FOR PU'U ALI'I NATURAL AREA RESERVE
DEPARTMENT OF LAND AND NATURAL RESOURCES
TMK: (2) 5-4-003:026; 6-1-001:002**

Dear Ms. Mitchell:

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

If you have any questions regarding this memorandum, please call Milton Arakawa at 270-7845.

Very truly yours,

A handwritten signature in black ink, appearing to read "G. Coloma-Agaran", is written over the typed name.

GILBERT S. COLOMA-AGARAN
Director of Public Works
And Environmental Management

RMN:jlh

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LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET
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PETER T. YOUNG
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FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE
COMMISSION
LAND MANAGEMENT
STATE PARKS

Mr. Gilbert Coloma-Agaran, Director
County of Maui
Department of Public Works and Environmental Management
250 South High Street
Wailuku, HI 96793

FEB 25 2004

Re: Draft Environmental Assessment, Pu'u Ali'i NAR Ungulate-Proof Fencing, Moloka'i

Dear Mr. Coloma-Agaran:

Thank you and your staff for taking the time to review the Draft Environmental Assessment for the Pu'u Ali'i Natural Area Reserve Ungulate-Proof Fence on the island of Moloka'i. We understand that you have no comments at this time. If you have any future questions or concerns about this project, please feel free to contact me at (808) 873-3506.

Sincerely,

A handwritten signature in cursive script, appearing to read "William Evanson".

William Evanson
Maui Natural Area Reserves Specialist

DLNR Division of Forestry and Wildlife
1151 Punchbowl St.
Room 224
Honolulu, HI 96813

Aloha,

Re your article in the Maui News on Dec. 25, 2003, Please fence in the Pu'u Ali'i Natural Area Reserve on Molokai. We don't need pigs rooting out native plants and letting other invasive species in among the indigenous species. Give the pigs to the homeless or some charitable organization for distribution to people who need them more than Molokai.

Mahalo nui loa,



Richard H. Larson
760 S. Kihei Rd. #515
Kihei, HI 96753

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET
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FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE
COMMISSION
LAND MANAGEMENT
STATE PARKS

Mr. Richard Larson
760 South Kihei Road, #515
Kihei, HI 96753

FEB 25 2004

Re: Draft Environmental Assessment, Pu'u Ali'i NAR Ungulate-Proof Fencing, Moloka'i

Dear Mr. Larson:

Thank you for commenting on Draft Environmental Assessment for the Pu'u Ali'i Natural Area Reserve Ungulate-Proof Fence on the island of Moloka'i. We appreciate your recognition of the need to protect native plants from feral pigs and invasive species, as well as your suggestion that we give the pigs to the homeless or some charitable organization. We will try to recover the meat from the pigs in the fenced area whenever it is feasible and safe to do so. If you have any future questions or concerns about this project, please feel free to contact me at (808) 873-3506.

Sincerely,

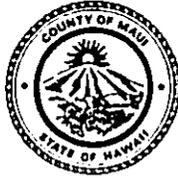
A handwritten signature in cursive script, appearing to read "William Evanson".

William Evanson
Maui Natural Area Reserves Specialist

ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

January 16, 2004

Ms. Christen Mitchell
DLNR, Division of Forestry and Wildlife
1151 Punchbowl Street, Room 224
Honolulu, Hawaii 96813

Dear Ms. Mitchell:

RE: Comments on the Draft Environmental Assessment (DEA) for the Construction of Ungulate-Proof Fencing, Upper Pu'u Ali'i Plateau, Pu'u Ali'i Natural Area Reserve Located at Tax Map Key: 6-1-001: 002 and 5-4-003: 026, Island of Molokai, Hawaii (LTR 20035047)

In response to your request received on December 18, 2003, the Planning Department provides the following comments for the above referenced project:

- Illustrate the public access points (gates), trails, dirt roadways, and helicopter landing zones on the attached maps.
- Discuss the maintenance plan for the proposed fence lines once construction is completed.
- Provide construction drawings and/or plans illustrating the specifications for each portion of the project as described on pages 8 and 9.
- The report indicates the use of custom stream guards with hanging curtains at stream crossings and waterfalls in the Waikolu specifications (page 9). Are these type of guards proposed at other locations? Provide drawings and plans. Discuss any potential impacts, including but not limited to, visual.
- Discuss the proposed project's relation and compliance with the Maui County General Plan and Molokai Community Plan.
- Archaeological resources and impacts should include input from the State Historic Preservation Division. Since pre-consultation activities

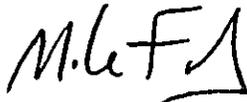
Ms. Christen Mitchell
January 16, 2004
Page 2

did not include SHPD comments, the DEA should be forwarded to their office for review and comment.

