

# Hawai'i Island Watershed Partnerships

Kohala Watershed Partnership  
Mauna Kea Watershed Alliance  
Three Mountain Alliance

January 2013 Project Updates

# Hawai'i's Watershed Partnerships



Kauai Watershed Alliance



Waianae Mountains WP

Ko'olau Mountains WP

East Molokai WP



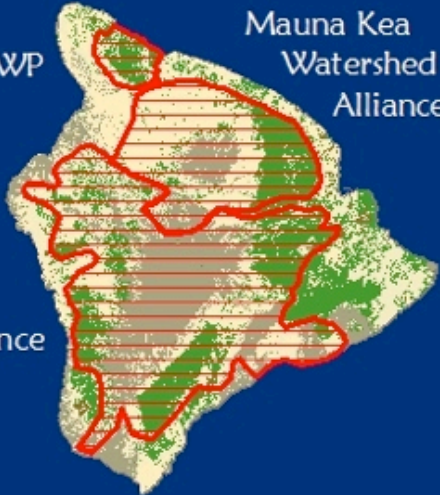
West Maui Mountains WP

East Maui WP

Lanai Forest WP








Leeward Heleakala WP



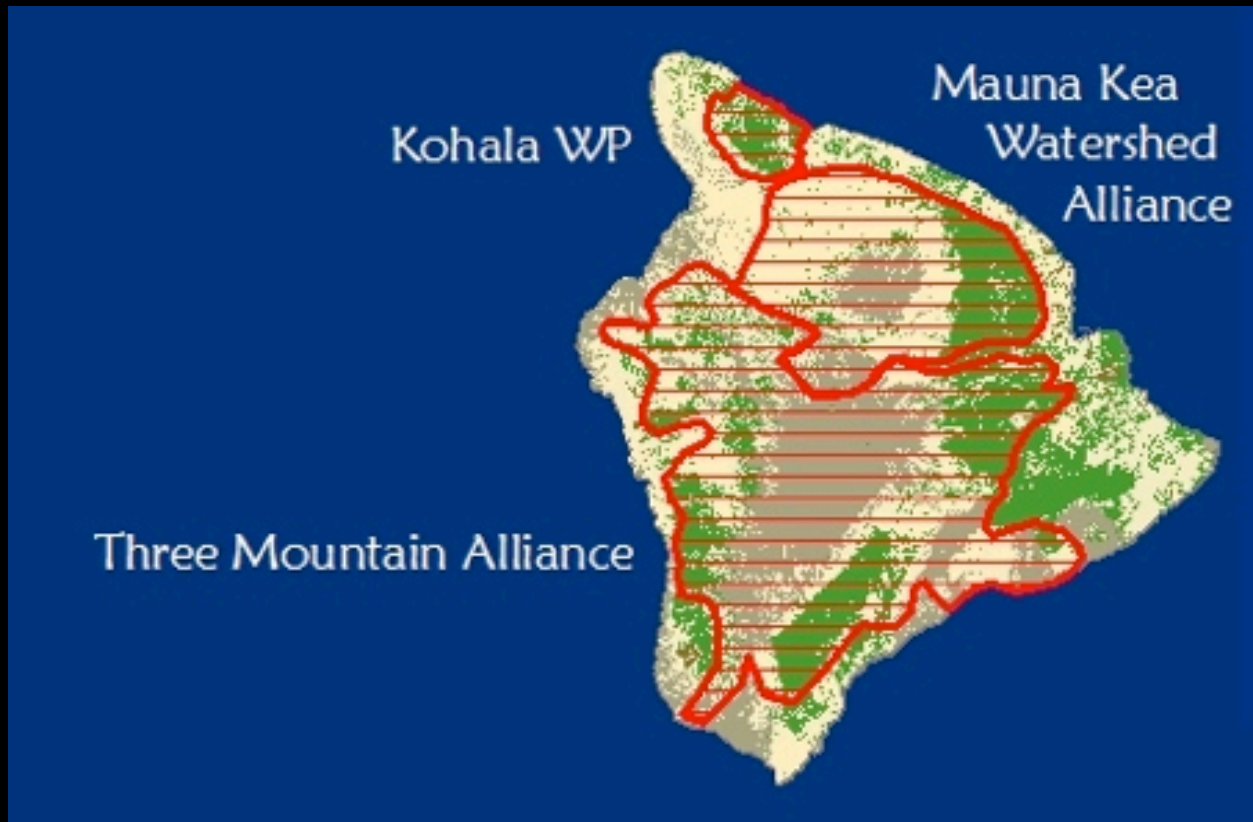
Mauna Kea Watershed Alliance

Kohala WP

Three Mountain Alliance

-  Watershed Partnerships
-  Bare Land
-  Cultivated Land
-  Forest
-  Grassland/Pasture



