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Plants

Pilo

Hedyotis mannii

SPECIES STATUS:

Federally Listed as Endangered

Genetic Safety Net Species

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

Endemism – Maui, Moloka'i, Lāna'i

Critical Habitat - Designated

SPECIES INFORMATION: *Hedyotis mannii*, a member of the coffee family (Rubiaceae), is a perennial plant with smooth, usually erect stems 1 to 2 ft (30 to 60 cm) long which are woody at the base and four-angled or -winged. The leaves are opposite, thin in texture, elliptic to sometimes lance-shaped, and are usually 3 to 7 in (8 to 18 cm) long and 1 to 2.6 in (2.5 to 6.5 cm) wide. Stipules (leaf-like appendages), which are attached to the slightly winged leaf stalks where they join and clasp the stem, are triangular, 0.2 to 0.6 in (5 to 14 mm) long, and have a point usually 0.2 to 0.4 in (4 to 11 mm) long. Flowers are arranged in loose clusters up to 1 ft (30 cm) long at the ends of the stems and are either bisexual or female. The green hypanthium is top-shaped, about 0.05 in (1 to 1.5 mm) long, with sepals 0.06 to 0.1 in (1.5 to 3 mm) long and 0.04 to 0.08 in (1 to 2 mm) wide at the top. The greenish-white, fleshy petals are fused into a trumpet shaped tube 0.2 to 0.6 in (5 to 14 mm) long. Capsules are top shaped and measure 0.08 to 0.1 in (2 to 3 mm) long and about 0.1 in (3 to 4 mm) in diameter. This species' growth habit; its quadrangular or winged stems; the shape, size, and texture of its leaves; and its dry capsule which opens when mature, separate it from other species of the genus.

DISTRIBUTION: *Hedyotis mannii* was once widely scattered on Lāna'i, West Maui, and Moloka'i.

ABUNDANCE: After not being seen for 50 years, this species was rediscovered in 1987 on private land in Kawela Gulch on East Moloka'i. Only two plants are known to exist in this area. In 1991, an additional nine plants of this species were discovered on the island of Lāna'i: five mature and three juvenile plants were found at an elevation of 3,150 ft (960 m) at the head of Hauola Gulch, and a single mature plant at 2,640 ft (805 m) elevation in the gulch between Waialala and Kunoa Gulches.

LOCATION AND CONDITION OF KEY HABITAT: *Hedyotis mannii* typically grows on dark, narrow, rocky gulch walls in mesic and perhaps wet forests at 490 to

3,450 ft (150 to 1,050 m) in elevation. Associated plant species include mamaki, *Cibotium* (hapu'u), *Cyanea* (haha), and *Psychotria* (kopiko).

THREATS:

- Limited number of individuals makes it extremely vulnerable to extinction by stochastic events;
- Feral pigs;
- Alien plants degrade the habitat.

CONSERVATION ACTIONS: The goals of conservation actions are to not only protect current populations, but also 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 historic 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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Hawai'i Natural Heritage Program. 2005. Hawaii Natural Heritage Program Search,
<http://www.hinhp.org>.

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Wagner, W.L., Herbst, D.R., and 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.