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## Plants

### *Phyllostegia mollis*

#### SPECIES STATUS:

Federal Listing Status - Endangered

Genetic Safety Net Species

IUCN Red List Ranking – Critically Endangered (CR D)

Hawai'i Natural Heritage Ranking - Critically

Imperiled (G1)

Endemism – O'ahu, Moloka'i, Maui

Critical Habitat - Designated

**SPECIES INFORMATION:** *Phyllostegia mollis*, a member of the mint family (Lamiaceae), grows as a nearly erect, densely hairy, non-aromatic, perennial herb. Leaves are oval in outline with rounded teeth and usually are 3.9 to 9.4 in (10 to 24 cm) long and 1.3 to 2.8 in (3.3 to 7 cm) wide. Flowers, usually in groups of six, are spaced along a stem 3.1 to 6.7 in (8 to 17 cm) long; there are two shorter flowering stems directly below the main stem. The flowers have fused sepals which are 0.1 to 0.2 in (3 to 4 mm) long and white petals 0.3 to 0.5 in (8.5 to 12 mm) long fused into a tube and flaring into a smaller upper and a larger lower lip. Fruits are fleshy, dark green to black nutlets about 0.1 in (2 to 3 mm) long.

**DISTRIBUTION:** Historically, *Phyllostegia mollis* was known from the central and southern Wai'anae Mountains from Mt. Ka'ala to Honouliuli, and from Makiki, in the Ko'olau Mountains of O'ahu. It also was known from Moloka'i and East Maui.

**ABUNDANCE:** This species remains only in Kalua'a Gulch and on Pu'u Kaua, in the Wai'anae Mountains, and in Walopai Gulch on East Maui. The two O'ahu populations are 1.3 mi (2 km) apart; together with the East Maui population, they are estimated to contain less than 50 individuals.

**LOCATION AND CONDITION OF KEY HABITAT:** *Phyllostegia mollis* typically grows on steep slopes and in gulches in diverse mesic to wet forests at an elevation of 1,500 to 6,000 ft (450 to 1830 m). Associated plants include ferns, kopiko, *Pisonia* (papala kepau), and *Rubus* (raspberry). Individuals of the species are found on Federal, State, and private lands.

#### THREATS:

- Habitat degradation by feral pigs;
- Competition from alien plant species;
- Stochastic extinction;

- Reduced reproductive vigor due to the small number of remaining 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:**

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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>.

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