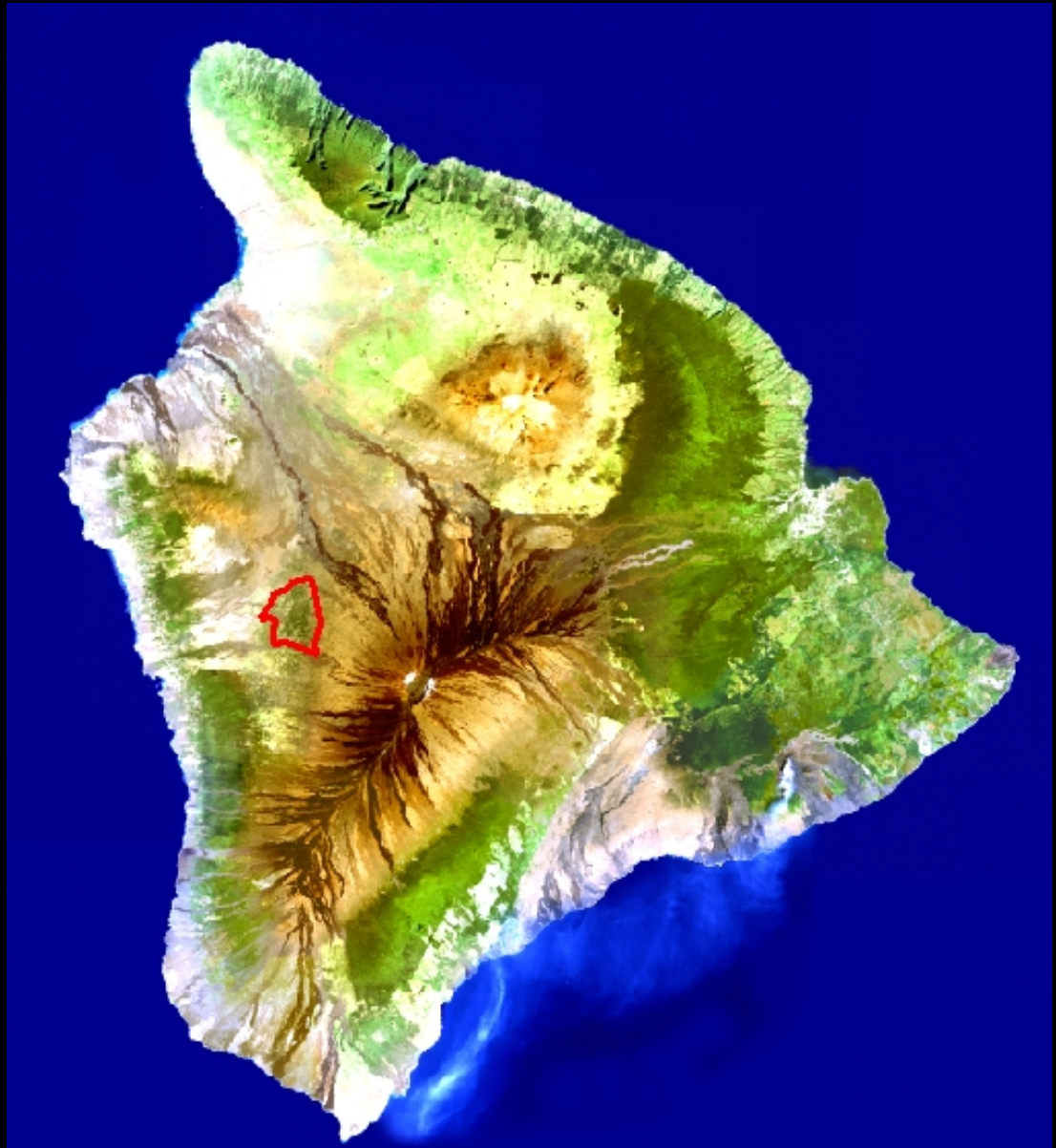


Three Big Island watershed partnerships =

- over 1.7 million acres being managed
- >60% of remaining native habitat in state
- every native Hawaiian terrestrial ecosystem represented
- billions of gallons of water naturally collected & stored
- 20 State, Federal and private landowner partners

