

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

180-Day Exp. Date: February 21, 2011
CDUA OA-3561

January 13, 2011

Board of Land and
Natural Resources
State of Hawaii
Honolulu, Hawaii

REGARDING: CDUA OA-3561; Mākua and O`ahu Implementation Plans

APPLICANT: U.S. Army Garrison Hawai`i, Directorate of Public Works, Environmental Division, 947 Wright Avenue, Wheeler Army Air Field

AGENT: Michelle Mansker, Chief, Natural Resources Section
(O`ahu Army Natural Resource Program, OANRP)

LOCATION: Ka`a`awa, Kahana, Kaluanui, Lā`ie, (Ko`olauloa); Pa`ala`a, Kawailoa, Ka`ena (Waialua); Keawa`ula, Kahanaha Iki, Mākaha (Wai`anae); Waiawa, Hālawa (Ewa)

TMK: (1) 5-1-7:1, 5-2-1:1, 5-3-11:1, 5-3-11:9, 5-4-6:1, 5-5-7:2, 6-3-1:1, 6-9-1:3, 6-9-1:4, 6-9-1:30; 6-9-2:13, 8-1-1:7, 8-1-1:12, 8-4-2:1, 8-4-2:14, 9-2-5:25, 9-6-6:1, and 9-6-11:2

AREA OF USE: 1056 acres

SUBZONE: General, Resource, Limited, Protective, and Undesignated

DESCRIPTION OF AREA AND PROPOSED USE:

The *Mākua and O`ahu Implementation Plans* are comprehensive United States Army-initiated plans to manage targeted endangered plant and animal species to stability in defined management areas.

The Plans were developed based on formal consultations with the United States Fish and Wildlife Service (USFWS), and in response to the impacts of military training exercises on endangered species. The USFWS issued a *non-jeopardy* Biological Opinion (BO) on 1999 for routine training at Mākua Military Reservation, and a BO in 2003 for the O`ahu Training Areas (including Dillingham Military Reservation, Kahuku Training Area, Kawailoa Training Area, Schofield Barracks Military Reservation, Schofield Barracks East Range, and South Range Acquisition Area).

The conclusion of no jeopardy was predicated upon the preparation and implementation of the *Mākuia Implementation Plan* and *O'ahu Implementation Plan*, respectively. There is significant overlap between the management goals and activities of the two plans, and so they will be treated as one plan for the purposes of this CDUA.

The plans cover activities on the following subject parcels:

TMK	Moku	Ahupua`a	Subzones ¹	Ownership	Land Management
51007001	Ko`olauloa	Ka`a`awa	R	Kualoa Ranch	
52001001	“	Kahana	R, P	State	State Parks - Kahana
53011001	“	Punalu`u	R, L, P	Bishop	Forest Reserve
53011009	“	Kaluanui	R, L, P	State	State Parks - Sacred Falls
54006001	“	Kaipapa`u & Hau`ula	R, P	State	Forest Reserve
55007002	“	Lā`ie	R, P	Property Reserve	
63001001	Wai`alua	Pa`ala`a & Kawailoa	R, P	Bishop	
68002007	“	Keālia	(Agriculture)	State	Game Management Area
69001003	“	Ka`ena	Undesignated	State	
69001004	“	Ka`ena	Undesignated	State	
69001030	“	Ka`ena	L	State	
69002013	“	Ka`ena	L	State	
81001007	Wai`anae	Keawa`ula	G, R, L	State / Federal	State Parks - Ka`ena
81001012	“	Kahanaha Iki	R	State	
84002001	“	Mākaha	R, P	City and County	
84002014	“	Mākaha	G, R	City and County	
92005025	`Ewa	Honouliuli	R	State	Forest Reserve
96006001	“	Waiawa	R, P	Bishop	
99011002	“	Hālawa	R, P	State	

There are additional management areas on military land that are not covered here. The project areas in the State Land Use Agriculture District are not subject to Conservation District Rules and thus are not covered in this application. The six parcels in the Forest Reserve are also not covered, as OCCL has determined that the activities there are consistent with the maintenance of ongoing nonconforming uses. Work in these parcels was halted in March 2010; a new Memorandum of Understanding between DOFAW and the Army is under review.

This CDUA covers project management units on the remaining parcels in the Conservation District.

Proposed activities include: pedestrian and aerial surveying; monitoring; specimen collection; phytosanitation; aerial and manual rodenticide and herbicide applications; weed control; invasive snail and slug control using dogs; invasive reptile/bird control; construction of snail exclosures; construction of cabins, camp sites, water catchments, and weather stations; construction of small radio antennae; and unexploded ordnance removal.

The majority of the management units are in remote areas in the Ko`olau and Wai`anae mountains, and are accessed via helicopter or foot trails. Cultural practitioners, such as hula halau, do gather in the vicinity of some of the units in cooperation with local landowners. There

¹ Subzone Designations: G = General; R = Resource; L = Limited; P = Protective

are also historic and hunting trails in the remote areas, although no official Nā Ala Hele trails, and some of the management units are proposed for hunting areas.

Targeted plant species covered in this application are:

<i>Abutilon sandwicense</i>	<i>Gardenia mannii</i> (na`u, nānū)	<i>Nototrichium humile</i> (kulu`ī)
<i>Alectryon micrococcus</i> var. <i>macrococcus</i> (ala`alahua, mahoe)	<i>Hedyotis parvula</i>	<i>Phyllostegia</i> sp (2)
<i>Cenchrus agrimonioides</i> var. <i>agrimonioides</i>	<i>Hesperomannia</i> sp. (2)	<i>Plantago princeps</i> var. <i>princes</i> (ale)
<i>Chamaesyce</i> sp. (3 species) (`akoko)	<i>Hibiscus brackenridgei</i> subsp. <i>mokuleianus</i> (ma`o hau hele)	<i>Pritchardia kaalae</i> (loulu)
<i>Cyanea</i> sp. (7) (hāhā)	<i>Huperzia nutans</i>	<i>Pteris lidgatei</i>
<i>Cyrtandra</i> sp. (3) (ha`iwale)	<i>Lobelia gaudichaudii</i> subsp. <i>koolauensis</i>	<i>Sanicula</i> sp. (2)
<i>Delissea waianaensis</i> (hāhā, ohawai)	<i>Melanthera tenuifolia</i>	<i>Schiedea</i> sp. (3)
<i>Dubautia herbstobatae</i> (na`ena`e)	<i>Melicope lydgatei</i> (alani)	<i>Tetramolopium filiforme</i> (pāmakane)
<i>Eugenia koolauensis</i> (nīoi)	<i>Myrsine juddii</i> (kōlea)	<i>Viola</i> sp. (2) (pāmakane)
<i>Flueggea neowawraea</i> (mēhamehame)	<i>Neraudia angulata</i> (ma`aloha, ma`oloha, `oloha)	

Targeted animal species include seven arboreal snails (*Achatinella* sp.; Hawaiian pūpū kaneoe, pūpū kuahiwi, or kāhuli), the O`ahu `elepaio (*Chasiempis sandwichensis* ssp. *ibidis*), and two fruit flies (*Drosophila montgomeryi* and *D. substenoptera*).

A targeted species will be considered stabilized when it reaches a minimum number of individuals at a minimum number of populations defined for each listed taxon.

In the twelve years since the project's inception the Army has planted approximately 10,000 plants with a 65% success rate. 29 of the 51 target plant species are grown in the Army's nursery; the remainder are managed in the wild.

Work is carried out both by O`ahu Army Natural Resource Program (OANRP) staff and by community volunteers. The Program currently has 50 full time staff, and will add approximately 20 more full-time staff if this permit is approved. The Army has budgeted \$4.0 million per annum for the Mākua Plan, and \$2.5 million per annum for the O`ahu Plan. The funds have been budgeted for thirty years (Mākua is currently in Year 7, and O`ahu in Year 3), although the program is intended to last until each species reaches stability.

OANRP publishes yearly reports, program bulletins, research articles, and other documents on the website for the Hawaii-Pacific Islands Cooperative Ecosystems Studies Unit at manoa.hawaii.edu/hpicesu/dpw.htm.

The following Exhibits have been included to assist in the Board's review of the proposal:

- Exhibit 1 – Tax Map Key Parcels and Conservation District Lands
- Exhibit 2 – Moku and Ahupua`a
- Exhibit 3 – Project Areas (four pages)
- Exhibit 4 – September 2010 Proposed Field Schedule (for active management units)
- Exhibit 5 – Implementation Plan Activities (Natural Resource Program presentation)

IMPLEMENTATION PLAN ACTIVITIES

Specific activities and protocols include:

Pedestrian and Aerial Surveys

Pedestrian surveys would be conducted by small teams, including Natural Resources staff and/or volunteers. Participants would either hike in to the survey location or, in the case of remote areas, be transported via helicopter to an established landing zone (see below for description of landing zones). Survey participants would walk predetermined transects or routes, and would be briefed beforehand about minimizing impacts to native species by trampling or breakage. Ropes may be used to allow staff access to areas of steep terrain to complete surveys. Natural Resource staff would complete rappel training prior to being allowed to use ropes. All items brought to the MU would be packed out at the end of the work day.

In order to reduce weed spread by Natural Resource staff personnel during pedestrian surveys, the Oahu Army Natural Resource Program (OANRP) has instituted several sanitation policies, described below, which are carried out by Natural Resources staff and volunteers.

- **Vehicles.** All vehicles are washed at the end of the week. If a vehicle goes to a site known to have particularly invasive weeds, it is washed at the end of the day.
- **Footwear.** Footwear is washed at the end of each work day. Each Natural Resource staff has two sets of tabis, one dedicated for Wai'anae and one for Ko'olau work.
- **Personal gear.** Natural Resource staff maintain a regular schedule for washing backpacks and other personal gear vectors to prevent spreading weeds.

For especially invasive species, Natural Resource staff perform aerial (helicopter) surveys to identify the extent of infestations that cannot be mapped from the ground. Helicopter surveys would generally occur once every one to three years at each MU. Basic helicopter safety training would be completed by Natural Resource staff prior to conducting helicopter operations.

