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LAND
STATE PARKS



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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September 25, 2020

Natural Area Reserves System Commission
Kalanimoku Building
1151 Punchbowl Street, Room 325
Honolulu, HI 96813

Natural Area Reserves System Commission:

The Division of Forestry and Wildlife (DOFAW) has completed its review of the proposal for the creation of the Waiea Natural Area Reserve (NAR) TMK (3) 8-6:001:003 and recommends NAR designation. The addition of this parcel to the NAR inventory will preserve in perpetuity a representative example of unique lowland mesic and wet ecosystems on the western flank of Mauna Loa, protect habitat for rare forest birds, and complement contiguous conservation areas.

If you have any questions, or need additional information, please feel free to contact me. Email: david.g.smith@hawaii.gov. Phone: (808) 587-4181

Sincerely,

RA

SB

David G. Smith, Administrator
Division of Forestry and Wildlife

Attachment 1

PROPOSAL FOR THE WAIEA NATURAL AREA RESERVE

September 25th 2020

I EXECUTIVE SUMMARY

A 1,260-acre tract in Waiea, South Kona, on the island of Hawai‘i, is proposed for inclusion in the State of Hawai‘i Natural Area Reserve System (NARS). The proposed Waiea NAR contains unique lowland and montane mesic (moist) forest, closed canopy wet forest, and montane mesic forest ecosystems on the western flank of Mauna Loa, and is habitat for rare forest birds. A major benefit to designating this area as a Natural Area Reserve would be to create a large contiguous area under conservation management because adjacent lands are designated as Federal Refuges and National Parks. Protecting this area will improve the watershed that the South Kona residents rely on for fresh water and reduce erosion into nearshore waters.

II INTRODUCTION

This Reserve would include an area of approximately 1,260 acres in the Waiea ahupua‘a. The lowest section of the Reserve is approximately a mile *mauka* of Highway 11. This area is in the South Kona district of Hawai‘i island, TMK (3) 8-6:001:003 (Figure 1).

The proposed NAR contains ‘ōhi‘a-dominated forests. The inclusion of this area into the NARS would increase the representation of unique mesic and wet forest ecosystems that evolved under a summer wet season. This is an important and unique aspect as all other wet forest ecosystems in Hawaii have evolved in a winter wet season regime.

While surveys of rare species have not been completed, adjacent lands have populations of federally listed Akiapola‘au, ‘Akepa, ‘Alawī, ‘I‘iwi forest birds. Scattered populations of endangered plant taxa *Cyanea hamatiflora*, *Cyanea marksii*, and *Cyanea stictophylla* are found locally. These species are so endangered that there are fewer than 50 known individuals remaining. The area supported ‘Alalā populations until the mid-1990s, and contains an aviary dedicated to that species.

Geologically, this area is composed of Ka‘ū basalt ranging from various flows between 750-5,000 years old.