## Future Plans

- Protection of montane dry forest at Lupea
- Ka'u Forest Reserve Management



Lupea

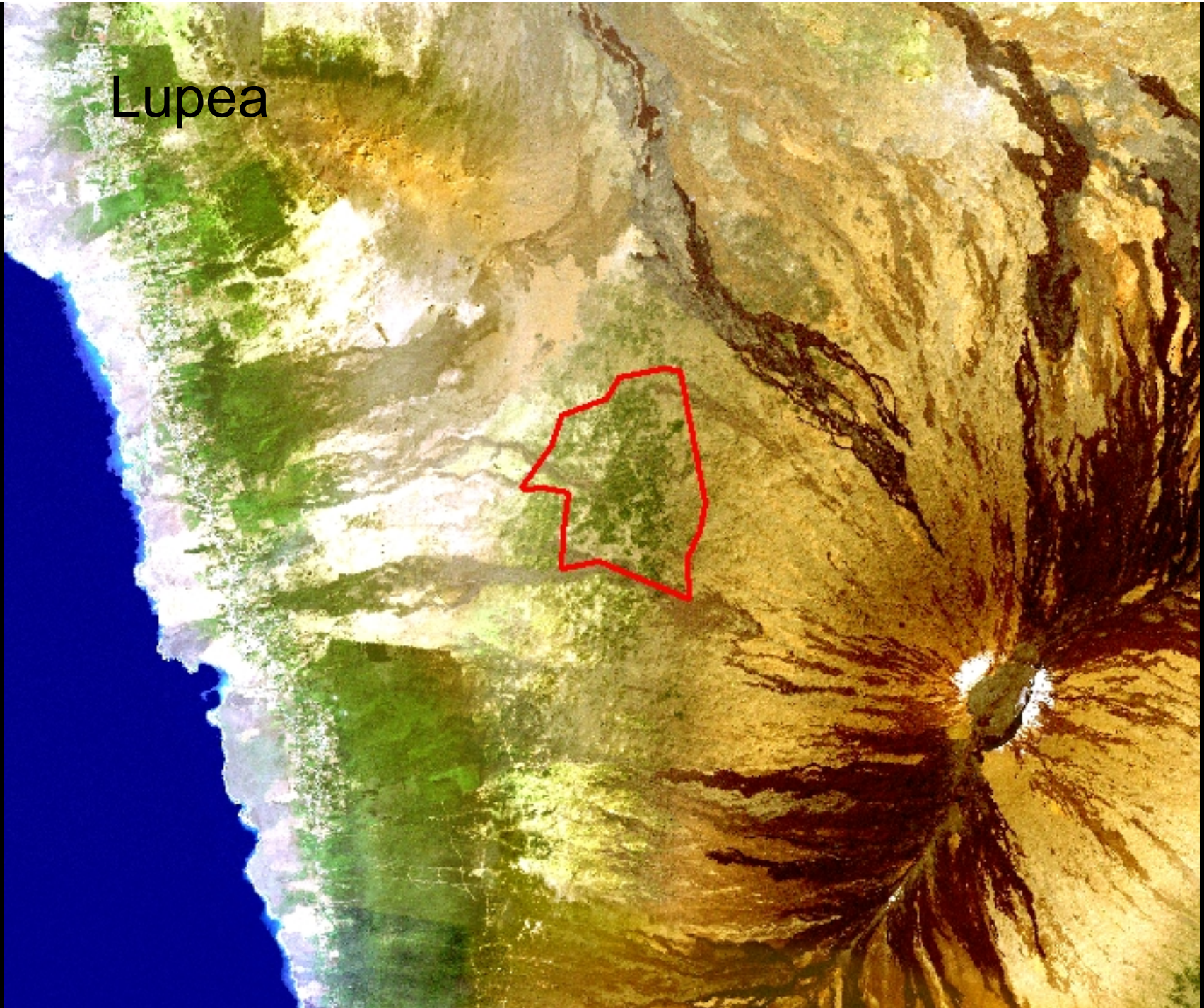


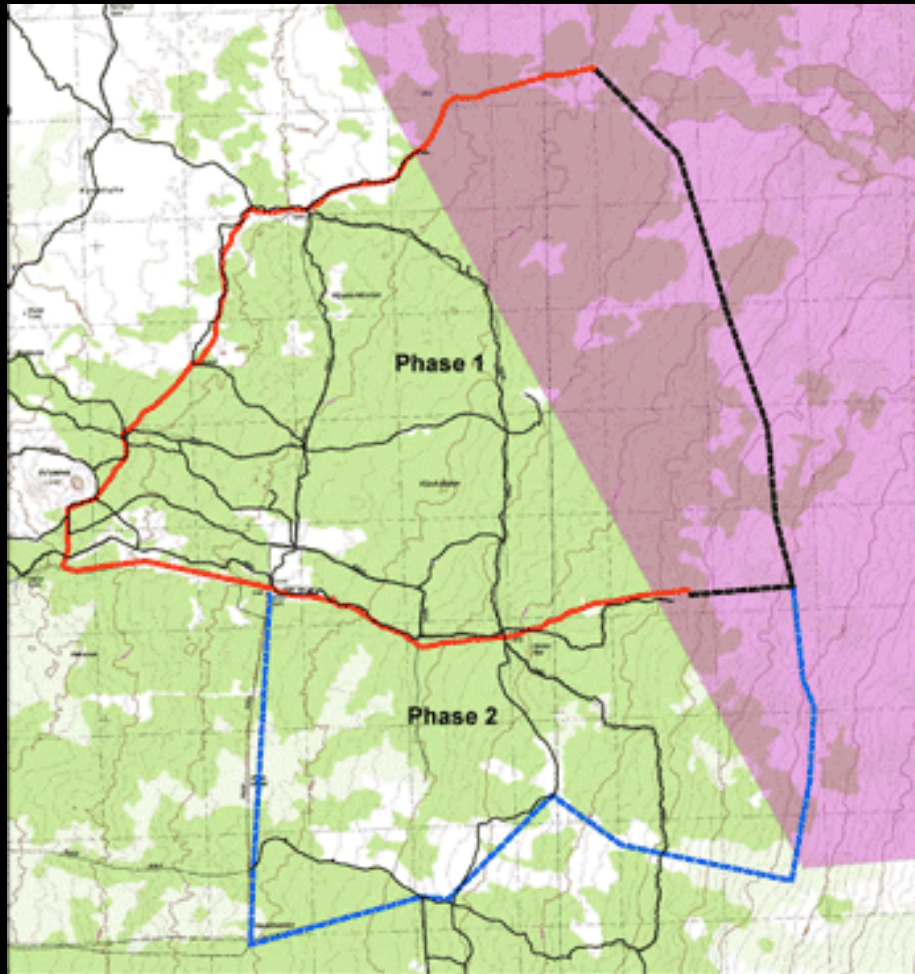


Photo courtesy of Kamehameha Schools

- Lupea project area spans over 10,000 acres
- Largest mamane forest habitat outside Mauna Kea
- Largest stand of sandalwood remaining
- Recovery habitat for several endangered species including the Palila (*Loxioides bailleui*)

# Lupea

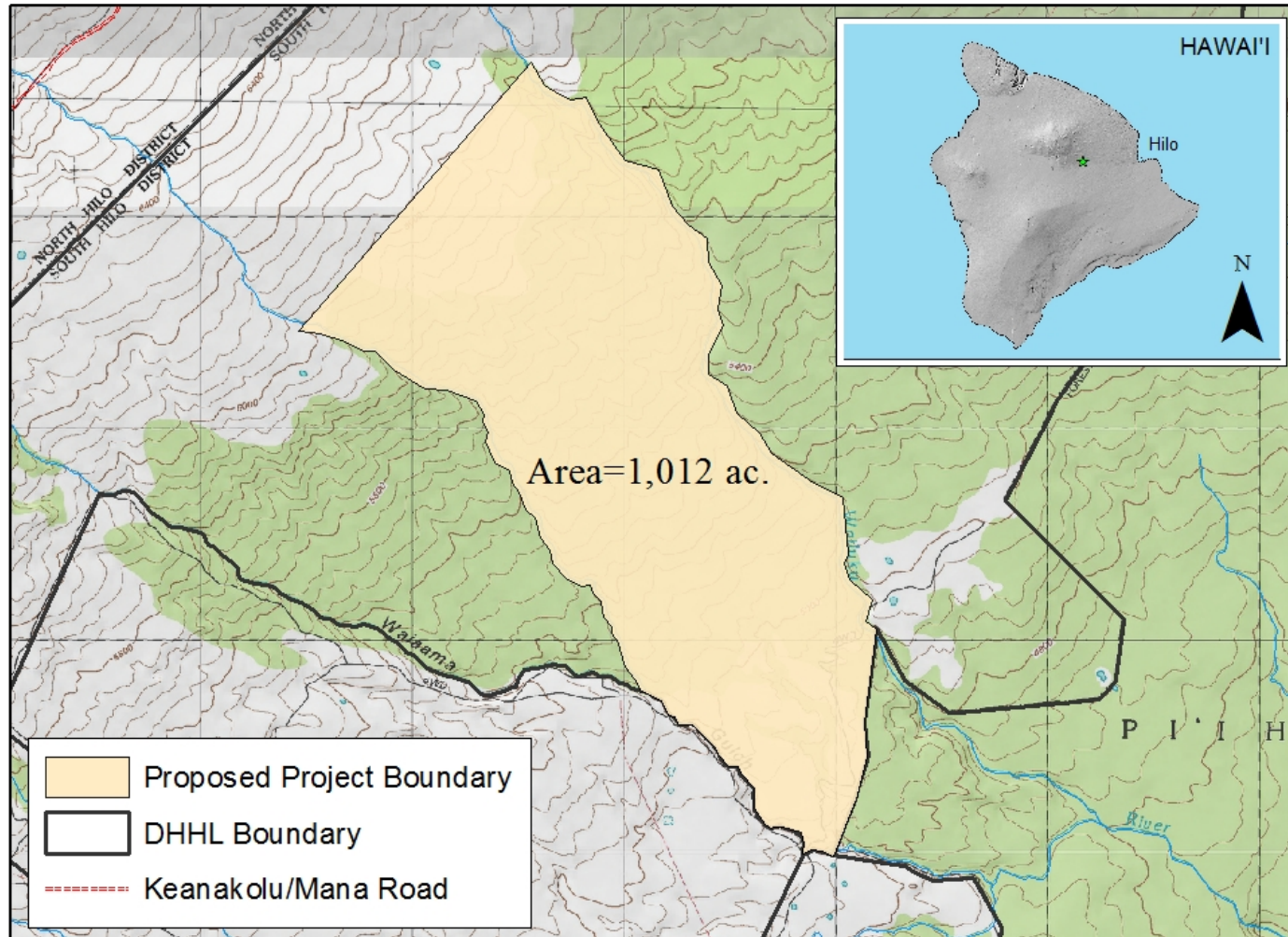
- Main threats include
- Fire
- Feral sheep
- Feral pigs



- 22 miles fencing planned
- 8.5 miles fenced to date (in red)
- Current estimate of remote, ungulate proof fencing = **\$150,000/mile**
- Expected completion of Phase 1 is 2013



# Wailuku Headwaters Restoration Project



Prepared for the Mauna Kea Watershed Alliance by: C. Perry on September 2012  
Data Source: <http://hawaii.gov/dbedt/gis/>

0 0.5 1 2 km

- The project site, Wailuku Headwaters, will encompass 1,012 acres of former pastureland in the upper Pi'ihonua ahupua'a located on Department of Hawaiian Home Lands (Figure 1). The headwaters are the source of water that flow through the Wailuku River to Hilo Bay. Other landowners in the area include the Department of Land and Natural Resources (DLNR) Division of Forestry and Wildlife (DOFAW) and the Hakalau Forest National Wildlife Refuge (HFNWR). Current land cover is composed of former pasturelands with several gorse (*Ulex europaeus*) populations intermixed, however significant remnant native forests remain mostly along gulches and rivers. The forests remaining in the rivers consist of an incredibly rich diversity of native canopy trees, ferns and other native shrubs. The project area is bounded by two streams, the named Wailuku to the north and an unnamed stream (for the purposes of this proposal, Wailuku South) to the south and generally stretches from 4,900–6,000 feet elevation.