Field monitoring activities would incorporate the same management measures as pedestrian surveys. Care would be taken when searching for ground snail shells to limit disturbance to native plants.

Specimen Collection

The goal of collection from the wild is to ensure that material is available for future reintroductions or augmentation efforts. Protocols for plant propagule collection were based on the guidelines of the Center for Plant Conservation (CPC) and the Hawai'i Rare Plant Restoration Group (HRPRG).

- Given the small number of populations and the small size of the populations of the endangered plants in the OIP and MIP, it was recommended that collections be made from all populations, and from up to 50 individuals per population.
- In order to allow for natural regeneration in the field, it was recommended that only 20 percent of the available seed should be collected from each plant, unless fewer than 10 plants remain in the population. If that is the case, the amount of seed collected is up to the discretion of the permitted collector.
- Collections of plant propagules would be conducted by Army Natural Resources Staff. Collection of threatened and endangered plant material has occurred with the permission of the State of Hawaii, and is in the process of being formally permitted by the State of Hawaii in a Threatened and Endangered Plant Collection permit.
- In addition to specimen collection for future reintroduction and augmentation efforts, specimens of native and alien plants and animals are also collected if further identification is needed or for submission to the Bishop Museum herbarium.

Reintroductions and Augmentations

Reintroduction and augmentation involves taking plants grown offsite (typically in the greenhouse) and planting them back into the wild. Reintroduction involves establishing a number of individuals into a geographic that is currently not known to contain the species. Augmentation is adding individuals that have been grown off site (in a greenhouse) into a site currently occupied by the species. Great care would be taken to preserve the genetic integrity of the natural populations whenever augmentation is conducted. A strict sanitation protocol would be followed by the greenhouse staff to ensure that non-native weeds or other pests are not introduced into pristine areas. The Army would follow the HRPRG's reintroduction guidelines for plants.

Phytosanitation

Threats that are monitored and controlled in the nursery setting include arthropods, alien plant species, nematodes, mollusks, pathogens, and small mammals and other pests. Plants are inspected by OANRP horticultural staff prior to outplanting. A plant must remain in quarantine for a minimum of two weeks; three if the plants show susceptibility to disease. The Army is responsible for transporting plants from the nursery to the outplanting site or quarantine facility in vehicles for which a standard vehicle sanitation protocol has been conducted. If a plant fails a nursery inspection, the plant is removed from the growing area and immediately treated with the appropriate control method to prevent further infestation. If the plant is infected with a virus, it is disposed completely.

Aerial Rodenticide Application

Aerial application of rodenticide has been investigated in Hawai'i to eradicate rats from remote areas where hand distribution of the pelletized rat bait is impossible. The Army is considering future aerial application of rodenticide on Federal land. This discussion is included in this CDUA in the event that future aerial application of rodenticide is considered for Conservation District lands. This management activity is a proposed future

implementation, and supplemental analysis of this action would need to be conducted prior to implementation.

Manual Toxicant and Insecticide Application

Where small mammals, including mice, rats, or mongoose, have been identified as a threat, small mammal control, in the form of trapping and the use of toxicants, would be implemented within the MU. The toxicant currently used for rat control is diphacinone, an anticoagulant described above.

Small mammal control would be focused in the vicinity of PUs and proposed reintroductions and augmentations of target species shown to be sensitive to small mammal predation (e.g. plants eaten by rats). Natural Resource Staff use Ramik, a brand of rat bait containing diphacinone that is not formulated with seeds, but rather with cracked corn, milled grain, and wax. None of these components are a potential source of weeds. Bait boxes are currently approved for use in residential and conservation applications, as the toxicant is kept out of contact with rain, soil, or non-target organisms.

Specific management tools are currently not available for insect pests such as two-spotted leafhopper (*Sophonia rufofascia*), black twig borer (*Xylosandrus compactus*), and Chinese rose beetle (*Adoretus sinicus*). Under certain conditions, it may be necessary to apply systemic insecticide to individual plants, which might control alien pest plants. Additionally, slugs prey on seedlings and young plants of many endangered Hawaiian species, and there is currently no toxicant approved for use in natural areas.

Weed Control

Control of weeds is conducted using manual, chemical, and biological control. The method of control depends on the growth form of the target species (grass versus shrub versus tree) and the type of weeding project (gradual restoration, active restoration, firebreak, trails or fencelines). Gradual restoration is the approach most often taken since it is efficient in time and effort, and is most useful in areas with at least 80 percent native cover.

In more mixed forests, no more than 20 percent of the canopy is removed or opened during a treatment. Removing canopy trees at a higher rate can change the light regime of the forest to a point where invasive understory species are favored. Understory weed control is generally conducted to eliminate target weeds in a single treatment.

Active restoration, involving removal of more than 20 percent of the canopy, is not used as often since it is much more labor intensive and has the potential to change the site microclimate drastically.

Common native species are often outplanted into active restoration sites.

The following are definitions of the most common control techniques:

- **Girdle** - wound cut into the cambium of a tree trunk or shrub encircling its base with a chainsaw or treesaw; herbicide is usually but not always applied to the cut.
- **Cut-stump (Flush Cut)** - tree or shrub trunk severed near the base; herbicide is usually then applied to the stump.
- **Frill-cut** - wound cut with a hatchet or machete into the cambium of a tree trunk or shrub encircling the base, leaving the removed bark attached at the base to act as a trough for herbicide if applied.
- **Basal bark/Thin line** - herbicide is squirted in a ring around the base of a trunk
- **Foliar spray** - herbicide sprayed on the leaves of a plant.
- **Clip and drip** - small weeds cut with pruners; herbicide is applied to the cut surface.
- **Weedwhacking** - for grassy species; grass cut low to ground, herbicide is applied to new growth.
- **EZJECT** - .22 caliber shells filled with water-soluble systemic herbicide (either Garlon or Round-up) are injected directly into stems or rhizomes; shells pushed into plants using EZJECT injection equipment, hammer, or hand pressure.

Invasive Snail and Slug Control Using Dogs

Euglandina rosea, an invasive snail, is one of the demonstrated predators on extant populations of Hawaiian tree snails, and has been the cause of the local extinction of many populations of *Achatinella*. Between November 2008 and March 2009, Working Dogs for Conservation (WDC) trained three conservation detection dogs to the scent of *Euglandina rosea*. This project was a trial to gauge the feasibility of using detection dogs to assist field workers in the detection of *Euglandina rosea*. The proposed use of this management technique could involve regular searches either hiking or flying the dogs into the MUs. Dogs would be kept with handlers at all times when in the field, and work days would be limited to a maximum number of work hours the dogs would be allowed.

Invasive Reptile and Bird Control

Trapping and hand collection of invasive reptiles (specifically Jackson's chameleons, *Chamaeleo jacksonii*) is being considered as a future management activity. In addition, trapping and shooting of invasive birds such as the Kalij pheasant (*Lophura leucomelanos*) may occur in some MUs as needed. These activities would be conducted similar to existing pedestrian surveys, and are not expected to include use of chemical control. Target reptiles would be removed from areas where *Achatinella* snail populations are known.

Construction of Ungulate Exclusion Fence and Ungulate Control

The fences are designed primarily to prevent further invasion of ungulates such as feral pigs, goats, and cattle. In most cases, the perimeter fences for the MUs would be installed along the MU boundaries. Procedures described in Section 5.6.1 of the OIP PEA to protect cultural resources, and compliance with NHPA Section 106, would eliminate the potential for negative impacts to cultural sites. Fences are expected to last approximately 30 years before replacement may be needed. No additional disturbance would occur from replacement as the new fence would be constructed in the same location as the previous fence.

Ungulate removal methods are drawn from best available control techniques from natural resource managers at the U.S. Army Directorate of Public Works (DPW) Environmental Division, the National Park Service, USFWS National Refuges, State of Hawai'i DLNR, and TNC Hawai'i, and are consistent with Natural Area Reserve System (NARS) ungulate control policies.

Other Construction Activities

Additional construction activities which may occur at the MUs include construction of snail exclosures, cabins, water catchments, weather stations, and radio antennae.

Snail exclosures. Several designs for predator exclusion fences have been developed. The barriers typically consist of rigid rat-proof walls around an area of native snail habitat with various designs to prevent invasive snails from breaching the wall. In one design, a 25-cm shed-like roof extends outward from the top of the fence to cover one or two barriers against the predatory snail *E. rosea*: a 10-cm trough filled with coarse salt (calcium chloride or sodium chloride) and a two-wire electrical barrier. The wires, energized by a battery charged by a solar panel, are attached against the wall, one 8 mm above the other. A snail that contacts both wires would receive an electric shock, which causes it to drop backward off the wall. Other designs involve: an inverted 15-degree slab of rigid plastic or metal at the top of the wall which prevents the snails from being able to climb over; a heating coil around the wall heated to approximately 150 degrees F; and strips of copper screening hung upside down from an overhang along the wall placed at a distance small enough that the snails cannot gain enough suction to pass over. Vegetation is kept cleared from the predator exclusion barrier.

Cabins. Small (generally 20 ft by 20 ft) elevated structures may be constructed at Helemano, Kōloa, and Waimano for use by Natural Resource staff on extended overnight work trips. Construction would involve clearing an area slightly larger than the proposed cabin and constructing the roofed wooden platform on posts augered into the ground. Materials would be flown in by helicopter, using the same procedures as for transporting fencing materials. Camping platforms or shipping containers may be used instead of cabins.

Water catchments. Rainfall catchment structures would be placed on ridges with irrigation hoses to transport water to areas where outplanting of native vegetation would occur. For each surface catchment area and catchment tank, a fiberglass or tin catchment sized depending on site-specific needs would be constructed with a lumber frame and a 500 to 1,500 gallon ultraviolet (UV) resistant plastic tank would be set below the catchment surface and secured to the ground. Natural Resource staff would construct the catchment surface and irrigation system. For remote sites, material would be flown in by helicopter.