- The findings and conclusions supporting the anticipated determination of a FONSI should be included in the document.
- Please note that per Section 11-200-9, HAR, a proposing agency shall seek, at the earliest practicable time, the advice and input of the county agency responsible for implementing the county's general plan (Maui Planning Department), as well as, consult with other agencies having jurisdiction or expertise, citizen groups and individuals. As such, the Maui Planning Department requests the opportunity to advise prior to the preparation of the Draft EA for future projects.
- Expand on the Cultural Resources assessment portion of the Draft EA. A cultural impact assessment differs from an archaeological/historic resource assessment in that it includes information relation to the practices and beliefs of a particular cultural or ethnic group/groups. Please refer to OEQC's guidance manual on assessing cultural impacts.
- Provide additional documentation or justification as to the conclusion that no impacts are anticipated for "Wetlands" and "Water" on page 16 of the report.
- Per Chapter 16.26, Building Code, Maui County Code, a building permit is required for fences over 6 feet in height when measured from the lowest grade to the top of the fence or wall.

Thank you for your cooperation. Should you need additional clarification, please contact Ms. Kivette A. Caigoy, Staff Planner, of this office at 270-7735.

Sincerely,



MICHAEL W. FOLEY
Planning Director

Ms. Christen Mitchell
January 16, 2004
Page 2

MWF:KAC:lar

c: Wayne A. Boteilho, Deputy Planning Director
Clayton Yoshida, Planning Program Administrator
Kivette A. Caigoy, Staff Planner
Project File
General File
K:\WP_DOCS\PLANNING\LETTERS\lr2003\5047_PuuAiiNaturalResDEA.wpd

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET
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PETER T. YOUNG
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HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE
COMMISSION
LAND MANAGEMENT
STATE PARKS

Mr. Michael Foley, Director
Maui County Department of Planning
250 South High Street
Wailuku, HI 96793

FEB 25 2004

Re: Draft Environmental Assessment, Pu'u Ali'i NAR Ungulate-Proof Fencing, Moloka'i

Dear Mr. Foley:

Thank you and your staff for taking the time to review the Draft Environmental Assessment for the Pu'u Ali'i Natural Area Reserve Ungulate-Proof Fence on the island of Moloka'i. We have the following responses to your comments:

- *Illustrate the public access points (gates), trails, dirt roadways, and helicopter landing zones on the attached maps*

The public access points are not illustrated in the attached maps because their final locations will be determined after additional consultation with the local hunting community on Moloka'i. Trails and roadways are not illustrated in the attached maps because there are no existing trails or dirt roadways within the project area and none will be constructed during construction. The Pelekunu and Hanalilolilo trails are located outside the planned fencing, immediately to the south and to the east of the proposed fencing, will not be affected by the construction, and are not State-maintained trails. Finally, the final locations for the helicopter landing zones are not illustrated as they will be selected based on the site conditions prior to construction.

- *Discuss the maintenance plan for the proposed fence lines once construction is complete.*

Staff of the Division of Forestry and Wildlife and of Kalaupapa National Historical Park will conduct be periodically flown to the helispots established during construction in order to hike the entire fence line. This would take place at 2-4 month intervals and also after severe storms. Encroaching vegetation, downed trees, etc. would be removed and minor repairs made using materials cached on site. Materials for major repairs would be flown in by helicopter sling as needed.

- *Provide construction drawings and/or plans illustrating the specifications for each portion of the project as described on pages 8 and 9.*

A construction drawing illustrating the proposed fencing has been added to the Final Environmental Assessment and is enclosed.

- *The report indicates the use of custom stream guards with hanging curtains and stream crossings and waterfalls in the Waikolu specifications (page 9). Are these types of guards proposed at other locations? Provide drawings and plans. Discuss any potential impacts, including but not limited to, visual.*

Stream guards are planned only on the Waikolu section of the proposed fencing. An illustration of these stream guards has been added to the Final Environmental Assessment and is enclosed. Due to the remote location of the proposed fence line, there are no visual impacts anticipated. No other impacts are anticipated.

- *Discuss the proposed project's relation and compliance with the Maui County General Plan and Molokai Community Plan.*

The proposed construction of ungulate-proof 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." We have amended the Final EA to reflect the project's consistency with these plans.

- *Archaeological resources and impacts should include input from the State Historic Preservation Division: Since pre-consultation activities did not include SHPD comments, the DEA should be forwarded to their office for review and comment.*

The DEA was forwarded to the State Historic Preservation Division for review and comment, and in response, we have received a letter stating that in their opinion, no historic properties will be affected by this project. In addition, the DEA was distributed to the Office of Hawaiian Affairs, Department of Hawaiian Home Lands, the Central Maui Hawaiian Civic Club, the Historic Hawaii Foundation, Na Kapuna o Maui, Kahea – the Hawaiian/Environmental Alliance, and the Ilio'ulaokalani Coalition for their review and comment on any additional archaeological resources or cultural practices. No comments were received from these parties.