Figure 2: The Wailuku River is a naturally occurring barrier to cattle movement. Strategic fencing will be constructed in areas where cattle can cross the streams.



Figure 3: Gorse in Wailuku River.

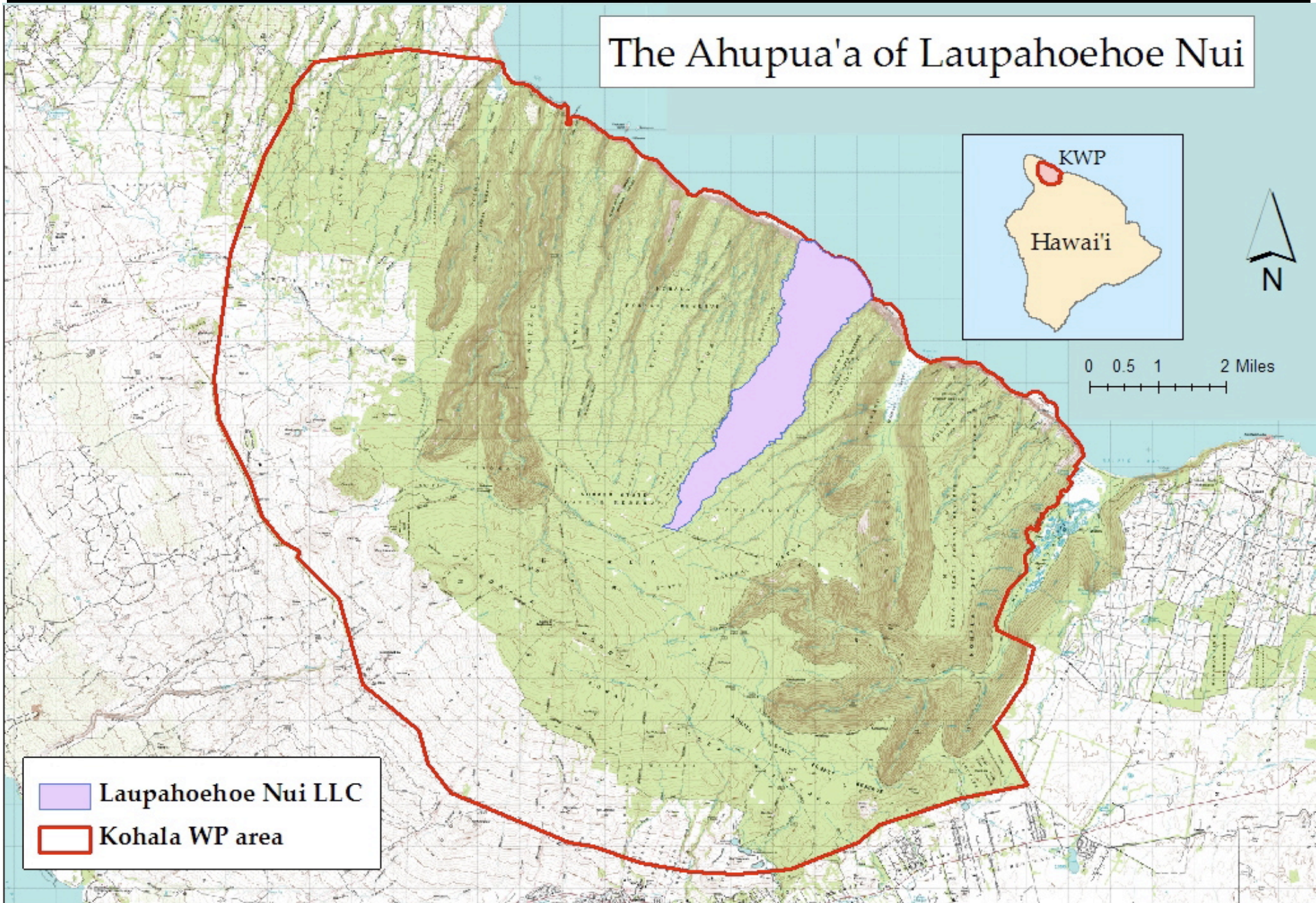
# Lahomene-Laupāhoehoe Nui

*High-Yield Watershed Reserve*

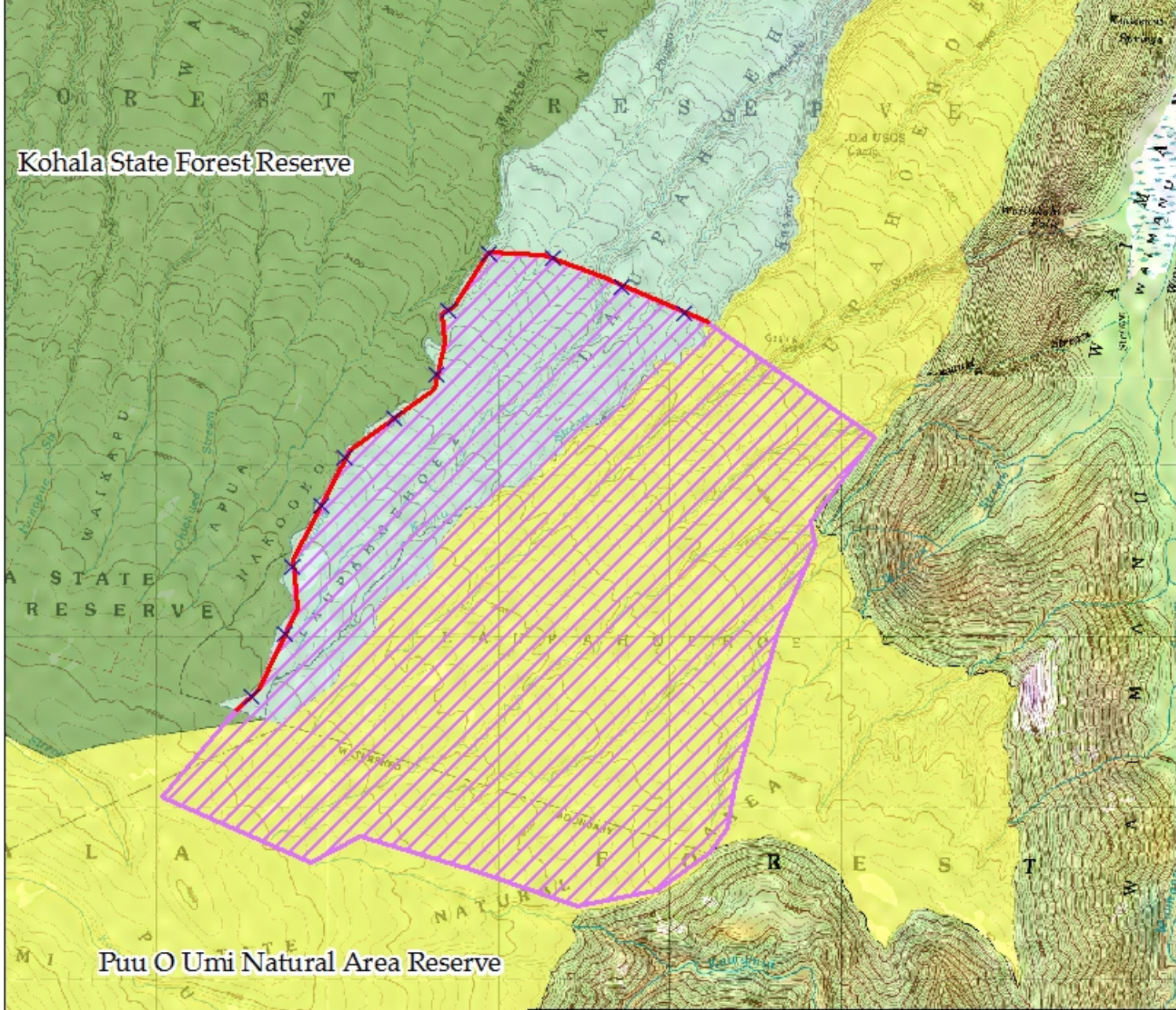


2500 acres  
Public and Private

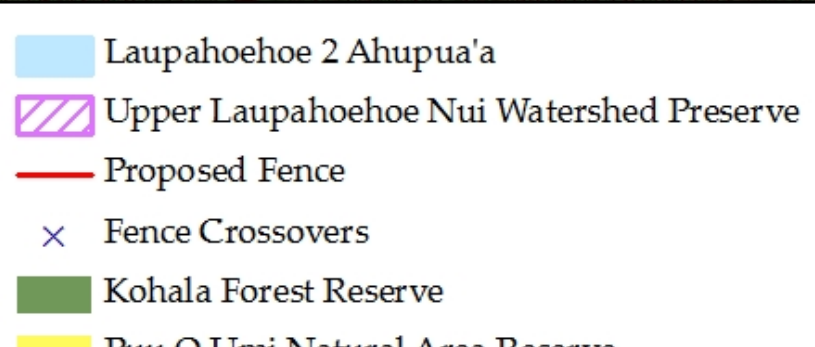
# The Ahupua'a of Laupahoehoe Nui



Kohala State Forest Reserve



Puu O Umi Natural Area Reserve



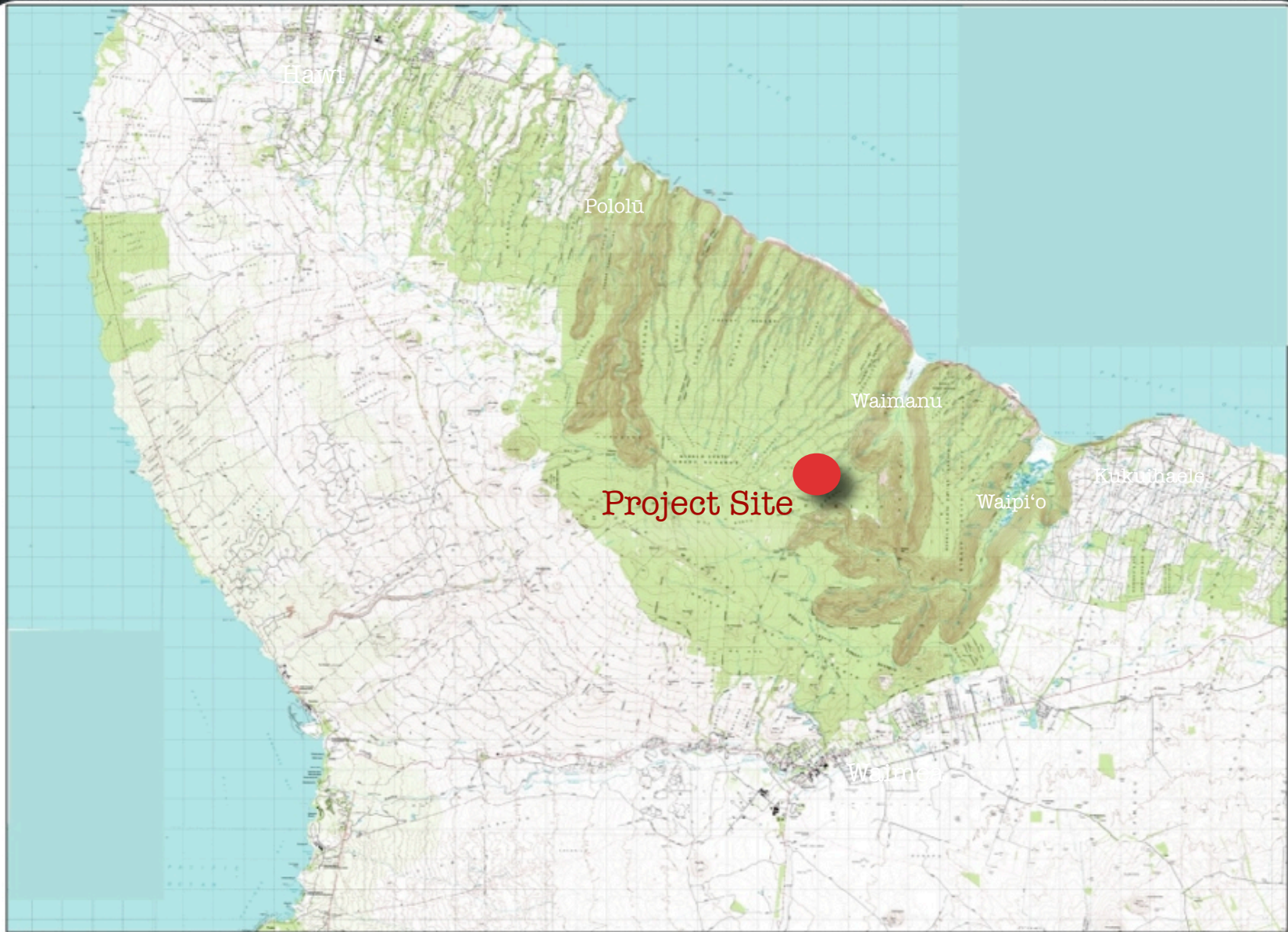




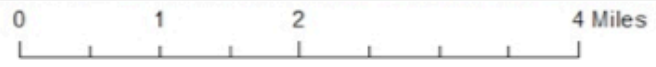




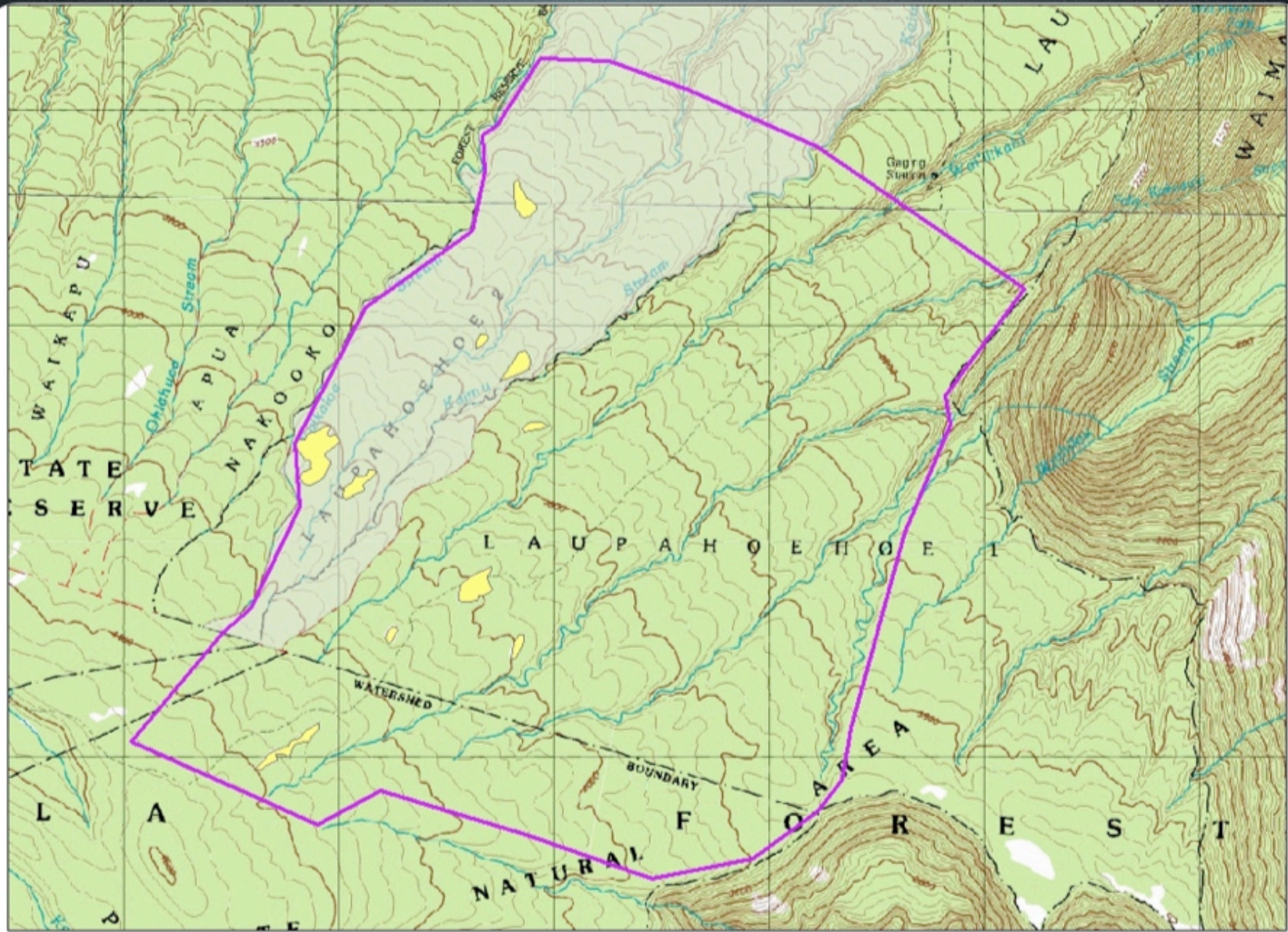




0 2 4 8 Miles







0 0.25 0.5 1 Miles



Building the fence



┆ This project area is located in tropical Hawaiian forests and wetland ecosystems on the windward slopes of Kohala Mountain, north Hawai'i Island. The topography and weather are dramatic here; near the summit of the mountain, montane bogs and wet forest are blanketed by mist and the annual rainfall ranges from 120 to 200 inches. At the coast, numerous streams cascade in waterfalls over 1200-foot cliffs to the ocean below. On the expanses in between, long, flat ridges of wet shrublands with emergent loulu palms alternate with deep, dramatic gulches with flowing perennial streams (see photo to the right.) This remote area has no public access nor trails, and work sites can only be reached by helicopter.


The native ecosystems of windward Kohala Mountain are globally unique, poorly studied, and under severe threat of extinction. According to the IUCN, tropical montane cloud forests contain a disproportionate number of the world's rare and endemic species. Kohala's unique 'ōhi'a dwarf montane bogs are listed as globally imperiled ecosystems by NatureServe. Less than 100 acres remain in the world of some of these wetlands, home to centuries-old stunted trees and endangered plants.







