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## Plants

### *Phyllostegia wawrana*

#### 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 wawrana*, a member of the mint family, is a perennial vine that is woody toward the base and has long crinkly hairs along the stem. The leaves are opposite, ovate, and covered with hairs, especially along the veins of the lower surface. The leaves are 10.5 to 20 cm (4.1 to 7.8 in) long and 4 to 11 cm (1.6 to 4.3 in) wide. Flowers are borne in groups of four to six along a leafy flower stalk with one or two short lateral branches. Each of these lateral branches has a pair of leaves at the base. Genus endemic to Hawai'i except one species in Tahiti, *P. wawrana* is endemic to northern Kaua'i.

**DISTRIBUTION:** Endemic to Kaua'i.

**ABUNDANCE:** Currently fewer than 60 plants known.

**LOCATION AND CONDITION OF KEY HABITAT:** This species grows in 'ōhi'a-dominated forest with either 'olapa or uluhe as co-dominant species in montane wet forest. The two populations are on State owned land. The habitat is being degraded by the invasion of naturalized plant species and feral pigs and goats. Associated native species include *Diplazium sandwichianum*, 'ohelo, kanawao, kolea, kopiko, *Dubautia knudsenii* (na'ena'e), *Scaevola procera* (naupaka kuahiwi), *Gunnera* sp., *Pleomele aurea* (hala pepe), *Claoxylon sandwicense* (po'ola), *Elaphoglossum* sp., 'ala'ala wai nui, manono, hapu'u, 'ama'u, ho'awa, 'uki, and *Syzygium* ('ōhi'a ha).

#### THREATS:

- Direct damage and habitat degradation from feral goats and pigs;
- Competition with invasive alien plant taxa.

**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:**

Hawai'i Natural Heritage Program, 2005. Hawaii Natural Heritage Program Search, <http://www.hinhp.org/printpage.asp?spp=PDMALOH0A0>.

US Fish and Wildlife Service. 1996. Final Listing, Endangered ETWP; Determination of Endangered or Threatened status for Nineteen Plant Species From the Island of Kauai, Hawaii; Federal Register, Vol. 61, No. 198, (10-OCT-96), 61 FR 53070 53089, 20 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.