- *The findings and conclusions supporting the anticipated determination of a FONSI should be included in the document.*

The findings and conclusions supporting the anticipated determination of a Finding of No Significant Impact were outlined on pages 18 –20 of the Draft Environmental Assessment and were based on the evaluation of the project in relation to the criteria identified in HAR section 11-200-12. Specifically, they are as follows:

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.

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

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 500-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.*

This project follows the mandate of the state Natural Area Reserve Law, HRS 195, recognizing Hawai'i's unique natural resources 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 proposed action is also consistent with Chapter 344 and with the State's mandate to conserve threatened and endangered species, as required by Chapter 195D, HRS.

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

This project is not expected to have substantial 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 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.*

No public facilities will be impacted. No change of population will result from this project.

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

The project will not degrade the environmental quality of the area. The intent of the project is to improve environmental quality by restoring a natural 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 preferred alternative 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 is in accordance with the recommendations of the Service for endangered species recovery.

10. *Detrimentally affects air or water quality or ambient 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. 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 fence alignments that were chosen are set back from cliffs, and where gulches are crossed, natural barriers such as waterfalls were used to minimize stream crossings.

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 was designed not to affect the scenic quality of these areas. Fence alignments were chosen to use terrain and vegetation to screen the fence from public view, especially from the Pelekunu trail and from the Waikolu Lookout. 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 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.

- *Please note that per Section 11-200-9, HAR, a proposing agency shall seek, at the earliest practicable time, the advice and input of the county agency responsible for implementing the county's general plan (Maui Planning Department), as well as, consult with other agencies having jurisdiction or expertise, citizen groups and individuals. As such, the Maui Planning Department requests the opportunity to advise prior to the preparation of the Draft EA for future projects.*

The Division of Forestry and Wildlife apologizes for not having been in direct contact with the County of Maui Planning Department earlier about the proposed fencing in Pu'u Ali'i Natural Area Reserve. Pre-consultation with other agencies and organizations occurred on an informal basis prior to the preparation of the Draft EA and included a public informational meeting held in March 2003. The Division will endeavor to notify and work with the County of Maui Planning Department prior to the preparation of a Draft EA for future projects.

- *Expand on the Cultural Resources assessment portion of the Draft EA. A cultural impact assessment differs from an archaeological/historical resource assessment in that it includes information relation to the practices and beliefs of a particular cultural or ethnic group/groups. Please refer to OEQC's guidance manual on assessing cultural impacts.*

The Division of Forestry and Wildlife recognizes that assessment of cultural impacts is distinct from an archaeological/historical assessment and followed the OEQC recommended protocols as closely as possible. The steps taken to determine the potential impact of the proposed construction of ungulate-proof fencing on cultural practices included the following: (1) literature review to determine if there were any published studies, identified myths or legends, or other documents specific to the Pu'u Ali'i area; (2) pre-consultation with Hui Malama I Na Kupuna o Hawai'i Nei, Moloka'i Island Burial Council, Office of Hawaiian Affairs, and the State Historic Preservation Division to determine the types of cultural resources, practices and beliefs found within the area; and (3) public informational meeting publicized on Moloka'i to receive input from the local community, including information on any traditional or cultural practices in the project area or on any individuals with knowledge of the area. During consultation with the Moloka'i Island Burial Council, a council member mentioned the existence of mo'olelo (legends) associated with the Pu'u Ali'i area, but no additional specific information about the mo'olelo has been found yet. No other information on traditional or cultural practices in the area was received or found, and there have been no applications for special use permits for gathering for traditional and cultural purposes in the Natural Area Reserve. The Draft EA was also distributed to the Office of Hawaiian Affairs, Department of Hawaiian Home Lands, the Central Maui Hawaiian Civic Club, the Historic Hawaii Foundation, Na Kupuna o Maui, Kahea – the Hawaiian/ Environmental Alliance, and the Ilio'ulaokalani Coalition for their review and comment; no

comments were received from any of these organizations. Given the lack of information on traditional and cultural practices in Pu'u Ali'i, the remote location of the proposed fencing, and the long-term benefit that ungulate-proof fencing will provide to the native forest, the Division of Forestry and Wildlife concluded the protective fencing will not negatively impact traditional and cultural practices in the area, if any.

- *Provide additional documentation or justification as to the conclusion that no impacts are anticipated for "Wetlands" and "Water" on page 16 of the report.*

No negative impacts to wetlands are anticipated because there are no wetlands within or adjacent to the project area. No negative impact on water is anticipated because the project is expected to benefit the island's water supply by excluding ungulates from an important watershed area, preventing soil erosion through the continued damage and destruction of native vegetation.