Proposed Waiea Natural Area Reserve

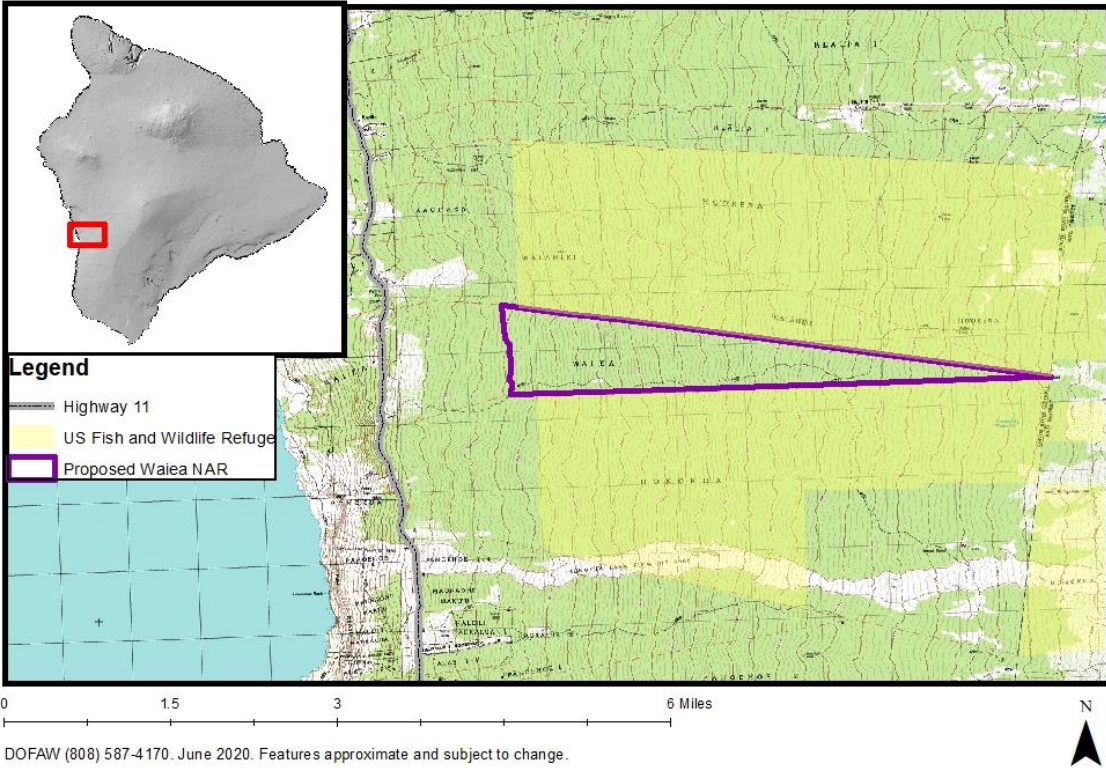


Figure 1: Topographic map of the proposed Waiea Natural Area Reserve.

Proposed Waiea Natural Area Reserve

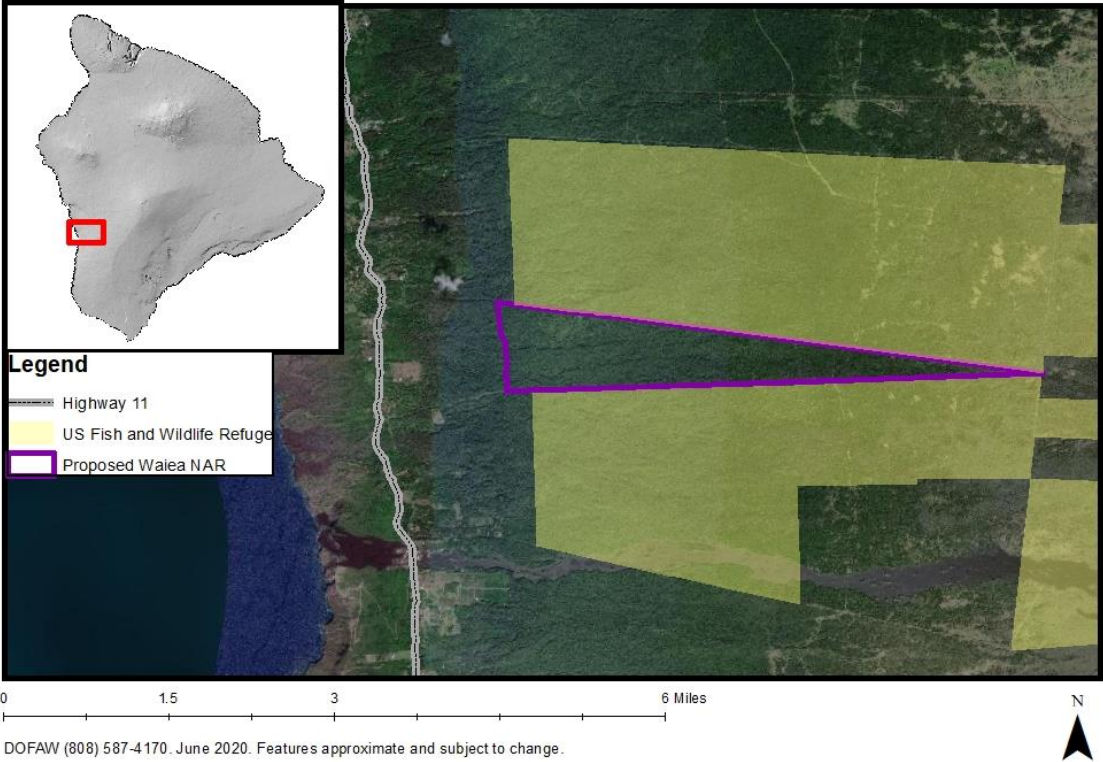


Figure 2. Imagery map of the proposed Waiea Natural Area Reserve.



Figure 3: 'Ōhi'a and uluhe-dominated vegetation at the proposed Waiea Natural Area Reserve.

III BACKGROUND AND HISTORY

Past Land Use, Previous Studies, and Conservation History

This area was leased to McCandless Ranch, which previously owned many of the adjacent parcels. Until the mid-1990s, the area was managed for conservation of 'alalā, as it contained one of the last wild populations of this species. In the mid-1990s, the US Fish and Wildlife Service purchased a 5,300-acre portion of McCandless Ranch immediately north of the proposed Reserve to establish a National Wildlife Refuge, part of the Big Island complex. Recently, US Fish and Wildlife has purchased additional adjacent areas to create a complex of conservation areas that will complement the Natural Area Reserve.

The South Kona Refuge has conducted various forest bird surveys revealing the presence of all endangered Hawai'i island forest birds (except the 'alalā).

A fence runs along the northern boundary of Waiea, constructed by the South Kona Refuge.