Weather stations. Weather stations may be constructed at any of the MUs. Weather station sites would be located off trails and placed in areas where native plants would not need to be removed for the installation. In remote areas, materials would be flown in by helicopter. The station footprint would include up to nine "T" posts (approximately two inches in diameter) pounded into the ground with guy wires which would support the tripod holding the instruments. The guy wires would hold the tripod upright and rigid enough for a person to

climb. Weather stations would be checked (and, if needed, repaired) on a pre-determined schedule, likely every three to six months.

Radio antennae. Small antennae for boosting radio or other transmission signals in terrain consisting of steep ridges and valleys may be constructed to assist Natural Resource staff with communication in remote field locations. The antennae would have small external batteries, and would be approximately ten feet high.

Management Actions for Newly Listed Species

With the recent listing of several native *Drosophila* species the Army has initiated surveys to detect the presence of listed endangered fly species within the Army training areas. So far, the Army has found *Drosophila aglaia* and *D. substenoptera*. The Army is in the process of consultation with the USFWS and the OIT, and will create stabilization plans if required.

In the event that additional types of management actions not already evaluated for other species in this document are determined to be necessary for *Drosophila* management, the need for additional NEPA documentation will be evaluated.

SUMMARY OF COMMENTS:

The Office of Conservation and Coastal Lands referred the application to the following agencies for review and comment: Office of Hawaiian Affairs; Trust For Public Lands; DLNR – Land Division, Historic Preservation, DOFAW, Engineering, State Parks; United States Fish and Wildlife Service; Hawaii State Library; City and County of Honolulu Planning Department; Kualoa Ranch; Bishop Estat; Dole Food Co.; and Property Reserve Inc.

A notice of the application was placed in the August 25, 2010 edition of the Office of Environmental Quality Control's Environmental Notice. In addition, copies were available for review at the Hawai'i State Library.

DLNR Division of Forestry and Wildlife (DOFAW)

DOFAW staff assisted OCCL in identifying which parcels were part of the Forest Reserve and fell under Forestry management, and which would be covered in this CDUA.

DOFAW notes that the Threatened and Endangered Plant Collection Permit has been completed and signed.

DOFAW notes that there have been phytosanitation issues in the past, and that the plan reflects an improvement in procedures and protocols.

DOFAW would like to see landowners notified when aerial sprayings are rescheduled.

DOFAW would like to see the removal of equipment and work material addressed.

Applicant's Response

Natural Resource Program staff will notify landowners when aerial survey operations are planned, and the Army will comply with notification procedures outlined in signed license agreements with landowners where applicable.

The OANRP will address the issue of field equipment collection with staff.

The applicant looks forward to working in partnership with DLNR on these conservation actions.

DLNR – Land Division

No comments

DLNR – Commission on Water Resource Management (CWRM)

Should any alteration of stream channels be proposed as part of fence installation or other activities, a Stream Channel Alteration Permit will be needed.

Applicant's Response

The Army will pursue such permits if stream alteration is needed.

DLNR State Historic Preservation Division (HPD)

HPD has studied the Section 106 reviews of the Kapuna, Poamoho, Kahanaiki, Mākaha II, Kamaile, Opae'ula, East and West Makaleha, and Pu'u Hāpapa Management Units and has concluded that these actions would not adversely affect historic properties. This conclusion was based in part on the surveys by the Army's cultural resource management staff.

HPD notes that additional management units and platforms for new camping areas should be surveyed by qualified archaeologists in order to determine that no additional historic properties be affected, and would like this to be included as a condition of the permit.

DLNR – State Parks

State Parks commends the Army's efforts, and requests that any work that is done in State Parks be coordinated with the O'ahu District Superintendent.

County Department of Planning and Permitting

The proposal will have no effect on the County General Plan.

ANALYSIS:

Following review and acceptance for processing, the Applicant's Agent was notified, by letter dated September 2, 2010 that:

1. The resource restoration projects were an identified land use within the Conservation District, pursuant to Hawai'i Administrative Rules (HAR) §13-5-22 *Identified land uses in the protective subzone, 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. This use requires a Board Permit.

2. The proposal required a public hearing pursuant to HAR §13-5-40 HEARINGS, (a) *Public hearings shall be held: (3) On applications requiring a board permit in the protective subzone.*

A Public Hearing was held on Wednesday, September 15, 2010, at 6 pm. There were no attendees.

3. Pursuant to HAR §13-5-31 *Permit applications*, the permit required that an environmental assessment (EA) be carried out.

A Finding of No Significant Impact (FONSI) and Programmatic EA for the *Mākuā Implementation Plan* were published in the *Environmental Notice* on June 8, 2006. A Finding of No Significant Impact (FONSI) and Programmatic EA for the *O`ahu Implementation Plan* were published in the *Environmental Notice* on April 8, 2010. The FONSI were issued by the Commander of the U.S. Army Garrison in Hawai`i.

§13-5-30 CRITERIA:

The following discussion evaluates the merits of the proposed land use by applying the criteria established in HAR §13-5-30.

- 1) *The proposed use is consistent with the purpose of the Conservation District.*

The objective of the Conservation District is to conserve, protect and preserve the important natural resources of the State through appropriate management and use to promote their long-term sustainability and the public health, safety and welfare.

The purpose of the Mākuā and O`ahu Implementation Plans are to nurture select endangered and threatened species to stability, and are thus directly in line with Conservation District goals. The plans were developed as a form of off-site mitigation to address damage done to natural resources from military activities. When fully implemented the plans will bring a significant amount of federal resources to bear on habitat restoration.

- 2) *The proposed land use is consistent with the objectives of the Subzone of the land on which the use will occur.*

The proposed management units are located in the General, Resource, Limited, Protective, and Undesignated subzones.

Staff notes that the proposal is an identified land use in all subzones. The goal of the most restrictive subzone, Protective, is *to protect valuable resources.* The

Implementation Plans share the same goal, and contain management provisions to ensure that activities are carried out in an environmentally sound manner.

- 3) *The proposed land use complies with the provisions and guidelines contained in Chapter 205A, HRS entitled "Coastal Zone Management", where applicable.*

Pursuant to HRS §205A (b) Objectives (4) **Coastal ecosystems**, one of the goals of CZM is to *Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.* OCCL notes that all of Hawai'i is considered to be part of the coastal zone, and that this project represents an attempt to protect some of the most fragile of the native Hawaiian ecosystems.

- 4) *The proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area, community or region.*

Both Implementation Plans contain protocols that are designed to minimize any potential adverse impacts on the areas' natural resources.

The activities will cause a limited disturbance of soils through the removal of invasive species and fence construction; however, no significant runoff or erosion is anticipated. Water quality should increase in the long term by reducing erosion and limiting the input of disease-causing organisms into the water supply caused by feral animals.

There will be noise impacts from the helicopters used for surveys and for transporting workers to the sites; however, these are short term in duration.

Strict procedures are in place for the use of any herbicides.

The general public does not have access to the areas, and will not be impacted. The proposed fence units will cover some available hunting areas; however, the areas are used infrequently due to the difficult access. The best and most accessible hunting areas on Nature Conservancy lands will be maintained.

If the proposed fence lines do cross an existing hiking trail, the Army will install fence cross-over gates.

Collection of common native plants for cultural purposes will not be impacted by the proposal. Access for traditional practitioners will be maintained in accordance with the law.

- 5) *The proposed land use, including buildings, structures and facilities, shall be compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific parcel or parcels.*

The infrastructure that is being proposed is limited to camping platforms, rat traps, fences, and snail exclosures. The design of each is similar to those used in other restoration and protection efforts in the State.

- 6) *The existing physical and environmental aspects of the land, such as natural beauty and open space characteristics, will be preserved or improved upon, whichever is applicable.*

Staff is of the opinion that the proposal will not have an impact on open space. The management units are in remote areas that are not accessible to the general public; the 'natural beauty' of the land will be maintained and even improved through habitat restoration.

- 7) *Subdivision of land will not be utilized to increase the intensity of land uses in the Conservation District.*

The proposed project does not involve subdivision of Conservation District land.

- 8) *The proposed land use will not be materially detrimental to the public health, safety and welfare.*

Staff is of the opinion that the proposed addition will not be materially detrimental to the public health, safety and welfare.

DISCUSSION:

The proposed habitat restoration activities in the U.S. Army's Mākua Implementation Plan and O'ahu Implementation Plan are an identified use within the Conservation District pursuant to Hawai'i Administrative Rules (HAR) §13-5-22 *Identified land uses in the protective subzone, P-7 SANCTUARIES.*

OCCL received no objections and heard no concerns regarding the project from the public or any agency. Other DLNR Divisions were supportive of the goals of the program, and noted that protocols had been established to address concerns from previous military restoration activities.

The proposals will lead to a significant federal economic and human-resource investment in the protection and restoration of endangered and threatened species on O'ahu. Other DLNR Divisions were supportive of the goals of the program, and noted that protocols had been established to address concerns from previous military restoration activities.

OANRP makes their yearly reports, bulletins, and research articles freely available to the public at through The Hawaii-Pacific Islands Cooperative Ecosystems Studies Unit (HPI-CESU).

If the Board approves this Conservation District Use Permit, and based in part upon recommendations from other DLNR Divisions, OCCL will recommend that the Board attach the following additional conditions:

- That the protocols discussed in the Programmatic Environmental Assessments, including but not limited to those involving pedestrian and aerial surveys, resource monitoring, specimen collection, reintroductions and augmentations, phytosanitation, herbicide and rodenticide application, snail and slug control, invasive reptile and bird control, and fence construction, are considered to be conditions of the permit;
- That Natural Resource Program staff will notify landowners when aerial survey operations are planned, and the Army will comply with notification procedures outlined in signed license agreements with landowners where applicable;
- That any additional management units, fence lines, and platforms for new camping areas should be surveyed by qualified archaeologists in order to determine that no additional historic properties be affected.
- That any work being done in State Parks be coordinated with the O`ahu District Superintendent.

In addition, as these plans are intended to be long-range OCCL will recommend that the Board *not* impose the standard condition that all work must be completed after four years.

As there will not be one single site plan or set of construction plans that would be relevant for the overall project, OCCL will also recommend that the Board *amend* the standard condition regarding construction plans to read that the applicant shall submit site plans for fence lines, cabins, and camping platforms to OCCL for review and approval.

