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Plants

Kiponapona

Phyllostegia racemosa

SPECIES STATUS:

Federally Listed as Endangered

Genetic Safety Net Species

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

Endemism status – Island of Hawai'i

Critical Habitat - Designated

SPECIES INFORMATION: *Phyllostegia racemosa*, of the mint family (Lamiaceae), is a climbing vine with many-branched, square stems and spicy-smelling leaves. Leaves are opposite, moderately covered with short, soft hairs, dotted with small glands, 3.4 to 6 cm (1.3 to 2.4 in) long, and 1.4 to 4.3 cm (0.6 to 1.7 in) wide, with shallow, rounded teeth. The leaf stalks are densely covered with short hairs. Flower clusters, densely covered with short soft hairs, are comprised of 6 to 12 flowers with individual flower stalks 1 to 3 mm (0.04 to 0.12 in) long and leaf-like bracts.

DISTRIBUTION: Historically, *Phyllostegia racemosa* was found only on the island of Hawai'i in the Hakalau and Saddle Road areas of Mauna Kea and the Kulani/Keauhou and Kipuka Ahiu areas of Mauna Loa.

ABUNDANCE: Today, four populations of the species are known to occur on private and State lands in the Kulani - Keauhou area, on Federal land managed as the Hakalau National Wildlife Refuge, and in Hawai'i Volcanoes National Park. The four populations comprise 25 to 45 individuals.

LOCATION AND CONDITION OF KEY HABITAT: *Phyllostegia racemosa* is typically found epiphytically in disturbed koa-, 'ōhi'a-, and hapu'u-dominated Montane Mesic or Wet Forests at elevations between 1,400 and 1,850 m (4,650 to 6,070 ft). Associated taxa include *Vaccinium calycinum* (ohelo), *Rubus hawaiiensis* (akala), and *Dryopteris wallichiana*.

THREATS:

- Habitat disturbance by feral pigs and cattle;
- Logging;
- Competition from alien plant taxa, such as banana poka, kikuyu grass, *Anthoxanthum odoratum* (sweet vernalgrass), and *Paspalum urvillei* (Vasey grass);
- Habitat change due to volcanic activity;

- Risk of extinction from naturally occurring events and/or reduced reproductive vigor due to the small number of existing populations and 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:

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