



CPC, 2005

Plants

Hedyotis st.-johnii

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: *Hedyotis st.-johnii* is a succulent perennial herb of the coffee family (Rubiaceae) with slightly woody, trailing, quadrangular stems up to one foot (ft) (30centimeters (cm)) long. The fleshy leaves are clustered toward the base of the stem and are broadly ovate to broadly elliptic, 2 to 6 in (5.5 to 15 cm) long and about 2 in (3.5 to 7.5 cm) wide. Clusters of flowers are borne on 3 to 6 in (7 to 15 cm) long flowering stems. The leafy, broadly ovate calyx lobes are about 0.1 in (3 to 4 mm) long and wide, enlarging in fruit to about 0.4 in (8 to 11 mm) long and wide. The green petals are fused into a tube about 0.2 in (5 to 8 mm) long and wide. The fruit consists of kidney shaped capsules with dark brown to blackish angular seeds. *H. st.-johnii* is distinguished from related species by its succulence, basally clustered fleshy leaves, shorter floral tube, and large leafy calyx lobes when in fruit.

DISTRIBUTION: *Hedyotis st.-johnii* was first collected on the vertical sea cliffs between Kalalau and Honopu valleys on Kaua'i. All subsequent collections have been from a 4.5 mi (7.2 km) long section of the Na Pali coast: between Kalalau and Honopu Beaches, and from Nualolo Valley, Nualolo Kai, and Milolii Beach.

ABUNDANCE: *Hedyotis st.-johnii* is still extant in all of those areas except perhaps Nualolo Kai, which has not been resurveyed in 11 years. Less than 200 individuals have been seen, with some populations numbering as low as one plant. Similar, inaccessible habitat might harbor as yet undiscovered individuals.

LOCATION AND CONDITION OF KEY HABITAT: *Hedyotis st.-johnii* grows in the crevices of near-vertical coastal cliff faces, confined to north-facing cliffs within the spray zone below 250 ft (75 m) elevation. Sparse dry coastal shrub vegetation with *Artemisia australis* ('ahinahina), *Chamaesyce celastroides* ('akoko), and the alien *Pluchea symphytifolia* (sourbush) is typical of the habitat of *H. st.-johnii*.

THREATS:

- Goat activity;
- Competition from alien plant species;

- Small population size and restricted distribution create limited gene pool, may depress reproductive vigor;
- Landslides;
- Fire.

CONSERVATION ACTIONS: The goals of conservation actions are to not only protect current populations, but also establish further 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 populations 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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