After careful review of the material provided, OCCL has concluded that the Implementation Plans represent a valuable program for protecting and restoring to viability endangered and threatened species on O`ahu, and that it is consistent with the Conservation Criteria established in HAR §13-5-30.

Staff also has concluded that the Mākua and O`ahu Implementation Plans are consistent and in compliance with the Management Plan Requirements established in HAR §13-5 Exhibit 3.

RECOMMENDATION:

Based on the preceding analysis, Staff recommends that the Board of Land and Natural Resources APPROVE this application for the *Mākua Implementaion Plan* and *O`ahu Implementation Plan* at TMKs (1) 5-1-7:1, 5-2-1:1, 5-3-11:1, 5-3-11:9, 5-4-6:1, 5-5-7:2, 6-3-1:1, 6-9-1:3, 6-9-1:4, 6-9-1:30; 6-9-2:13, 8-1-1:7, 8-1-1:12, 8-4-2:1, 8-4-2:14, 9-2-5:25, 9-6-6:1, and 9-6-11:2, in the ahupua`a of Ka`a`awa, Kahana, Kaluanui, and Lā`ie, (Ko`olauloa); Pa`ala`a, Kawailoa, Ka`ena (Wai`alua); Keawa`ula, Kahanaha Iki, and Mākaha (Wai`anae); & Waiawa and Hālawa (`Ewa), O`ahu, subject to the following conditions:

1. The applicant shall comply with all applicable statutes, ordinances, rules, and regulations of the federal, State and county governments, and the applicable parts of HAR §13-5-42;
2. The applicant shall be liable, to the extent allowed by the Federal Tort Claims Act, for claims for personal injuries or property damage resulting from negligent or wrongful act or omission of any employee of the United States while acting within the scope of his or her employment, arising out of this agreement;
3. The applicant shall comply with all applicable Department of Health administrative rules. Particular attention should be paid to HAR §11-60.1-33, "Fugitive Dust" and to Chapter 11-46, "Community Noise Control," and Chapter 11-54 National Pollutant Discharge Elimination System;
4. The applicant shall notify the Office of Conservation and Coastal Lands in writing prior to the initiation, and upon completion, of the project;
5. The applicant shall submit site plans for fence lines, cabins, and camping platforms to OCCL for review and approval prior to construction;
6. Where any interference, nuisance, or harm may be caused, or hazard established by the use, the applicant shall be required to take measures to minimize or eliminate the interference, nuisance, harm, or hazard;
7. The applicant will use Best Management Practices for the proposed project;
8. The applicant understands and agrees that this permit does not convey any vested rights or exclusive privilege;
9. In issuing this permit, the Department and Board have relied on the information and data that the applicant has provided in connection with this permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Department may, in addition, institute appropriate legal proceedings;
10. In the event that unrecorded historic remains (i.e., artifacts, or human skeletal remains) are inadvertently uncovered during construction or operations, all work shall cease in the vicinity and the applicant shall immediately contact the State Historic Preservation Division;
11. That the protocols discussed in the Programmatic Environmental Assessments, including but not limited to those involving pedestrian and aerial surveys, resource monitoring, specimen collection, reintroductions and augmentations, phytosanitation, herbicide and rodenticide application, snail and slug control, invasive reptile and bird control, and fence construction, are considered to be conditions of the permit;

12. That Natural Resource Program staff will notify landowners when aerial survey operations are planned, and the Army will comply with notification procedures outlined in signed license agreements with landowners where applicable;
13. Any additional management units, fence lines, and platforms for new camping areas should be surveyed by qualified archaeologists in order to determine that no additional historic properties be affected.
14. Any work being done in State Parks shall be coordinated with the O`ahu District Superintendent;
15. The Yearly Reports shall continue to be made publicly available, and the applicant will notify OCCL when they are posted online;
16. The applicant will contact OCCL for any permitting requirements should they change the scope of the project;
17. That failure to comply with any of these conditions may render this Conservation District Use Permit null and void.

Respectfully submitted,



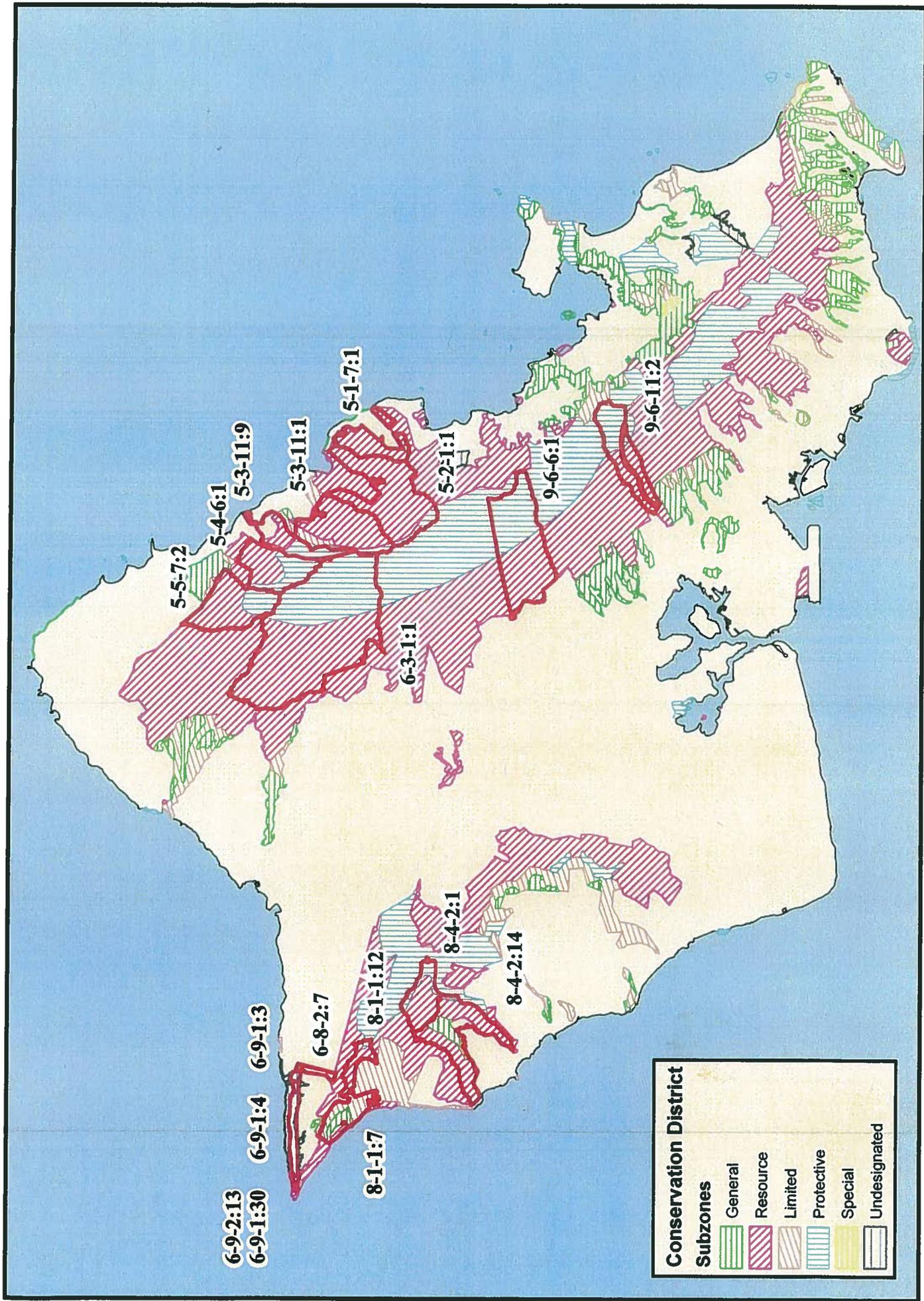
Michael Cain
Staff Planner

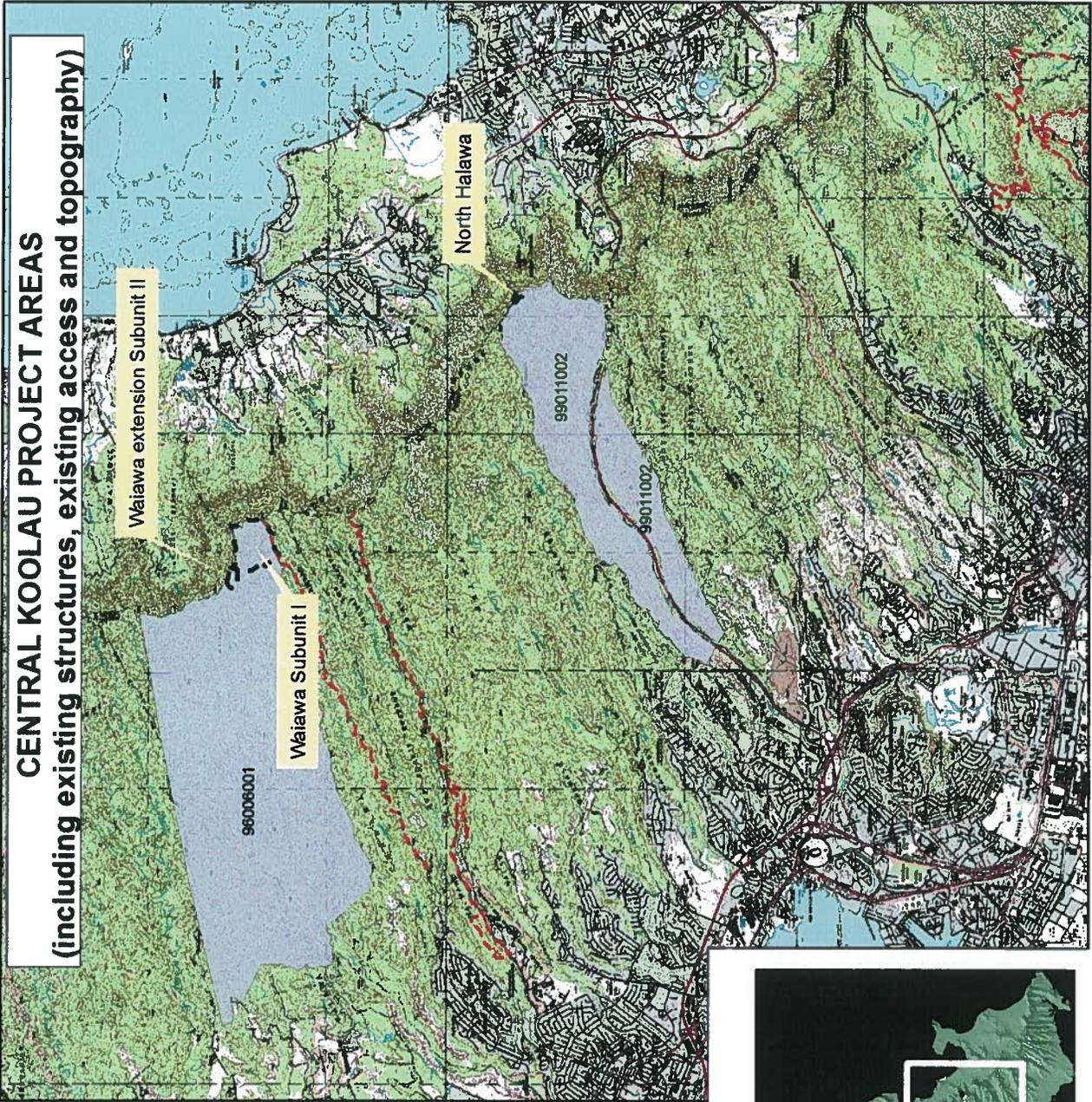
Approved for submittal:



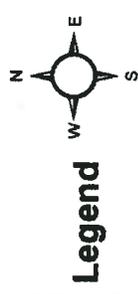
William J. Aila, Interim Chairperson
Board of Land and Natural Resources

Makua Implementation Plan: Tax Map Key Parcels & Conservation District Lands



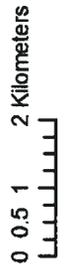


CENTRAL KOOLAU PROJECT AREAS
 (including existing structures, existing access and topography)



Legend
Implementation Plan Management Units
 (not in State Forest Reserves or on Federal land)

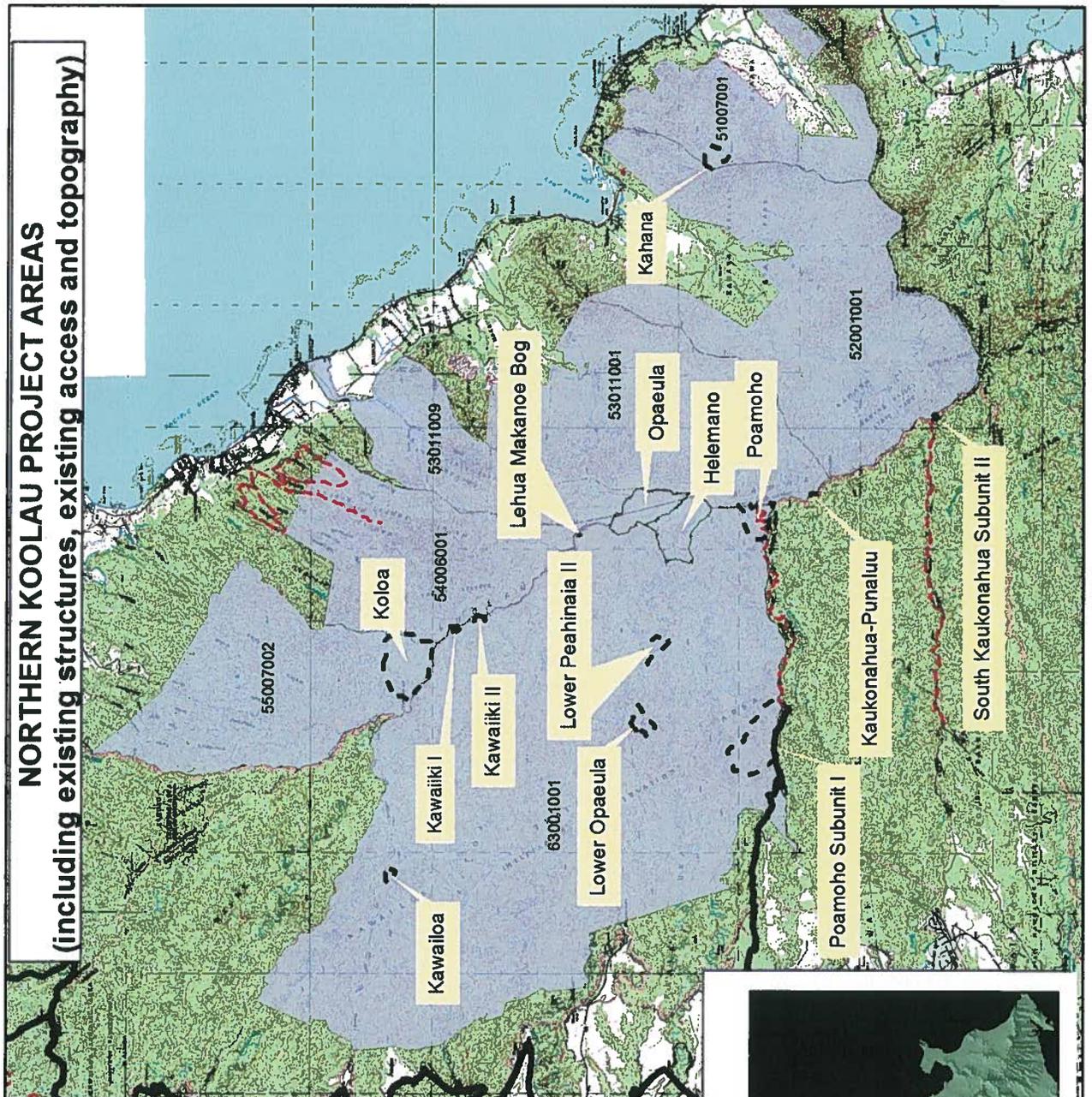
-  Proposed Fence
-  Tax Map Key
-  Conservation District
-  Na Ala Hele trails



Island of Oahu

NORTHERN KOOLAU PROJECT AREAS

(including existing structures, existing access and topography)



Implementation Plan Management Units
(not in State Forest Reserves or on Federal land)

-  Existing Fence
-  Proposed Fence

Tax Map Key

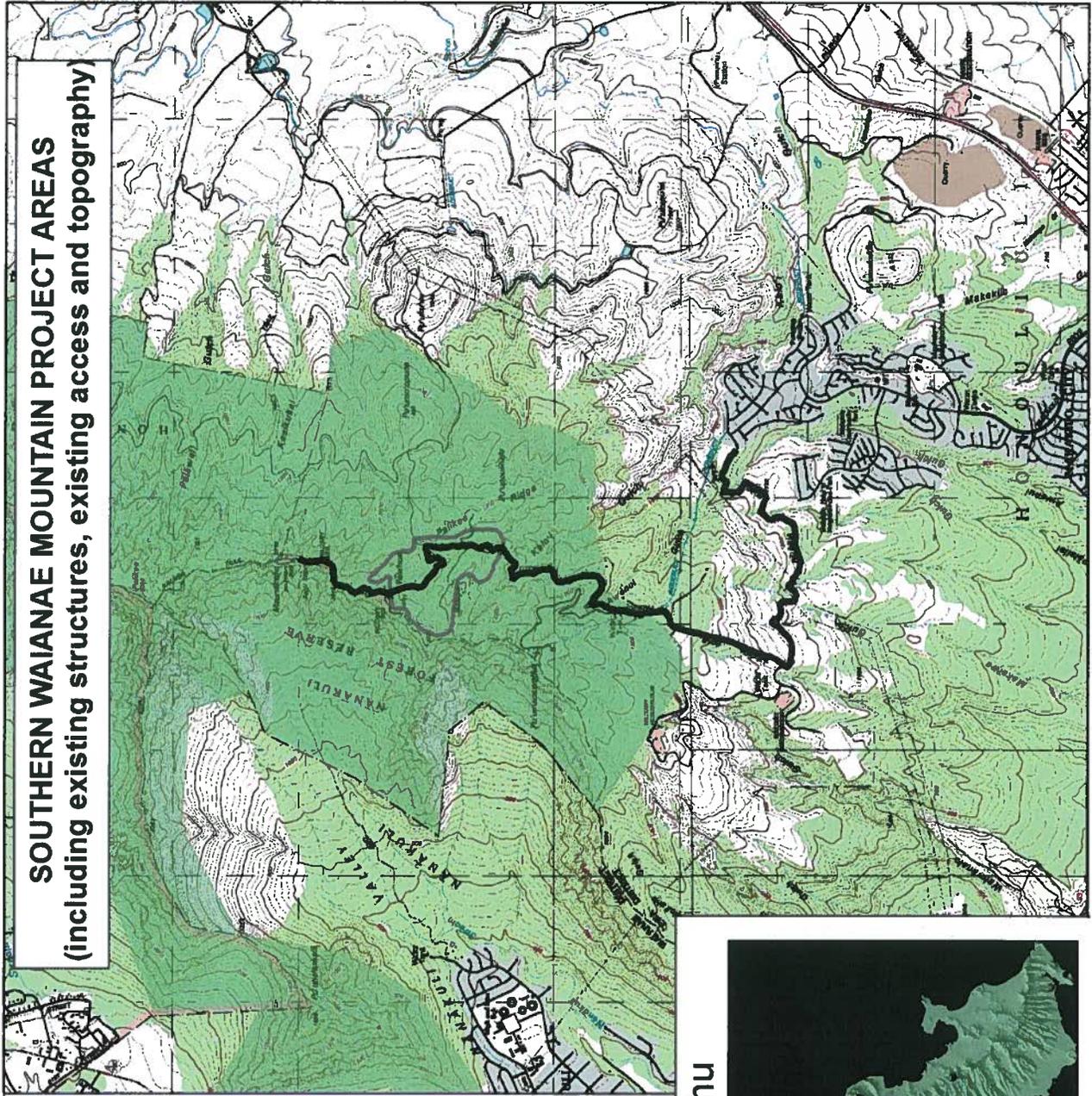
-  Conservation District
-  Na Ala Hele trails
-  Roads



