



Plants

Haha

Cyanea glabra

SPECIES STATUS:

Federally Listed as Endangered

Genetic Safety Net Species

IUCN Red List Ranking - Critically Endangered

(CR D)

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

Endemism - Maui

Critical Habitat - Designated

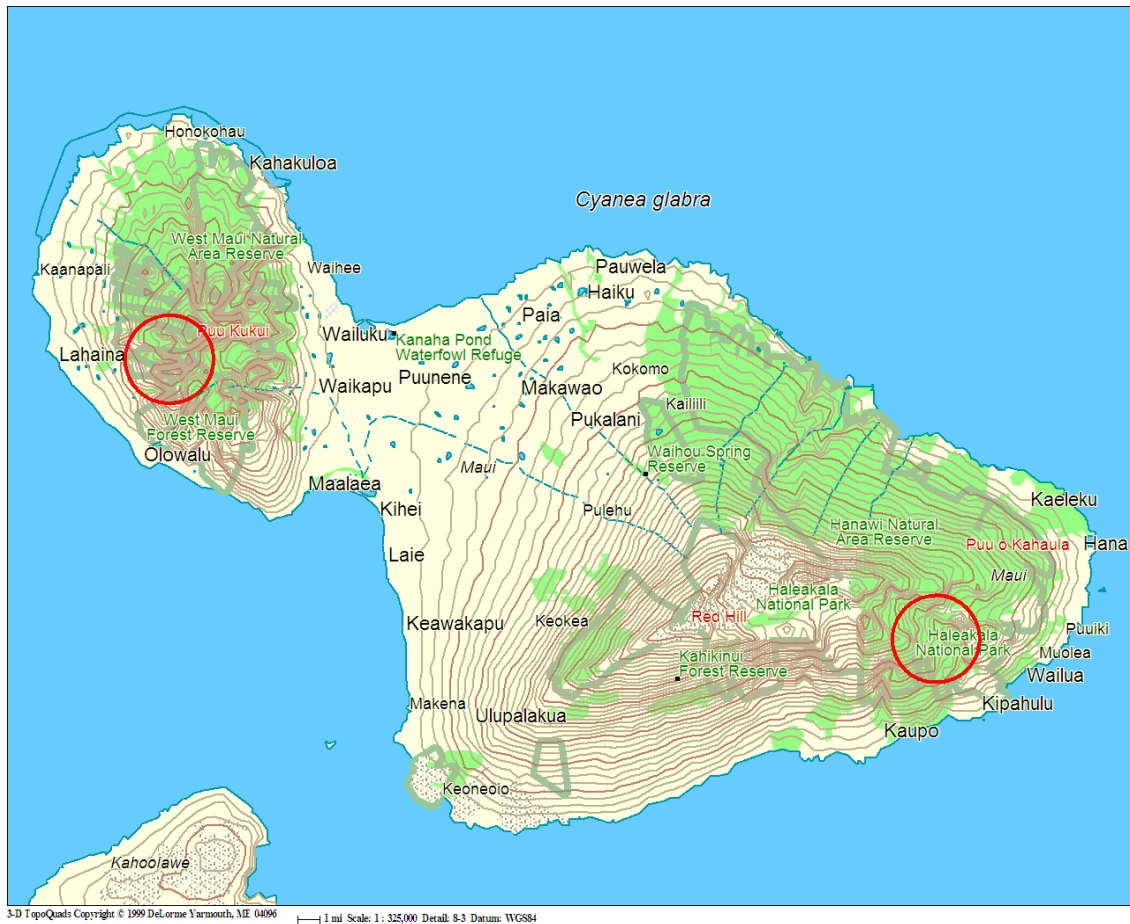
SPECIES INFORMATION: *Cyanea glabra*, a member of the bellflower family (Campanulaceae), is a branched shrub. The leaves of juvenile plants are deeply pinnately lobed, while those of the adult plants are more or less entire and elliptical. Adult leaves are 23 to 36 cm (9 to 14 in.) long and 7 to 12 cm (3 to 5 in.) wide. The upper surfaces of the leaves are green and hairless, while the lower surfaces are pale green and hairless to sparsely hairy. The margins of the adult leaves are thickened and shallowly toothed to irregularly lobed. Six to eight flowers are born in each inflorescence. The main inflorescence stalk is 20 to 55 mm (0.8 to 2.2 in.) long, while the individual flower stalk is 12 to 25 mm (0.5 to 1.0 in.) long. The hypanthium is widest at the top, 7 to 10 mm (0.3 to 0.4 in.) long, and about 5 mm (0.2 in.) wide. The corolla is white, often with a pale lilac tinge, 50 to 60 mm (2 to 2.4 in.) long, and about 8 mm (0.3 in.) wide. The tube of the corolla is curved. The lobes are spreading, 0.25 to 0.33 times as long as the tube, and are covered by small, sharp projections. The berries are yellowish orange, elliptical, and 10 to 15 mm (0.4 to 0.6 in.) long. The calyx (sepals collectively) persist on the berry. This species is differentiated from others in this endemic Hawaiian genus by the size of the flower and the pinnately lobed juvenile leaves.

DISTRIBUTION: *Cyanea glabra* has been reported historically from two locations on West Maui and five locations on Haleakalā, east Maui.

ABUNDANCE: This species is currently known from only two populations, one population of 12 individuals is found in Kauaula Gulch on west Maui, on privately owned land; and one scattered population of approximately 200 individuals is found in Kipahulu Valley, within Haleakalā National Park.

LOCATION AND CONDITION OF KEY HABITAT: Kipahulu Valley, Haleakalā NP; and Kauaula Gulch, owned privately. Typical habitat is wet forest dominated by *Acacia koa* and/or *Metrosideros polymorpha*, at elevations between 975 to 1,340 m (3,200 to 4,400

ft). Associated native species include *Cheirodendron trigynum*, *Tetraplasandra hawaiiensis*, *Xylosma hawaiiensis*, *Pipturus albidus*, *Coprosma* sp., *Wikstroemia oahuensis*, *Clermontia kakeana*, *Psychotria*, *Sadleria* sp., *Cyrtandra spathulata*, *Touchardia latifolia*, *Freycinetia arborea*, and *Cyanea elliptica*. This habitat is invaded by alien plants such as *Buddleia asiatica*, *Erigeron karvinskianus*, *Coffea arabica*, *Musa* sp., *Oplismenus hirtellus*, *Canna* sp., *Psidium guajava*, and *Rubus rosifolius*.



THREATS:

- Slugs;
- Feral pigs;
- Flooding,
- Competition with alien plant species;
- Rats;
- Leaf damage in the form of stippling and yellowing by the two spotted leafhopper (*Saphonia rufofascia*) has been observed on other native species within the area of *C. glabra* on west Maui and is a potential threat to this species;
- Random environmental events, including landslides, are a threat to this species, with only two populations remaining.

CONSERVATION ACTIONS: The goals of conservation actions are to not only protect current populations, but to also establish further populations to reduce the risk of extinction. The USFWS has developed a 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;
- Establish slug control protocols in the area around the remaining plants.

MONITORING:

- Survey for populations and distribution in known and likely habitats;
- Monitor plants for invertebrate pest damage and 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:

International Union for Conservation of Nature and Natural Resources. 2004. IUCN Red List of Threatened Species: Data Base Search, <http://www.redlist.org/search/search-basic.html>.

Hawai'i Natural Heritage Program. 2005. Hawaii Natural Heritage Program Search, <http://www.hinhp.org/printpage.asp?spp=PDMALOH0A0> [August 2005].

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