



D. Bender, NTBG



Plants

Haha

Cyanea kuhihewa

SPECIES STATUS:

Federally Listed as Candidate

Genetic Safety Net Species

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

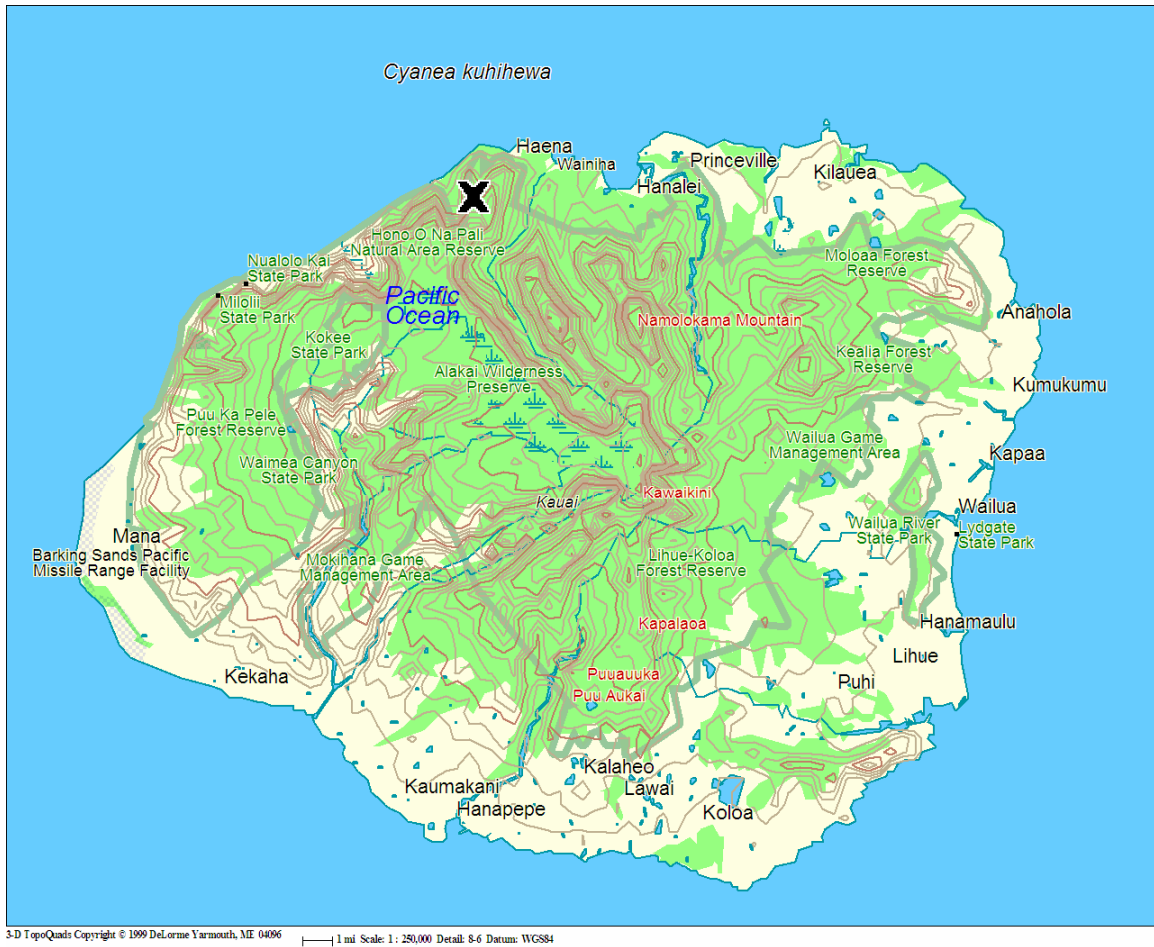
Endemism – Kaua'i

SPECIES INFORMATION: *Cyanea kuhihewa*, a member of the bellflower family (Campanulaceae) is a shrub 0.4 to 2.3 meters (1.2 to 7.4 feet) tall; with unbranched erect stems 0.4 to 0.5 centimeters (cm) (0.16 to 0.2 inches) in diameter. Leaves are glabrous, 31 to 38 cm (12 to 15 in) long, 1.2 to 1.5 cm (0.5 to 0.6 in) wide, and slightly paler below. Inflorescences are ascending, 5 to 8-flowered, with a peduncle 10 to 16 millimeters (mm) (0.4 to 0.6 in) long and sparsely pubescent. Calyx lobes are triangular, 1.4 to 1.5 mm (0.06 in) long, and 0.9 to 1.1 mm (0.04 in) wide. The corolla is rose-purple with lobes edged in white, 47 to 53 mm (1.9 to 2.1 in) long, a curved tube 28 to 33 mm (1.9 to 2.1 in) long and 5.3 mm (0.2 in) at the base. Mature berries have not been observed. Seeds are ellipsoid, dark brown or black, 0.7 to 0.8 mm (0.03 in) long, and 0.3 to 0.4 mm (0.03 in) wide, smooth and shiny.

DISTRIBUTION: This newly discovered, recently published species was known from only one population totaling six individuals in Limahuli Valley on Kaua'i.

ABUNDANCE: In 2003, the last known individual in the wild died, but prior to that time, seeds were collected for genetic storage and the species is still found in cultivation.

LOCATION AND CONDITION OF KEY HABITAT: *Cyanea kuhihewa* is found in *Metrosideros polymorpha*-*Dicranopteris linearis* lowland wet forest with associated species such as *Antidesma platyphyllum*, *Athyrium microphyllum*, *Bidens* sp., *Bobea* sp., *Bohemeria grandis*, *Cibotium* sp., *Diplopterygium pinnatum*, *Eurya sandwicensis*, *Freycinetia arborea*, *Hedyotis acuminata*, *Isodendron longifolium*, *Machaerina* sp., *Melicope feddei*, *Pisonia* sp., *Perrottetia sandwicensis*, *Psychotria* sp., *Sadleria* sp., *Tetraplasandra* sp., and *Wikstroemia* sp., at an elevation of 512 m (1,680 ft).



THREATS:

- Feral Pigs;
- Competition from alien plants;
- Reduced reproductive vigor due to small population size.

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 National Tropical Botanical Garden has the species in cultivation, but it is very difficult to grow. Tissue culture of the last remaining plant known of this species is now underway at several labs. 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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