Mai ka nu'u la'i a Ākea,  
*From the throne of Wākea,*

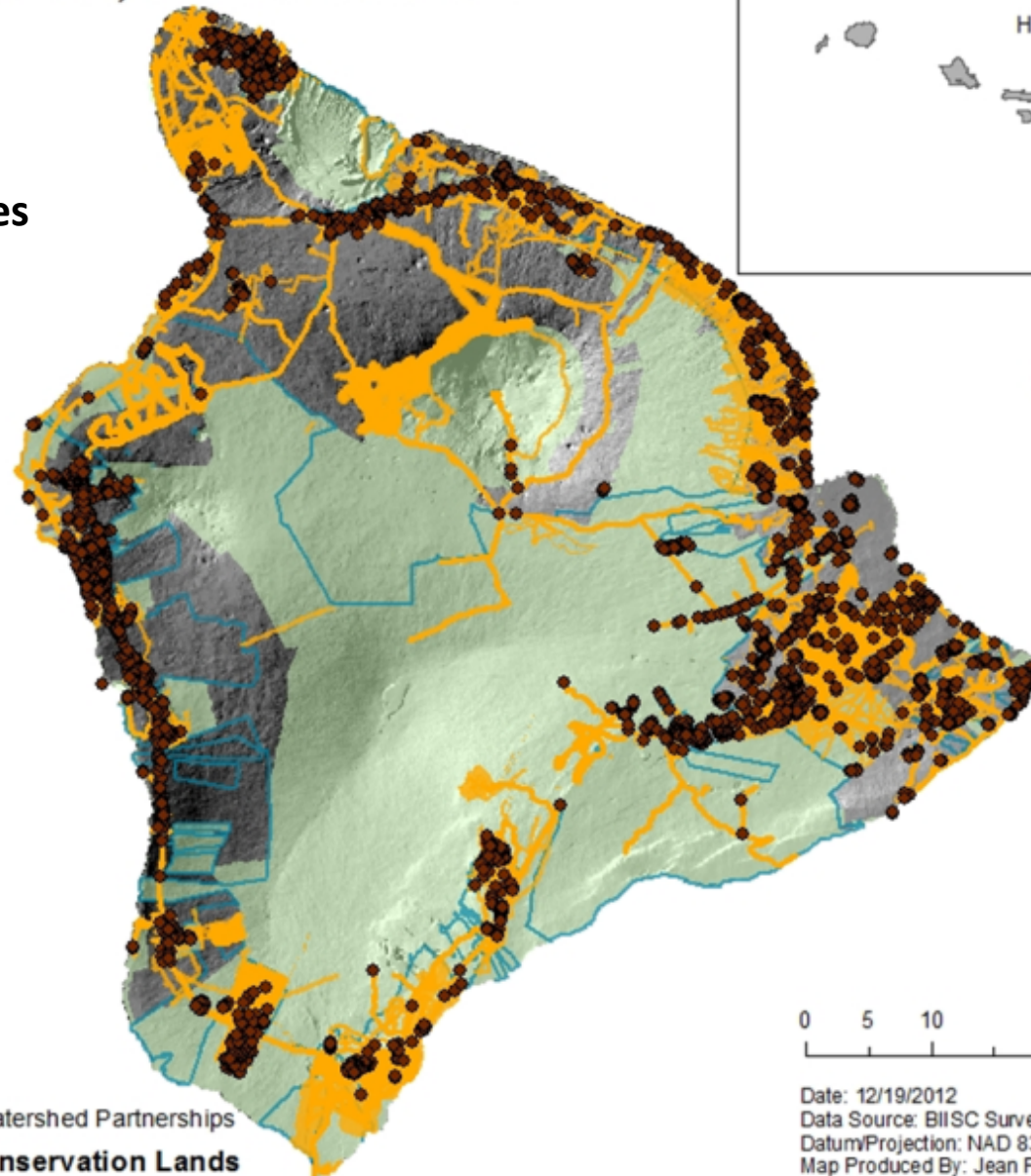
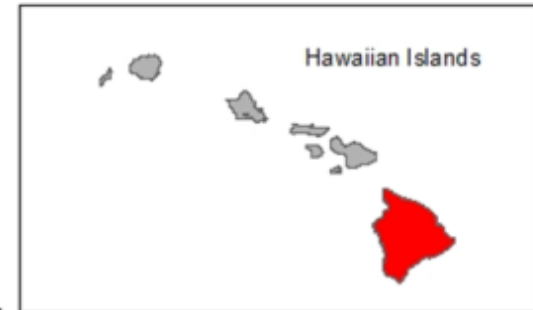


**A hiki i ka lihi kā Papa pā'ū,  
*To the edge of Papa's skirt,***

# Big Island Invasive Species Survey & Treatment Activity

## Aerial, Roadside & Ground

Total: 2.6 million acres



0 5 10 20 Miles

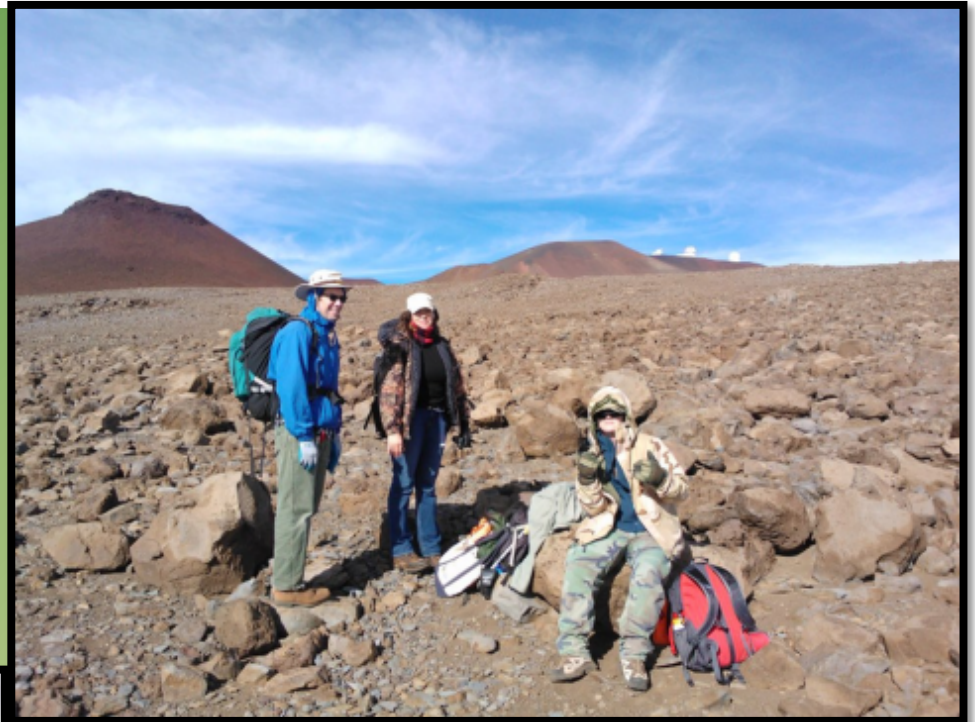
### Legend

- BIISC Fieldwork Points
- BIISC Surveys
- Watershed Partnerships
- Conservation Lands

Date: 12/19/2012  
Data Source: BIISC Surveys (2005-2012)  
Datum/Projection: NAD 83/UTM Zone 5 N  
Map Produced By: Jean Franklin

