



N. Tangalin, NTBG

Plants

Oha

Delissea rivularis

SPECIES STATUS:

Federally Listed as Endangered
Genetic Safety Net Species
Hawai'i Natural Heritage Ranking –
Critically Imperiled (G1)
Endemism – Endemic to Kaua'i
Critical Habitat - Designated

SPECIES INFORMATION: *Delissea rivularis*, a member of the bellflower family, is a shrub, unbranched or branched near the base, with hairy stems 4 to 5 m (13 to 16 ft) long. The leaves are arranged in a rosette at the tips of the stems. The elliptic to lance-shaped leaves are 20 to 30 cm (8 to 12 in) long and 3 to 8 cm (1.2 to 3.2 in) wide, with minutely toothed margins. Both leaf surfaces are covered with hairs. Six to twelve flowers are arranged on an inflorescence stalk 4 to 8 cm (1.6 to 3.2 in) long, each having an individual stalk 10 to 15 mm (0.4 to 0.6 in) in length. The curved, hairy flowers are white with blue longitudinal stripes, 30 to 40 mm (1.2 to 1.6 in) long, with one dorsal knob. The fruit is a spherical, dark purple berry 10 to 15 mm (0.4 to 0.6 in) in diameter. This species is distinguished from others of the genus by the color, length, and curvature of the corolla; shape of the leaves; and presence of hairs on the stems, leaves, flower clusters, and corolla.

DISTRIBUTION: Historically, *Delissea rivularis* was known from Waiakealoha waterfall (location unknown), Waialae Valley, Hanakoa Valley, and Kaholuamano on the island of Kaua'i.

ABUNDANCE: This species, recently recollected after almost 80 years, is now known only from the upper Hanakoa Valley stream area of northwestern Kaua'i. This population of 15 to 20 plants, scattered over an area of more than 100 sq m (1,100 sq ft), is on State land within the Hono O Na Pali NAR at about 1,190 m (3,900 ft) elevation.

LOCATION AND CONDITION OF KEY HABITAT: *Delissea rivularis* is found on steep slopes in 'ōhi'a-'olapa montane wet or mesic forest, near streams. Associated native species include kanawao, *Athyrium* sp., *Carex* sp., *Coprosma* sp. (pilo), and *Sadleria* sp. ('ama'u).

THREATS:

- Competition with the encroaching prickly Florida blackberry;
- Habitat destruction by feral pigs;
- Reduced reproductive vigor and/or a risk of extinction from naturally occurring events due to the small number of remaining individuals in the single remaining population.

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 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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