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Plants

Phyllostegia waimeae

SPECIES STATUS:

Federally Listed as Endangered

Genetic Safety Net Species

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

Endemism – Kaua'i

Critical Habitat - Designated

SPECIES INFORMATION: *Phyllostegia waimeae*, a nonaromatic member of the mint family (Lamiaceae), is a climbing perennial plant with hairy four-angled stems that are woody at the base. The oval leaves are 2 to 5 in (5 to 13 cm) long, 1 to 2.4 in (2.5 to 6 cm) wide, and have rounded, toothed margins. They are wrinkled and sparsely dotted with oil glands. Flowers grow in groups of six along an unbranched leafy stalk usually 3.9 to 5.9 in (10 to 15 cm) long. The bracts below each flower stalk are broad and partially overlap the flowers. The calyx resembles an inverted cone with broad lobes. The corolla, 0.3 to 0.5 in (8 to 12 mm) long, is pinkish or may be white. The fruits have not been observed. Characteristics that distinguish this species from others in the genus are the nearly stalkless bracts that partially overlap and cover the flowers and relatively fewer oil glands on the leaves.

DISTRIBUTION: Historically, *Phyllostegia waimeae* was known from Kaholuamanu and Ka'aha on Kaua'i.

ABUNDANCE: In recent years, it is known from State land on Kaua'i in the Halemanu and Waimea Canyon areas. Because the Halemanu population has not been seen for almost 40 years, the number of extant individuals is unknown. The Waimea Canyon population consists of a single plant which has not been observed recently.

LOCATION AND CONDITION OF KEY HABITAT: This species typically grows on shallow to deep, well-drained soils in clearings or along the banks of streams of diverse montane mesic to wet forests at elevations from 3,000 to 3,600 ft (915 m to 1,100 m). Associated taxa include 'ōhi'a and *Pritchardia minor* (loulu).

THREATS:

- Habitat destruction by feral goats;
- Erosion;
- Competition with introduced grasses;
- Over-collecting for scientific purposes;

- Stochastic extinction, and/or reduced reproductive vigor due to the small number of existing individuals.

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:

- Continue surveys of population and distribution in known and likely habitats;
- 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>.

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. 1994. Final Listing, Endangered ETWP; Determination of Endangered or Threatened Status for 24 Plants From the Island of Kauai; Federal Register, Vol. 59, No. 38, (25-FEB-94), 59 FR 9304-9329, 26 pp.

Wagner, W. L., D. R. Herbst, and D. H. Lorence. 2005. Flora of the Hawaiian Islands website. <http://ravenel.si.edu/botany/pacificislandbiodiversity/hawaiianflora/index.htm> [August, 2005].

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