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# Plants

## *Cyanea gibsonii*

**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 (G3T1)
Endemism – Lāna'i
Critical Habitat - Designated

**SPECIES INFORMATION**: *Cyanea gibsonii*, a member of the bellflower family (Campanulaceae), is a palm-like tree 3.2 to 23 ft (1 to 7 m) tall. The leaves are elliptic or oblong, about 8 to 31 in (20 to 80 cm) long and 2.5 to 8 in (6.5 to 20 cm) wide; the upper surface usually is smooth, while the lower is covered with fine hairs. The leaf stem often is covered with small prickles throughout its length. The inflorescences are horizontal and clustered among the leaves, each bearing 5 to 15 curved flowers which are blackish-purple externally and white or pale lilac within. The fruit is a yellowish-orange berry about 0.6 to 1.2 in (1.5 to 3 cm) long. The following combination of characters separates this taxon from the other members of the genus on Lāna'i: calyx lobes oblong, narrowly oblong, or ovate in shape; and the calyx and corolla both more than 0.2 in (0.5 cm) wide.

**DISTRIBUTION**: *Cyanea gibsonii* historically is documented from the summit of Lanaihale and the upper parts of Mahana, Kaiholena, and Maunalei valleys of Lana'i Island.

**ABUNDANCE**: It presently is known from upper Kaiholena Valley and Maunalei Valley. The Maunalei population was last seen in the late 1980's and, although its habitat showed signs of disturbance, was the healthiest of the three populations. In 1989, only a single plant could be found at one of the Kaiholena sites. As of 2005, a few plants have been observed at Hauola.

**LOCATION AND CONDITION OF KEY HABITAT**: Wet forests and shrublands in gulch bottoms or in gulches. The habitat of this species has been invaded by kahili ginger (*Hedychium gardnerianuin*).

**THREATS**:

- Competition from alien plant species;
- Browsing by deer;
- Small number of extant individuals with a limited gene pool may depress reproductive vigor;

- Stochastic extinction (i.e. a natural or man-caused environmental disturbance could destroy the only known existing population).

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

Hawai'i Natural Heritage Program. 2005. Hawaii Natural Heritage Program Search, http://www.hinhp.org.

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.

US Fish and Wildlife Service. 1991. Final Listing, Endangered ETWP; Determination of Endangered Status for Six Plants from the Island of Lanai, Hawaii; Federal Register, Vol. 56, No. 183, (20-SEP-91), 56 FR 47686-47695, 10 pp.

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