Island of Oahu



SOUTHERN WAIANAE MOUNTAIN PROJECT AREAS
 (including existing structures, existing access and topography)



Legend

Implementation Plan Management Area

(not in State Forest Reserves or on Federal land)

 Oahu Elepaio Management Area

 Conservation District

 Roads

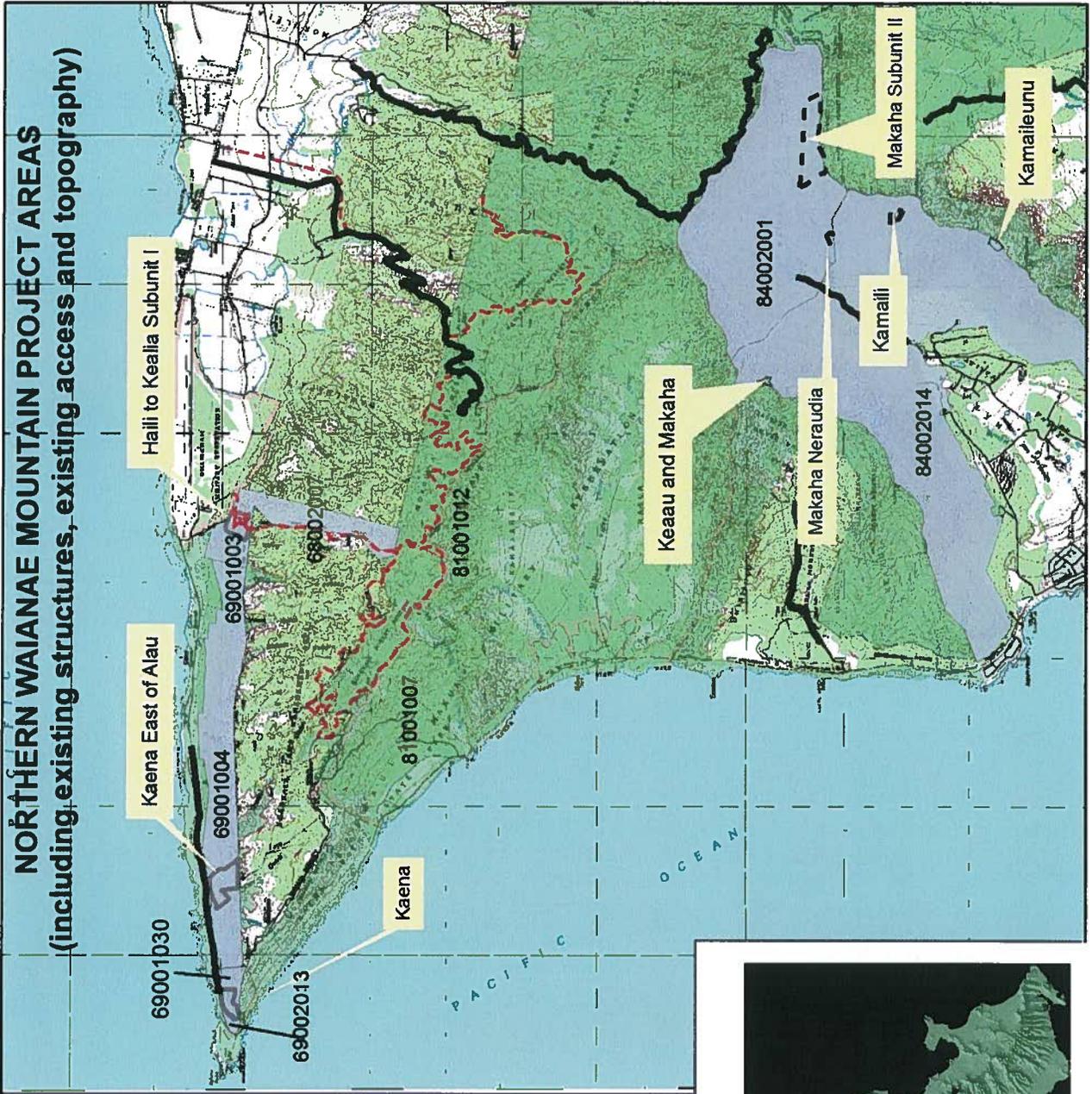
*Tax Map Key not available subdivision in progress. Cabins exist in project area but exact locations are unavailable.



Island of Oahu



NORTHERN WAIANAE MOUNTAIN PROJECT AREAS (including existing structures, existing access and topography)

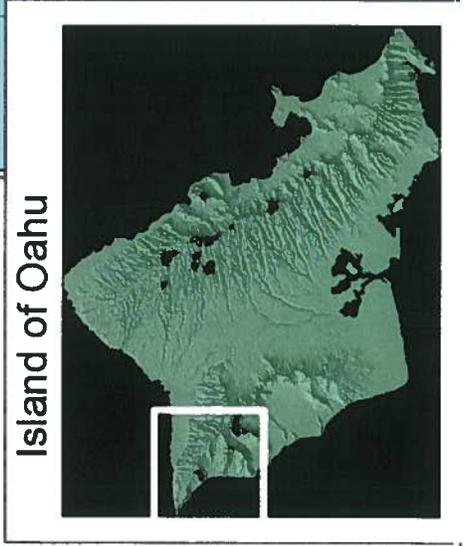


Legend

Implementation Plan Management Units
(not in State Forest Reserves or on Federal land)

- Existing Fence
- Proposed Fence
- No Fence
- Tax Map Key
- Conservation District
- Na Ala Hele trails
- Roads

0 0.450.9 1.8 Kilometers



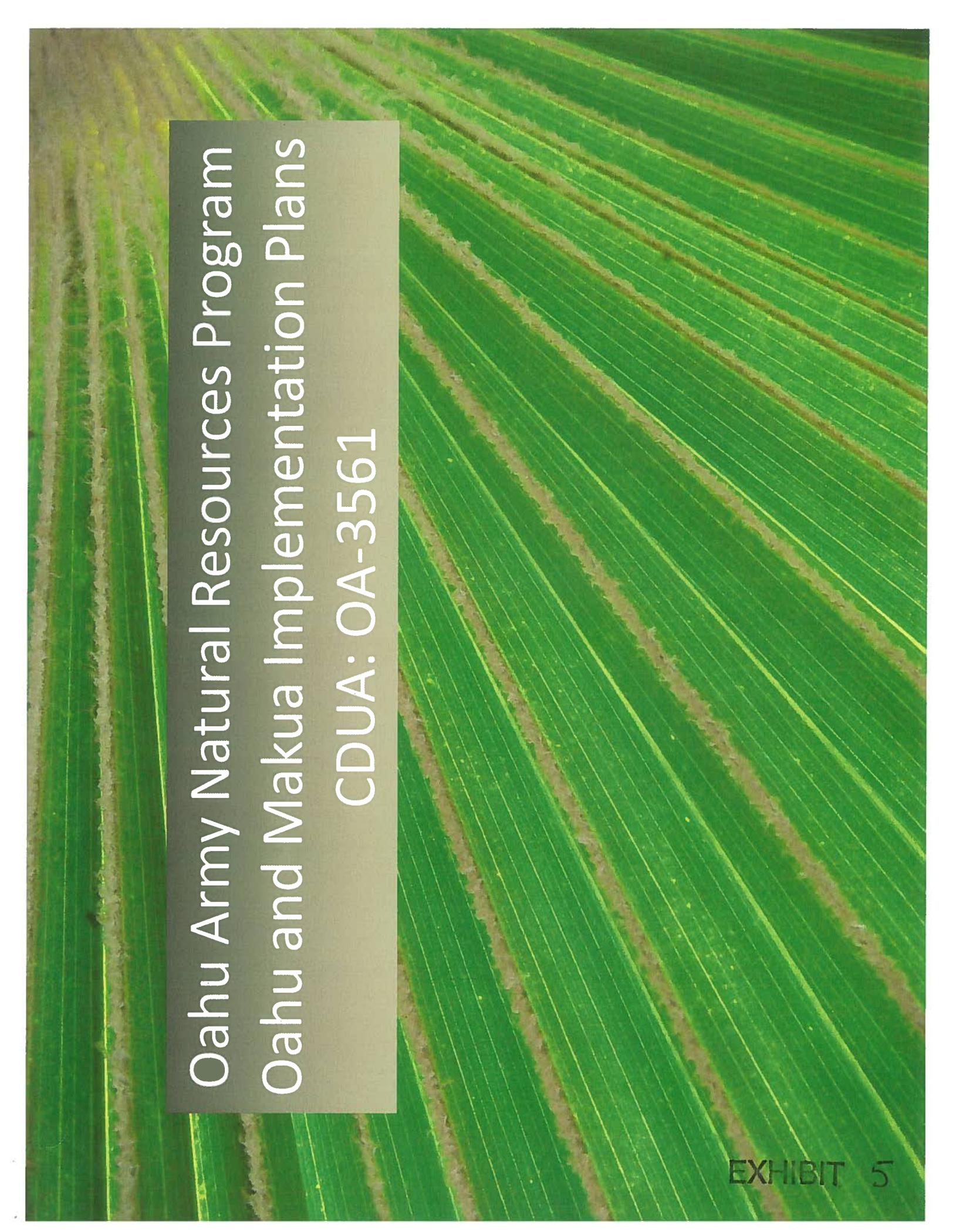
Army Natural Resources September 2010 Proposed Field Schedule

