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Plants

Phyllostegia warshaueri

SPECIES STATUS:

Federally Listed as Endangered

Genetic Safety Net Species

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

Endemism - Island of Hawai'i

Critical Habitat - Designated

SPECIES INFORMATION: *Phyllostegia warshaueri*, of the mint family, is either a sprawling or climbing vine with end branches turning up, covered with upward-pointing fine, short hairs on the square stems which are about 1 to 3 m (3.3 to 10 ft) long. The opposite, nearly hairless, toothed leaves are 9.5 to 20 cm (3.7 to 7.9 in) long and 2 to 6.6 cm (0.8 to 2.6 in) wide. Six to 14 flowers are borne in an unbranched inflorescence up to 20 cm (7.9 in) long with a main stalk 25 to 40 mm (1.0 to 1.6 in) long and conspicuous leaflike bracts. Flowers are white, with the upper lip dark rose. This species is distinguished from others in this genus by its long main stalk to the flower clusters, toothed leaves, and the distribution of hairs. Genus nearly endemic to Hawai'i except one species in Tahiti, *P. warshaueri* is endemic to the island of Hawai'i.

DISTRIBUTION The only known individuals occur in two populations in the Kohala Mountains, on privately owned land.

ABUNDANCE: Currently fewer than 20 known plants.

LOCATION AND CONDITION OF KEY HABITAT: Wet forests on old volcanic substrates. This species grows in 'ōhi'a and hapu'u Montane Wet Forest in which koa or olapa may co-dominate, at elevations between 730 and 1,150 m. The critical habitat of this species is being increasingly degraded by feral pigs and invasion of alien plant species.

THREATS:

- Habitat destruction by pigs;
- Competition from alien plant taxa;
- Ditch improvements and road clearing;
- 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. 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:

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

US Fish and Wildlife Service. 1996. Final Listing, Endangered ETWP; Determination of Endangered Status for Thirteen Plants From the Island of Hawaii, State of Hawaii; Federal Register, Vol. 61, No. 198, (10-OCT-96), 61 FR 53137 53153, 17 pp.

Wagner, W.L.; Herbst, D.R.; Sohmer, S.H., 1999. Manual of the Flowering Plants of Hawai'i-- Revised Edition. Honolulu, HI; University of Hawaii Press and Bishop Museum Press. 1853p.