



N. Tangalin, NTBG



Plants

Haha

Cyanea procera

SPECIES STATUS:

Federally Listed as Endangered

Genetic Safety Net Species

IUCN Red List Ranking - CR C2a, D

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

Endemism – Moloka'i

Critical Habitat - Designated

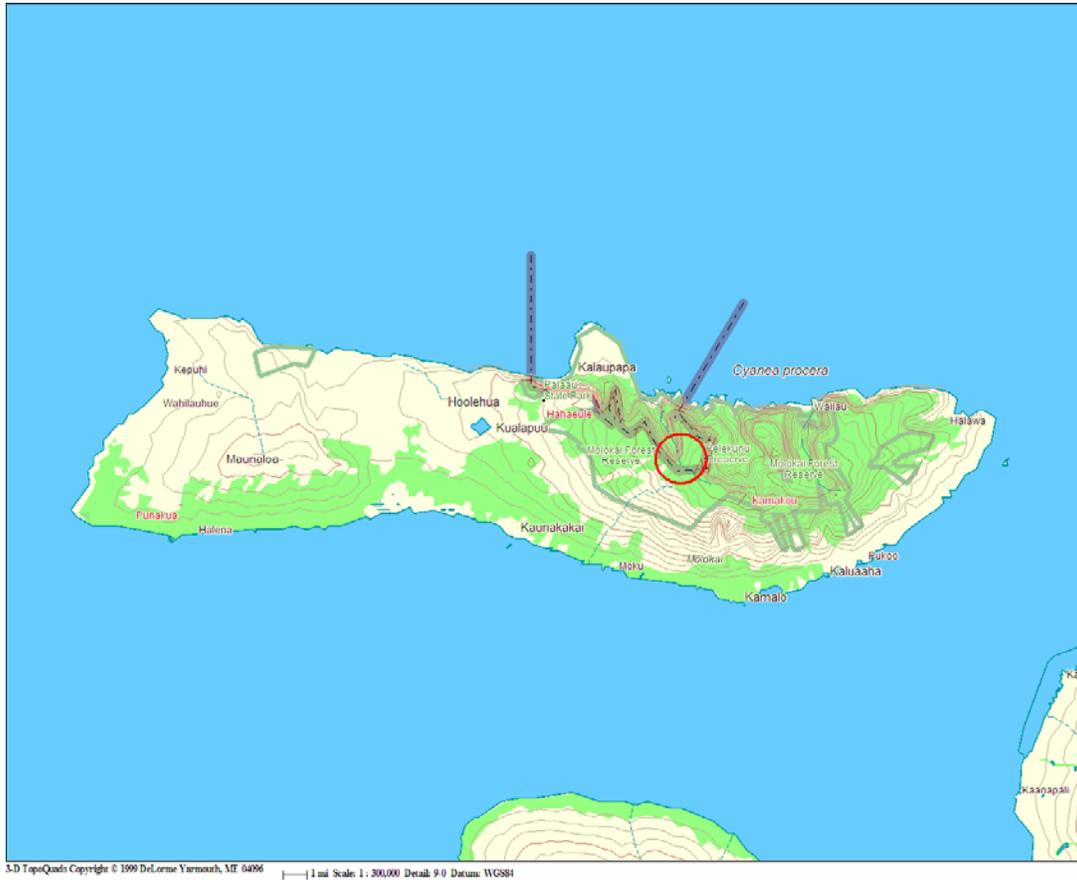
SPECIES INFORMATION: *Cyanea procera*, a member of the bellflower family, is a palmlike tree 10 to 30 ft (3 to 9 m) tall with stalkless, lance-shaped leaves 24 to 30 in (60 to 75 cm) long and 3.9 to 6.7 in (10 to 17 cm) wide with tiny hardened teeth along the margins. Each flower cluster has a stalk 1 to 1.6 in (25 to 40 mm) long and comprises 10 to 20 flowers, each on a stalk 0.2 to 0.4 in (6 to 10 mm) long. Each flower has a hypanthium, 0.6 to 0.8 in (15 to 20 mm) in length and 0.3 to 0.5 in (8 to 13 mm) in width, topped by shallow triangular calyx lobes 0.1 to 0.2 in (3 to 4 mm) long and about 0.2 in (4 to 5 mm) wide. The purplish corolla forms a nearly upright or slightly curved tube 2.4 to 3.1 in (60 to 80 mm) long and 0.2 to 0.4 in (6 to 11 mm) wide, which ends in five downwardly curving lobes which make the flower appear one-lipped. The ellipse- or egg-shaped berries are 1.2 to 1.8 in (3.0 to 4.5 cm) long and 0.8 to 1.1 in (2.0 to 2.8 cm) wide. This species can be distinguished from other species of the genus and from *C. mannii* by its growth habit, its sessile leaves, and the single-lipped appearance of the corolla.

DISTRIBUTION: Historically, *Cyanea procera* was known only from an unspecified site in the Kamalo region of eastern Moloka'i until its discovery in 1987 at Pu'u O Kaeha, west of Kamalo on private land, at an elevation of 3,480 ft (1,060 m), and Waikolu Valley at about 4,000 ft (1,220 m) elevation.

ABUNDANCE: Apparently, only one known plant now exists in the wild. Only one individual was located in 2004 at Kawela Gulch. In 1991, two additional individuals were discovered above a waterfall at Waikolu. The last individual at Hanalilolilo had died as of June 2005.

LOCATION AND CONDITION OF KEY HABITAT: Moloka'i, Kamakou Preserve, West Kawela Gulch; and Pu'u ali'i NAR. The last remaining plant grows on a steep rock wall with thin soil on the southwest slope of a narrow gulch, in a *Metrosideros*-

Dicranopteris Wet Forest. Associated native plant species include various species of *Asplenium*, *Coprosma ochracea* (pilo), *Pipturus albidus* (mamaki), *Touchardia latifolia* (olona), *Sadleria* sp., *Urera glabra*, *Cheirodendron* sp., *Cibotium* sp., *Machaerina* sp., *Cyanea sonenocalyx*, *Clermontia arborescens*, *Cyrtandra* sp., and *Diplazium* sp..



THREATS:

- Landslides, which in this area are likely to be caused by goats ranging above the steep gulch where the plant exists;
- Rats;
- Slugs;
- Competition from alien plant species;
- Vulnerable to extinction from stochastic events;
- Reduced reproductive vigor due to low number of individuals remaining.

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

- Spot fence immediate area above plant to prevent landslides caused by goats currently ranging directly above the steep gulch where the last plant exists;
- 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 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 population to guide future re-introduction and augmentation efforts.

References:

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