Date	Day	Activity	On U.S. Army					Off Army			Satisfies	
			Makua	Kawailoa	Kahuku	Schofield	Dillingham	State	Private	Other	MIP	OIP
1-Sep	Weds	Manuwai camping trip for fence construction. Ohikilolo camping trip for fence check, rare plant monitoring, rat baiting and weed control.	x					x			x	x
2-Sep	Thurs	Kaluaa for <i>Alectryon macrococcus</i> var. <i>macrococcus</i> monitoring. Manuwai camping trip continued. Ohikilolo camping trip continued. Pahole for <i>Cyanea longiflora</i> monitoring.	x					x			x	x
6-Sep	Mon	Holiday.										
7-Sep	Tues	Makaha for fence check, rare plant monitoring and weed control. Manuwai camping trip for fence construction. Schofield Barracks East Range for weed control.				x		x		x	x	x
8-Sep	Weds	Ekahanui for fence tagging. Kaluaa for vegetation monitoring. Makaha for fence check, rare plant monitoring and weed control. Manuwai camping trip continued. Palikea for tracking tunnel monitoring. Waianae Kai for <i>Abutilon sandwicense</i> , <i>Flueggea neowawraea</i> and <i>Nerudia angulata</i> monitoring.						x		x	x	x
9-Sep	Thurs	Ekahanui for fence tagging. Makaha for fence check, rare plant monitoring and weed control. Manuwai camping trip continued. Pahole for <i>Cyanea longiflora</i> monitoring. Palikea for tracking tunnel monitoring.						x		x	x	x
10-Sep	Fri	Kahanahaiki volunteer service trip for common natives monitoring and seed collection.	x								x	
13-Sep	Mon	Kaluaa for vegetation monitoring. Manuwai camping trip for fence construction. Palikea camping trip for rare plant monitoring, rat baiting and weed control.						x			x	x
14-Sep	Tues	Ekahanui for snail surveys and ungulate control. Kahuku Training Area (KTA) for weed control. Kaluaa for vegetation monitoring. Manuwai camping trip continued. Palikea camping trip continued.			x			x			x	x
15-Sep	Weds	Ekahanui for snail surveys and ungulate control. KTA for weed control. Manuwai camping trip continued.			x			x			x	x
16-Sep	Thurs	Ekahanui for snail surveys and ungulate control. KTA for weed control. Manuwai camping trip continued.			x			x			x	x
17-Sep	Fri	Kahanahaiki Project Stewardship with Mililani High School for weed control.	x								x	
18-Sep	Sat	Kaala volunteer service trip with Halau Na Mamo O Pu'u Anahulu for weed control.				x						x
20-Sep	Mon	Helemano for <i>Cyanea st.-johnii</i> fruit check. Kaluaa for vegetation monitoring. Koloa and Kawaiiki for rat baiting. Manuwai camping trip for fence construction.		x					x	x	x	x

EXHIBIT 4

Army Natural Resources September 2010 Proposed Field Schedule

Date	Day	Activity	On U.S. Army					Off Army			Satisfies	
			Makua	Kawailoa	Kahuku	Schofield	Dillingham	State	Private	Other	MIP	OIP
21-Sep	Tues	Kahanahaiki volunteer service trip with 523rd Engineer Brigade for reveg road. Kaluakauila camping trip for fence check, rat baiting and weed control. Makaleha for rat baiting. Manuwai camping trip continued. Pahole for rare plant monitoring and weed control.	x					x			x	x
22-Sep	Weds	Ekahanui for rat baiting. Kahanahaiki volunteer service trip with 523rd Engineer Brigade for reveg road. Kaluaa for vegetation monitoring. Kaluakauila camping trip continued. Manuwai camping trip continued.	x					x			x	x
23-Sep	Thurs	Kaluakauila camping trip continued. Manuwai camping trip continued.	x					x			x	x
27-Sep	Mon	Hapapa camping trip for rare plant monitoring and weed control. Helemano for <i>Cyanea st.-johnii</i> fruit check. KTA National Public Lands volunteer service trip for weed control. Kaluaa for vegetation monitoring. Makua camping trip for rare plant monitoring and weed control. Manuwai camping trip for fence construction.	x	x		x		x			x	x
28-Sep	Tues	Hapapa camping trip continued. Opaepala for rat baiting. Makua camping trip continued. Manuwai camping trip continued.		x				x			x	x
29-Sep	Weds	Kaluaa for vegetation monitoring. Makua camping trip continued. Manuwai camping trip continued. Schofield Barracks West Range (SBW) for rat baiting.	x			x		x			x	x
30-Sep	Thurs	Kaluaa for vegetation monitoring. Makua camping trip continued. Manuwai camping trip continued.	x					x			x	x



Oahu Army Natural Resources Program
Oahu and Makua Implementation Plans

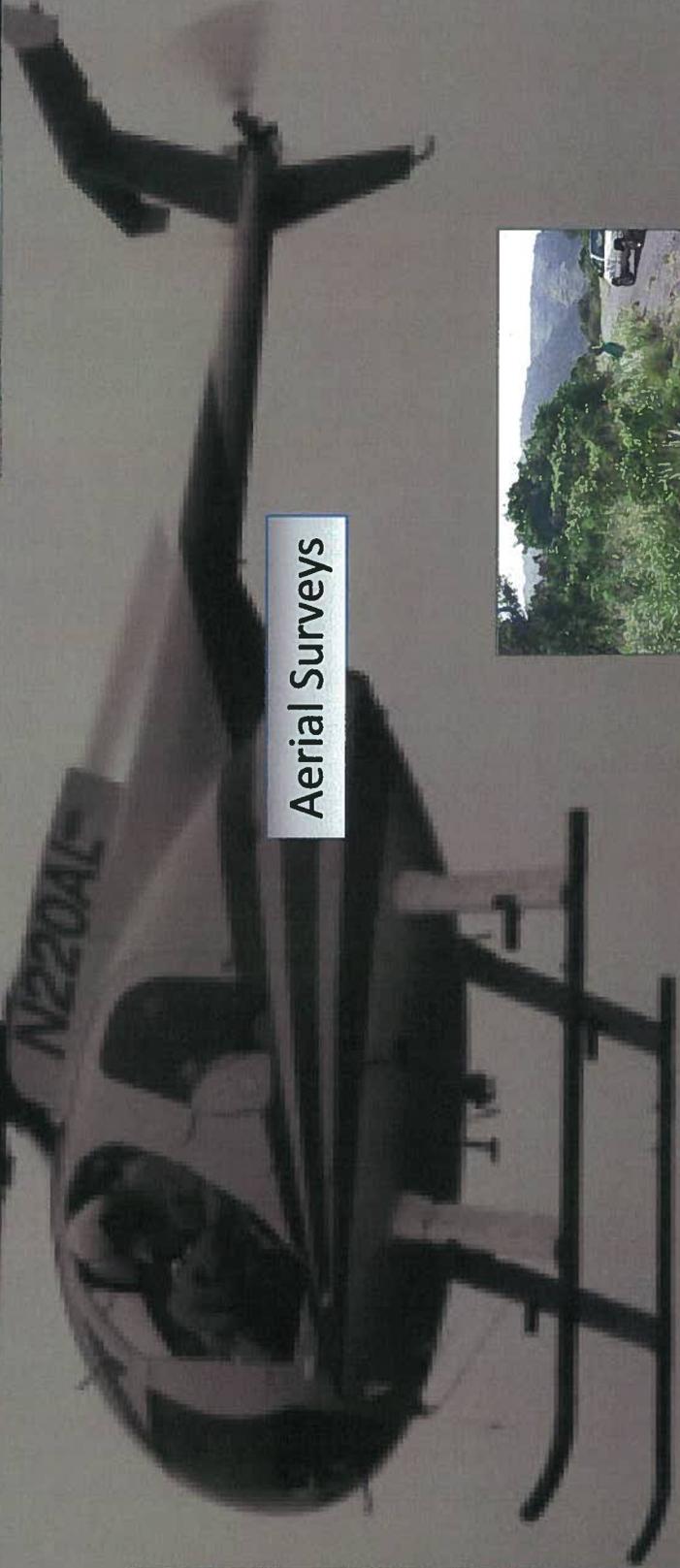
CDUA: OA-3561

Project Background

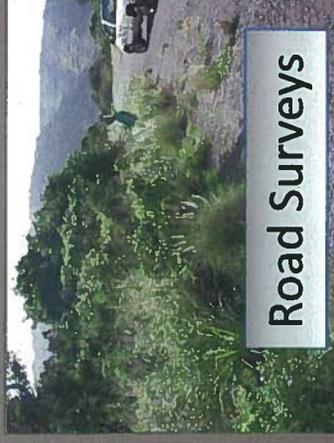


- Endangered Species Act Consultations
- Biological Opinions and Implementation Plans
- Stabilize 50 endangered plants, 7 Kāhuli tree snails, Oahu 'Elepaio

