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## Plants

### *Phyllostegia kaalaensis*

#### SPECIES STATUS:

Federally Listed as Endangered

Genetic Safety Net Species

IUCN Red List Ranking - CR D

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

Critical Habitat - Designated

Endemism – Kaua'i, O'ahu

**SPECIES INFORMATION:** *Phyllostegia kaalaensis* is endemic to the Wai'anāe Mountains of O'ahu. Perennial herbs with white flowers, the egg-shaped leaves are 5 to 13 cm (2 to 5 in) long. The species is distinguished from others of the genus by the spreading, pointed teeth on the leaf edges and by the hairs along the margins of the calyx and bracts. It is known from five subpopulations, totaling 32–37 individuals.

**DISTRIBUTION:** *Phyllostegia kaalaensis* was formerly known from only six scattered locations in the Wai'anāe Mountains of O'ahu.

**ABUNDANCE:** Currently, this species is known from 7 occurrences containing a total of fewer than 45 plants, in Waianāe Kai, Pahole Gulch, Ekahanui Gulch, and Palikea Gulch. These occurrences are on State and private lands.

**LOCATION AND CONDITION OF KEY HABITAT:** *Phyllostegia kaalaensis* is found on gulch slopes and bottoms and on almost vertical rock faces in mesic forest or *Sapindus oahuensis* forest between 374 and 796 m (1,227 and 2,611 ft) elevation. This habitat is at risk of severe degradation from feral ungulates and fire. Associated native plant species include *Antidesma platyphyllum*, *Claoxylon sandwicense*, *Diplazium sandwichianum*, *Freycinetia arborea*, *Hibiscus* sp., *Myrsine lanaiensis*, *Myrsine lessertiana*, *Neraudia melastomifolia*, *Pipturus albidus*, *Pouteria sandwicensis*, *Psychotria hathewayi*, *Streblus pendulinus*, and *Urera glabra*.

#### THREATS:

- Pigs;
- Introduced alien plant species;
- Fire.

**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>.

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>.

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