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Plants

Kamakahala

Labordia cyrtandrae

Federally Listed as Endangered

Genetic Safety Net Species

IUCN Red List Ranking – Critically Endangered (CR D)

Hawai'i Natural Heritage Ranking - Critically Imperiled (G1)

Endemism – O'ahu

Critical Habitat - Designated

SPECIES INFORMATION: *Labordia cyrtandrae*, a short-lived perennial member of the logania family (Loganiaceae), is a shrub 0.7 to 2 m (2.3 to 6.6 ft) tall. This species is distinguished from others in the genus by its fleshy, hairy, cylindrical stem that flattens upon drying, the shape and length of the floral bracts, and the length of the corolla tube and lobes. *Labordia cyrtandrae* has been observed flowering from May through June, fruiting from July through August, and is sporadically fertile year-round. The flowers are functionally unisexual, and male and female flowers are on separate plants.

DISTRIBUTION: *Labordia cyrtandrae* is endemic to the Wai'anae Mountains and Ko'olau Mountains of O'ahu.

ABUNDANCE: Currently there are four subpopulations known, totaling 11 individuals.

LOCATION AND CONDITION OF KEY HABITAT: *Labordia cyrtandrae* typically grows in shady gulches, slopes, and glens in mesic to wet forests and shrublands dominated by *Metrosideros polymorpha*, *Diplopterygium pinnatum*, and/or *Acacia koa* between the elevations of 212 and 1,233 m (695 and 4,044 ft). The habitat of *Labordia cyrtandrae* has been degraded by feral pigs; competition with the alien plants such as Christmas berry, Koster's curse, prickly Florida blackberry, and strawberry guava, and is potentially threatened by military activities and fire. Associated native plant species include *Antidesma* sp., *Artemisia australis*, *Bidens torta*, *Boehmeria grandis*, *Broussaisia arguta*, *Chamaesyce* sp., *Coprosma* sp., *Cyrtandra* sp., *Dicranopteris linearis*, *Diplazium sandwichianum*, *Dubautia plantaginea* (naenae), *Lysimachia hillebrandii*, *Peperomia membranacea* (ala ala wai nui), *Perrottetia sandwicensis*, *Phyllostegia* sp., *Pipturus albidus*, *Pouteria sandwicensis*, and *Psychotria* sp.

THREATS:

- Damage and habitat degradation by feral pigs;
- Competition with various invasive alien plant species;

- Vulnerable to damage due to natural disasters such as fires and landslides.

CONSERVATION ACTIONS: The goals of conservation actions are not only to protect current populations, but also to establish new populations to reduce the risk of extinction. The USFWS has developed a recovery plan that details specific tasks needed to recover this species. In addition to common statewide and island conservation actions, specific actions include:

- Survey historical range for surviving populations;
- Establish secure *ex-situ* stocks with complete representation of remaining individuals;
- Augment wild population and establish new populations in safe harbors.

MONITORING:

- Survey for populations and distribution in known and likely habitats;
- Monitor enclosure fences for damage and inside enclosures for signs of ungulate ingress;
- Monitor plants for insect damage and plant diseases.

RESEARCH PRIORITIES:

- Develop proper horticultural protocols and pest management;
- Survey *ex-situ* holdings and conduct molecular fingerprinting;
- Conduct pollination biology and seed dispersal studies;
- Map genetic diversity in the surviving populations to guide future re-introduction and augmentation efforts.

References:

Hawai'i Natural Heritage Program, 2005. Hawaii Natural Heritage Program Search, <http://www.hinhp.org/printpage.asp?spp=PDMAL0H0A0>.

International Union for Conservation of Nature and Natural Resources, 2004, IUCN Red List of Threatened Species: Data Base Search, <http://www.redlist.org/search/search-basic.html>.

US Fish and Wildlife Service. 1996. Final Listing, Endangered ETWP Determination of Endangered Status for Twenty-five Plant Species From the Island of Oahu, Hawaii, State of Hawaii, Vol. 61, No. 198, (Thursday, October 10, 1996), 61 FR 53089 53108, 21 pp.

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