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Plants

Phyllostegia mannii

SPECIES STATUS:

Federally Listed as Endangered

Genetic Safety Net Species

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

Endemism - Maui and Moloka'i

Critical Habitat - Designated

SPECIES INFORMATION: *Phyllostegia mannii*, a non-aromatic member of the mint family (Lamiaceae), is a climbing vine with many-branched, four-sided, hairy stems. The opposite, hairy leaves, which are shaped like narrow triangles or narrow triangular ovals, measure 0.8 to 2.2 in (2 to 5.5 cm) long and 0.3 to 0.9 in (0.7 to 2.3 cm) wide and have coarsely toothed margins. Clusters of four to six flowers are arranged in each of several false whorls along an unbranched flowering stem 1.6 to 6 in (4 to 15 cm) long. The calyx is a bell-shaped, lobed structure. The slightly curved, two-lipped corolla tube is about 0.3 in (7 to 8 mm) long and is thought to be white. The fleshy, dark-green to black nutlets are 0.08 to 0.1 in (2 to 2.5 mm) long. This species is distinguished from others in the genus by its hairiness; its thin, narrow leaves which are not pinnately divided; and the usually six flowers per false whorl in a terminal inflorescence.

DISTRIBUTION: Historically, *Phyllostegia mannii* was found from Hanalilolilo to Ohialele on East Moloka'i and at Ukulele on East Maui. It has not been seen on Maui for over 70 years and is apparently extinct on that island. This species is now known only from Hanalilolilo within Kamakou Preserve on privately owned land.

ABUNDANCE: The only currently known population contains four individuals.

LOCATION AND CONDITION OF KEY HABITAT: It grows in shaded sites in sometimes foggy and windswept, wet, open, 'ōhi'a-dominated forests with a native shrub and tree fern (hapu'u) understory at 3,300 to 5,000 ft (1,010 to 1,525 m) in elevation. Associated plant species include 'olapa, a few native ferns, and *Hedyotis* (manono).

THREATS:

- Pigs, goats, deer;
- Alien plant species (*Rubus rosifolius*, *Buddleia asiatica*);
- Because of the small number of individuals, a natural or human-caused event could extirpate all or a significant portion of the population.

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:

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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. 1992. Final Listing Endangered, Endangered and Threatened Wildlife and Plants; Determination of Endangered or Threatened Status for 16 Plants from the Island of Molokai, Hawaii; Federal Register, (08-OCT-92) 57 FR 46325-4634, 2070 lines.

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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