



## Plants

### *Cyanea pinnatifida*

#### SPECIES STATUS:

Federally Listed as Endangered

Genetic Safety Net Species

IUCN Red List Ranking – Extinct in the Wild (EW)

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

Endemism – O'ahu

Critical Habitat - Designated

**SPECIES INFORMATION:** *Cyanea pinnatifida*, a member of the bellflower family (Campanulaceae), is a shrub, usually unbranched, growing from 2 to 10 ft (0.8 to 3 m) tall. Leaves are 10 to 24 in (25 to 60cm) long by 8 to 20 in (18 to 50 cm) wide and are deeply cut into two to six lobes per side. Clusters of 8 to 15 stalked flowers are borne from the leaf axis. Sepals are fused to form a tube 10 to 12 mm long with small triangular lobes at the tips. The petals are greenish-white with purple stripes and are about 2 in (5 cm) long and 0.2 in (4 to 5 mm) wide. Fruits have not been seen. This species differs from other members of the genus on O'ahu by its leaves, which are deeply cut into two to six lobes per side. The only other member of the genus on O'ahu with lobed leaves has 9 to 12 lobes per side.

**DISTRIBUTION:** Historically known from the central Wai'anae Mountains.

**ABUNDANCE:** Only one plant remains in Kakua'a Gulch on privately-owned land.

**LOCATION AND CONDITION OF KEY HABITAT:** Kakua'a Gulch on privately-owned land. Habitat is steep, wet, rocky slopes in diverse mesic forest at an elevation of 1,800 to 1,700 ft (490 to 520 m). Associated plants include mamaki and ferns. Alien plants that have invaded this habitat include *Clidemia hirta*.

#### THREATS:

- Reduced reproductive vigor due to lack of genetic diversity;
- Competition from an alien plant species;
- Habitat degradation by feral pigs;
- Collection or trampling by humans on or near trails.

**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 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 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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