Surveys



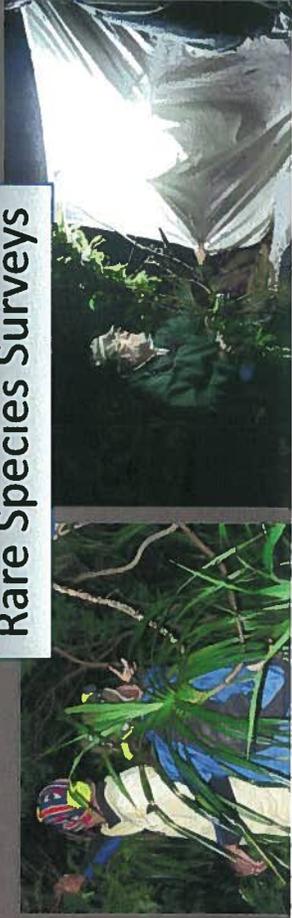
Aerial Surveys



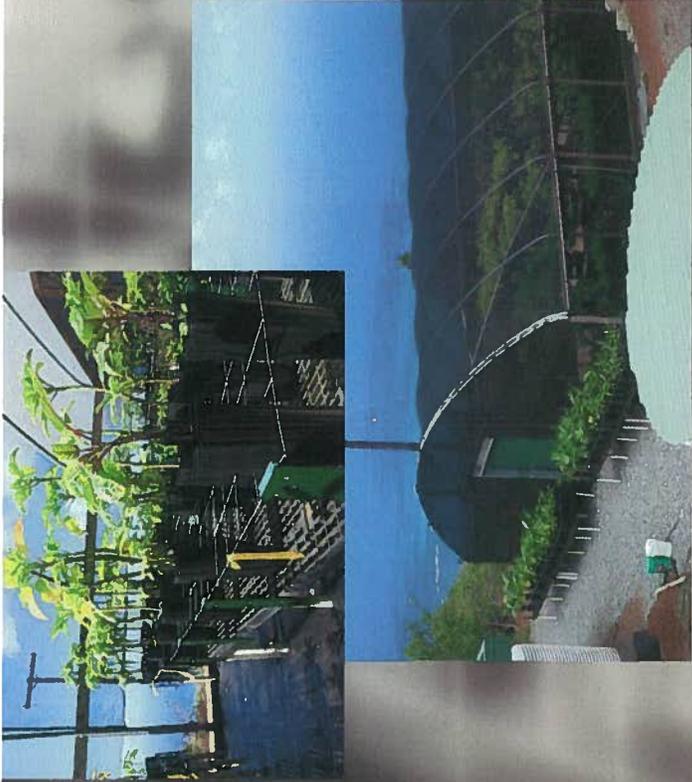
Road Surveys



Rare Species Surveys



Endangered Plants Collection Propagation Reintroduction





Goat Browse



Pig Digging

Weed Spread



Ungulate Management



Fencing



Trapping

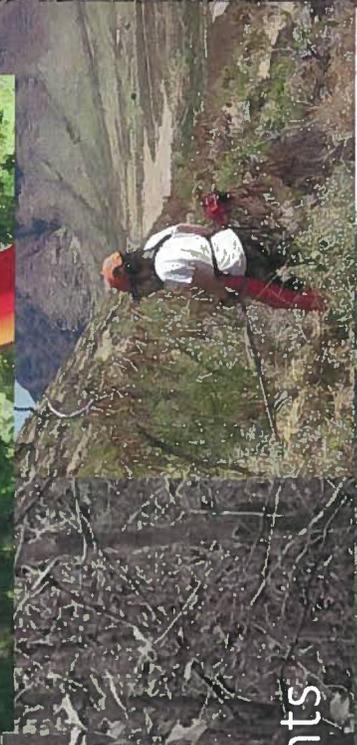


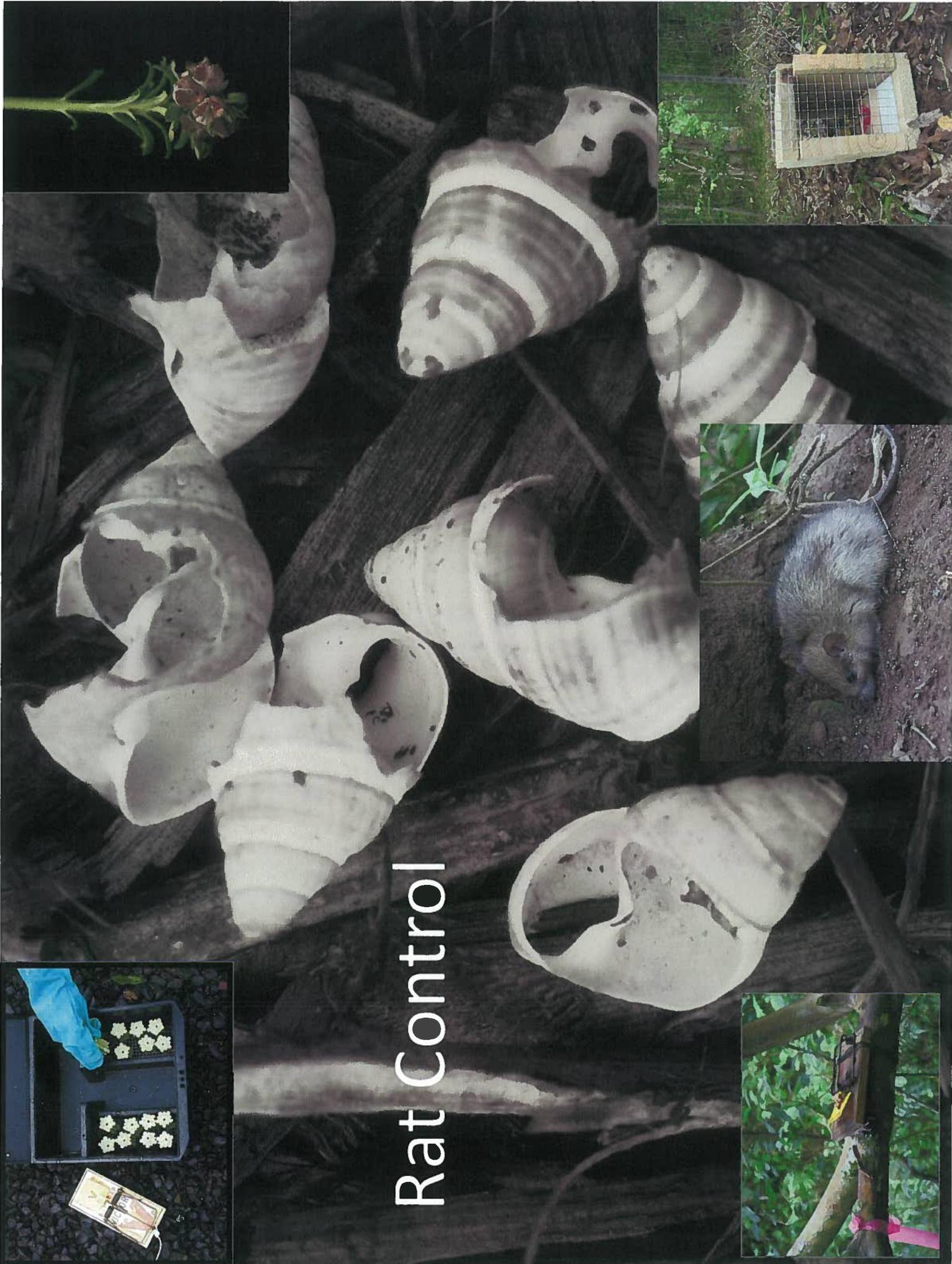
WEED CONTROL

Controlling,
Introduced,
invasive plants



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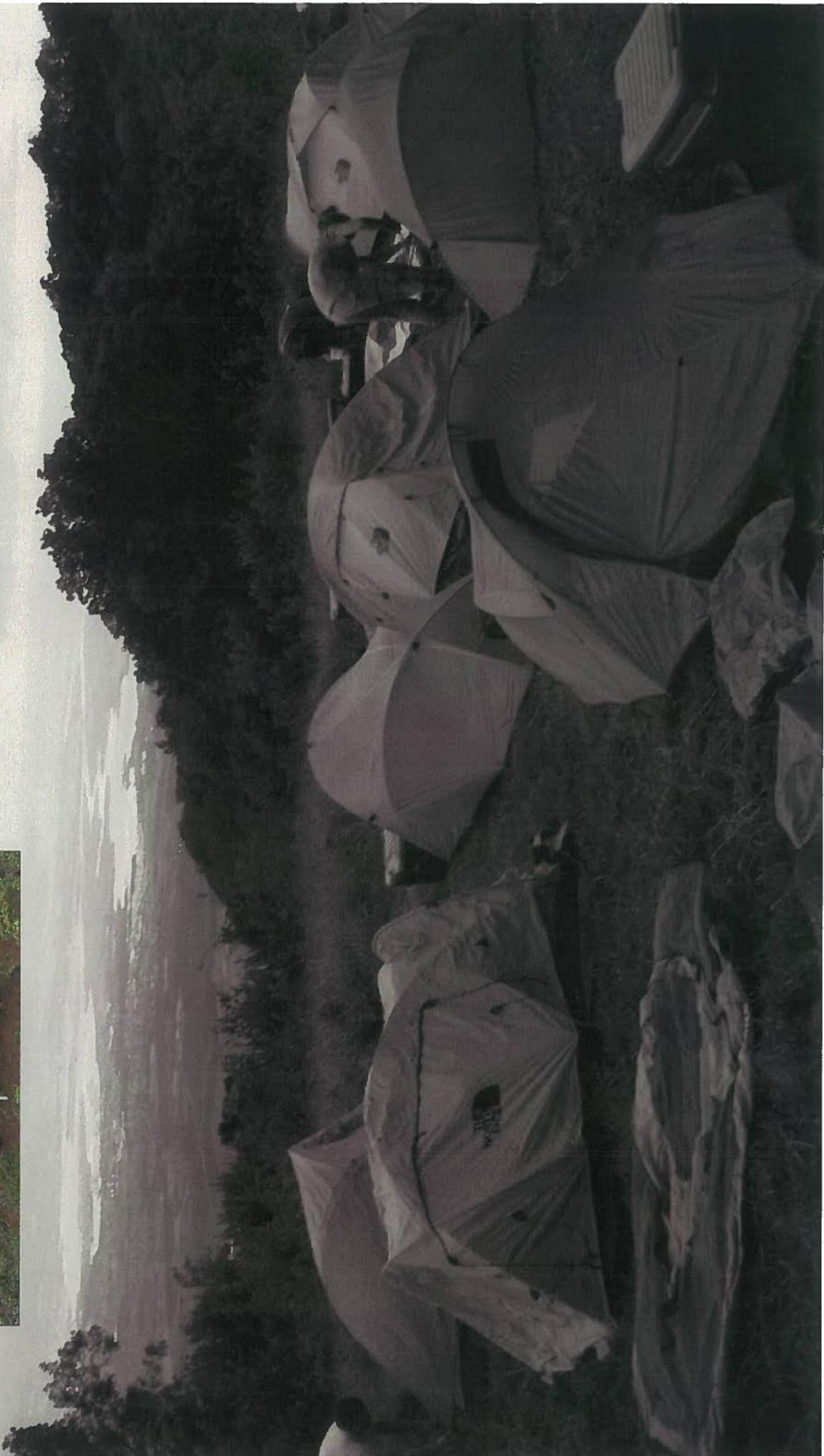
Rat Control



Cannibal Snail Control

Remote Monitoring Stations and Radio Antennae





CAMPING AND CABINS