Office of Mauna Kea  
Management

Invasive Species  
Management Plan

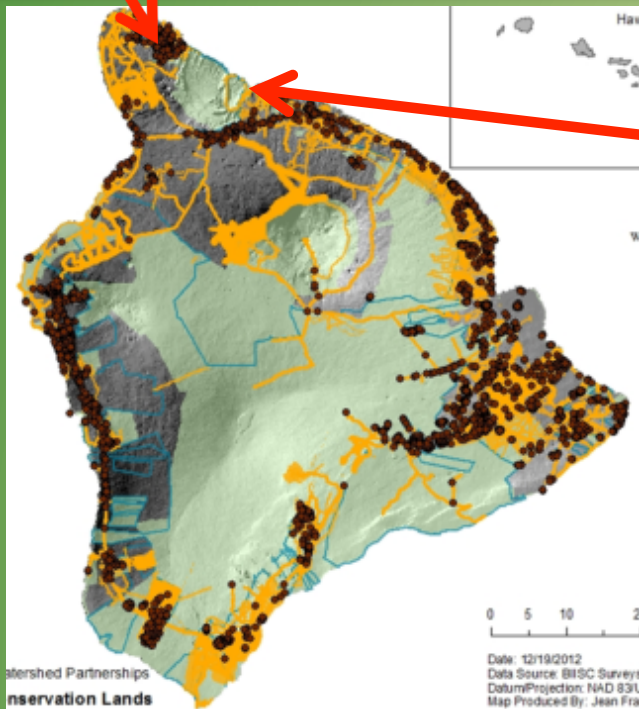


Invasive Axis Deer Team

Ground & Aerial Surveys

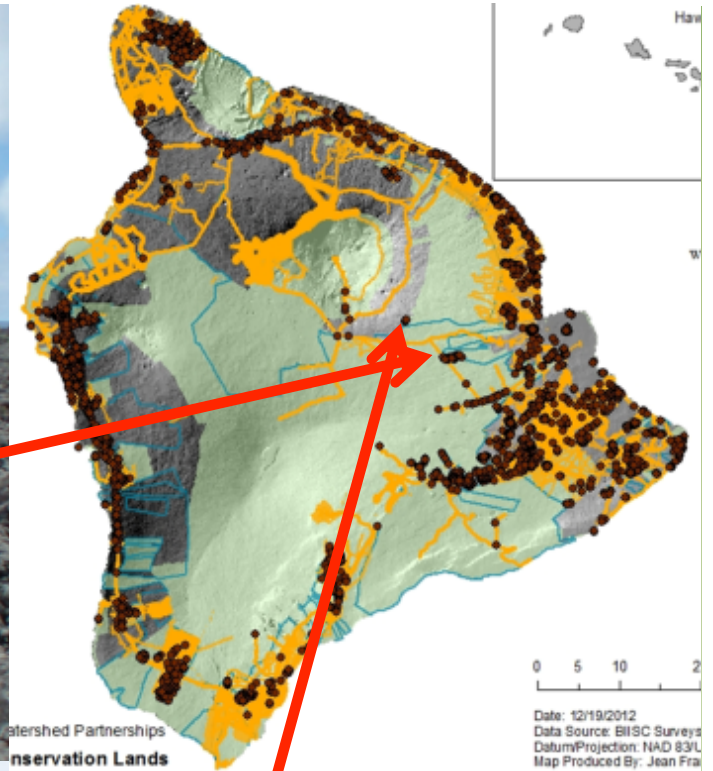
# Rauvolfia vomitoria in Kohala KWP

Lo'i kalo restoration in Waipi'o  
Hawai'i Youth Conservation Corps  
&  
Pōhaha I Ka Lani





**Tree Planting Road**



**Gorse Control**



**DLNR**

**Pu'u 'O'o Ranch**



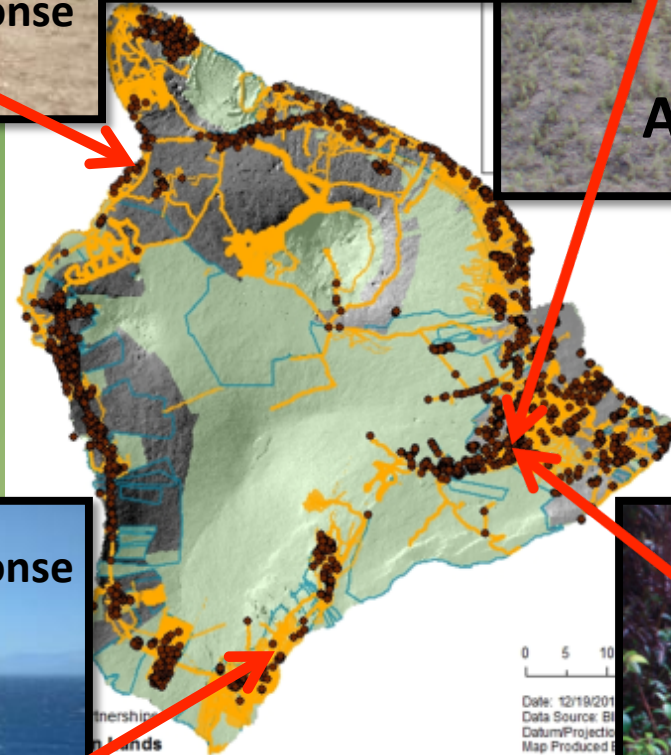


**Early Detection & Rapid Response**  
Rubber Vine



**Aerial treated albizia**

**Kawaihae**  
**Spencer's Beach Park**



**Wao Kele O Puna**

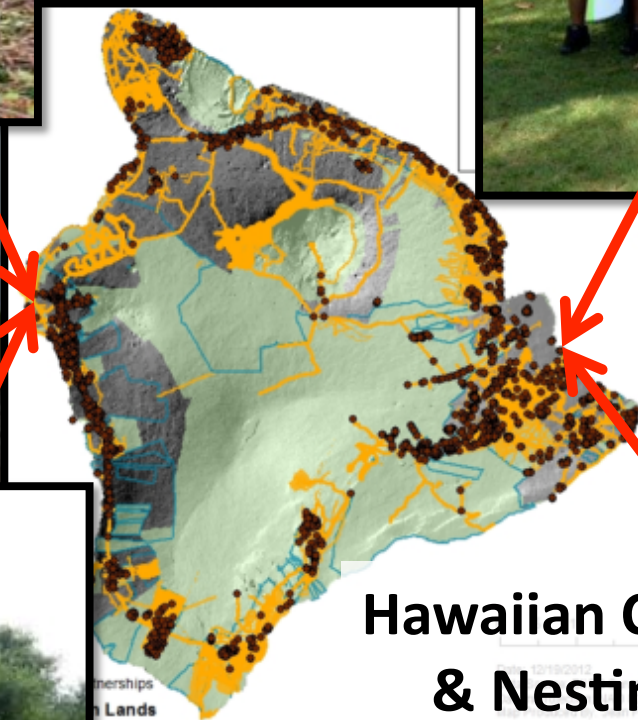
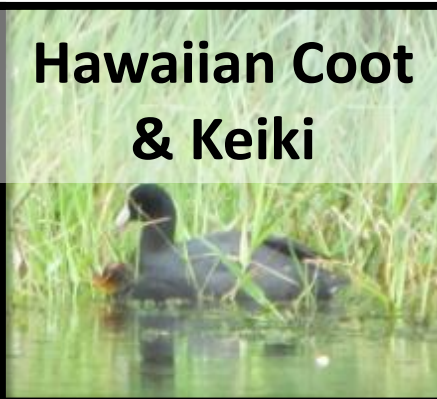


**Early Detection & Rapid Response**  
Rubber Vine

**Na'alehu**



**Miconia Control**





Night Surveys &  
Live Traps

IF YOU SEE A SNAKE, PLEASE

CALL 217-5856



Snakes escaping from boats or freight could easily survive in Hawaii. Prey is abundant, temp is warm....These snakes would damage tourism, bird populations, small pets, chickens & humans.

It is **ILLEGAL** to possess a snake in Hawaii, and the fine is \$5000.

Take care of  
Hawai'i

Report  
Snakes!



Bayfront, Hilo



Invasive Vertebrate  
Rapid Response



**MAHALO A NUI**