- *Per Chapter 16.26, Building Code, Maui County Code, a building permit is required for fences over 6 feet in height when measured from the lowest grade to the top of the fence or wall.*

Based on prior discussions with the Maui County Department of Public Works, the Division of Forestry and Wildlife believes that no building permit is required for construction of ungulate-proof fencing in the State Conservation District, including deer-proof fences over six feet in height. In addition, Pu'u Ali'i Natural Area Reserve is contained wholly within Kalawao County, and the Division does not believe that the Maui County Building Code applies to Kalawao County. However, the Division will continue to work with the Department of Public Works to acquire any necessary permits.

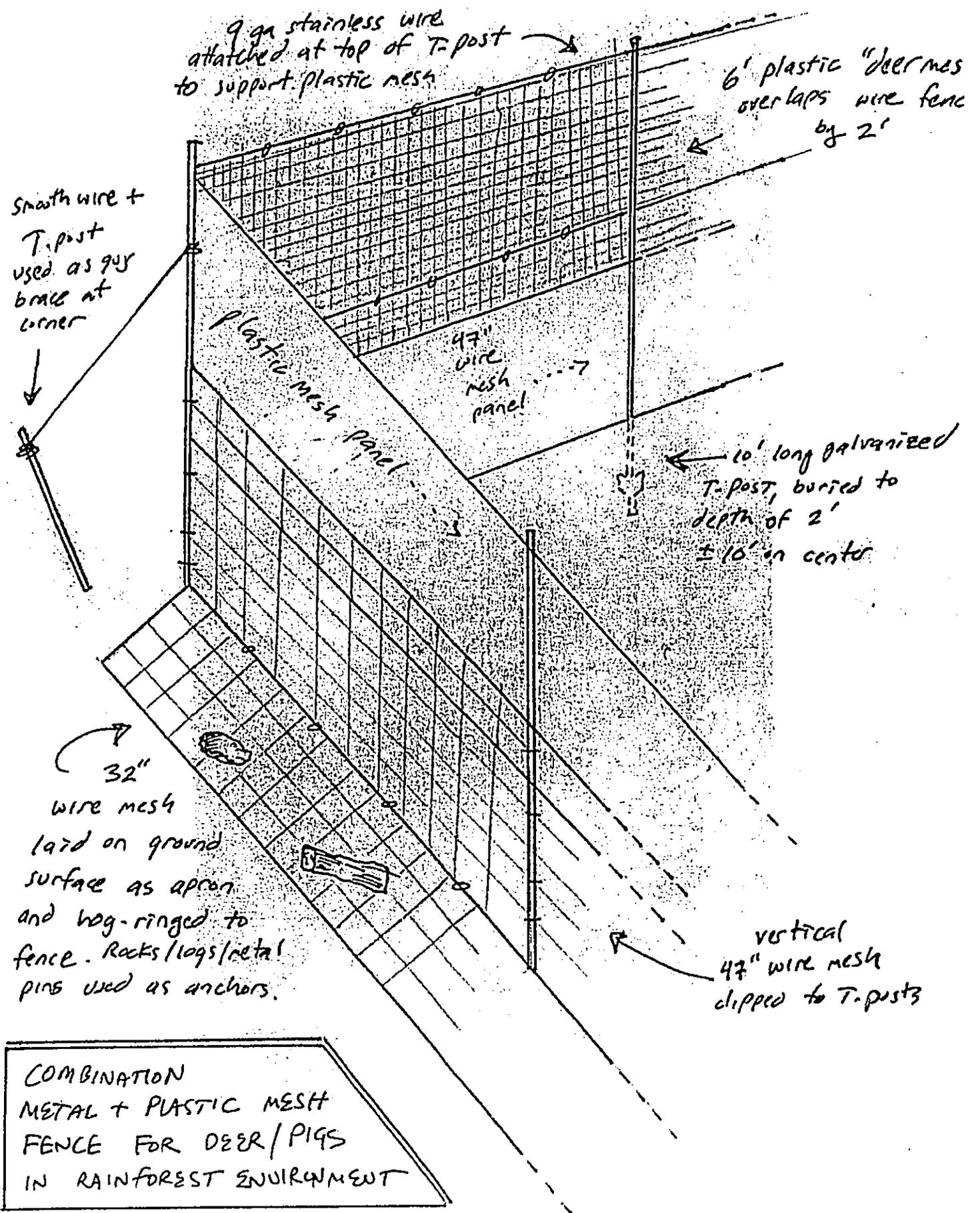
Thank you again for taking the time to review the Draft Environmental Assessment for the Pu'u Ali'i fencing project. If you have any future questions or concerns about this project, please feel free to contact me at (808) 873-3506.

Sincerely,



William Evanson
Maui Natural Area Reserves Specialist

Encl



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.

