



Plants

Delissea rhytidosperma

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: *Delissea rhytidosperma*, a member of the bellflower family, is a branched shrub 1.6 to 8.2 ft (0.5 to 2-5 m) tall. The lance-shaped or elliptic leaves are 3.1 to 7.5 in (8 to 19 cm) long and 0.8 to 2.2 in (2 to 5.5 cm) wide and have toothed margins. Clusters of 5 to 12 flowers are borne on stalks 0.4 to 0.8 in (1 to 2 cm) long; each flower has a stalk 0.3 to 0.5 in (8 to 13 mm) long. The greenish white (sometimes pale purple) corolla is 0.6 to 0.8 in (14 to 20 mm) long. The stamens are hairless, except for a small patch of hair at the base of the anthers. The nearly spherical dark purple fruits are 0.3 to 0.5 in (7 to 12 mm) long and contain numerous white seeds. This species differs from other taxa of the genus by the shape, length, and margins of the leaves and by having hairs at the base of the anthers.

DISTRIBUTION: Historically, *Delissea rhytidosperma* was known from scattered locations throughout the island of Kaua'i. Populations ranged as far north as Wainiha and Limahuli Valleys, as far east as Kapaa and Kealia, and as far south as Haupu Range between the elevations of 1,000 and 3,000 ft (300 and 1,000 m).

ABUNDANCE: Today, only one population with six individuals, located in State owned Kuia NAR, is known to exist. The only other populations seen in recent years were a single plant in Limahuli Valley which is now dead and 5 plants in the Haupu Range.

LOCATION AND CONDITION OF KEY HABITAT: *D. rhytidosperma* generally grows in diverse lowland mesic forests and *Acacia koa* (koa) dominated lowland dry forests that have well-drained soils with medium-to fine-textured subsoil. They are found in elevations of 120 to 915 meters (394 to 3,000 ft). Feral deer, pigs, and invasive plant species threaten to degrade the key habitat for *D. rhytidosperma*. The last known population is found on State owned land at Kuia NAR. Associated species of *D. rhytidosperma* include *Euphorbia haelealeana* (akoko), *Psychotria hobydi* (kopiko), *Pisonia* sp. (Papala kepau), *Pteralyxia* sp. (kaulu), *Dodonaea viscosa* (aalii), *Cyanea* sp (haha), *Hedyotis* sp., *Dianella sandwicensis* (ukiuki), *Diospyros sandwicensis* (lama), *Styphelia tameiameia*

(pukiawe), and *Nestegis sandwicensis* (olopua). Alien plants that have invaded these habitats include *Lantana camara* (lantana), *Passiflora ligularis* (sweet granadilla), *Cordyline fruticosa* (ti), and *Passiflora mollissima* (banana poka).

THREATS:

- Predation and habitat degradation by mule or black-tailed deer;
- Feral pigs;
- Goats;
- Rats;
- Slugs;
- Fire;
- Competition from alien plant species;
- Landslides;
- Reproductive vigor due to the small number of existing individuals.

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. A USFWS recovery plan 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:

- Survey for populations and distribution in known and likely habitats;
- Monitor exclosure fences for damage and inside exclosures for signs of ungulate ingress;
- 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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