Present Land Use and Access

Waiea is unencumbered land in the Agricultural District. No public access is available, however, management access may be gained through the adjacent Refuge to reach various 4WD roads in the parcel, which may have been used for logging or to open up areas in the forest for cattle.

Cultural/Recreational Uses

While Natural Area Reserves are generally open to the public, Waiea is landlocked so no public access is anticipated.

DLNR conducted a cultural study for the Kīpahoehoe Natural Area Reserve and adjacent lands, which lie at approximately the same elevational gradient around 10 miles south of Waiea. While pre-contact use of these lands were believed to be concentrated near the coastlines, the uplands may have been used for harvest of koa logs and birds for feathers.¹

IV JUSTIFICATION

Scientific Value

Waiea is part of a larger contiguous tract of ‘ōhi‘a-dominated forest containing rare forest bird habitat and endangered plant habitat. It is also essential watershed in the central Kona region. The forest in this region has an extraordinarily closed canopy, estimated at 50-75% canopy, far above the normal range for native Hawaiian forests. There also is montane mesic forest with mature stands of ‘iliahi.

Representativeness

Waiea would provide an example of wet and mesic ‘ōhi‘a dominated forest in a geological substrate unique to the Natural Area Reserves System on the western flank of Mauna Loa.

Natural Communities and their Status

Portions of the proposed Reserve have been invaded by *Psidium cattleianum* (Strawberry Guava), *Clidemia hirta* (Koster’s Curse), *Shinus terebithifolius* (Christmasberry). Feral cattle and other ungulates have grazed on much of the understory, particularly in the upper sections, which has an intact canopy but has a ground cover dominated by *Microlaena stipoides* (Meadow rice grass). Despite these major threats, as well as the threats posed by less established alien species, a relatively intact native ecosystem remains.

This parcel contains Priority 1 watershed forests, and services the water supplies of South

Kona.ⁱⁱ



Figure 4: Feral cattle in the proposed Waiea Natural Area Reserve.

Rarity

Waiea is biologically important because of its closed canopy ‘ōhi‘a forests and it is expected that the full range of endangered forest birds (except ‘alalā) exist, based on surveys of the adjacent refuge. Additional surveys may yield rare plants.

Biological/Ecological Design

Designating Waiea as a NAR would create a contiguous band of conservation land, which is largely surrounded by a US Fish and Wildlife Refuge.

Location and Size

This parcel is approximately 1,260-acre area of sloping terrain from 1,600 ft to 6,000 ft in elevation. It is situated in the South Kona region, and will be surrounded on two sides by federal refuge lands.

Threats (Human/Biological)

High priority threats to Waiea ecosystems are invasive plant species, feral ungulates, particularly feral cattle, and forest conversion. Additionally, rats, cats, mongoose, and mosquito-spread avian malaria are threatening forest birds.

Present Level of Protection

This area is within the Agricultural District, which allows intensive land use. In 2020 it was included in legislation to be transferred to the Department of Agriculture to be used for cattle ranching, however that bill did not pass. It also is outside any watershed partnership. If designated a NAR, the area would become part of the watershed partnership and be designated for perpetuity for conservation of the native ecosystems. The proposed NAR would benefit from landscape-scale conservation planning, management and a permanent status prohibiting uses inconsistent with conservation of native ecosystems.

Long-term Ecological Viability/Environmental Consequences of No Action/Urgency

Designating this important section of the South Kona native forest a NAR would enhance the ability of the System to participate and contribute to conservation and restoration actions across the entire region.

As this area is under threat from forest conversion and currently has robust populations of feral pigs, sheep, and cattle, it is projected that no management action would soon lead to imminent loss of this forest.

V. MANAGEMENT NEEDS

Threats Requiring Management

Management priorities include, fencing to remove feral ungulates, which trample and devour vegetation and spread the seeds of invasive weeds. Removal of invasive plant species is also a very high priority management action. Removing or reducing the amounts of predatory mammals will aid forest bird populations. Outplanting could enhance populations of rare species that inhabit this ecological zone. Infrastructure to support management may also be required, including helicopter landing zones, monitoring equipment and small remote field camps.

VI. PUBLIC SUPPORT

*Agencies, Organizations, and Individuals Contacted**

*Interested parties will be notified and a formal public hearing and comment period will occur for this nomination pursuant to Hawai'i Revised Statutes § 195-4.

ⁱ Kumu Pono Associates, 2002. Kīpāhoehoe Ma Kapalilua – Kona Hema, Hawai‘i: A Cultural Study of Kīpāhoehoe and Neighboring Lands in Kapalilua, South Kona, Island of Hawai‘i.

<https://dlnr.hawaii.gov/ecosystems/files/2013/07/Kipahoe-hoe-Cultural-Study.pdf>

ⁱⁱ Department of Land and Natural Resources. 2011. The Rain Follows the Forest – A Plan to Replenish Hawaii’s Source of Water.