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## Plants

# Ha'iwale

*Cyrtandra polyantha*

### SPECIES STATUS:

Federally Listed as Endangered

Genetic Safety Net Species

IUCN Red List Ranking - CR B1ab(iii); C2a(i)

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

Endemism – O'ahu

Critical Habitat - Designated

**SPECIES INFORMATION:** *Cyrtandra polyantha*, a member of the African violet family, is an unbranched or few-branched shrub 3 to 10 ft (1 to 3 m) in height. Its leathery, elliptic, unequal leaves are 2 to 6.3 in (5 to 16 cm) long and 0.7 to 2 in (1.8 to 5.2 cm) wide and attached oppositely along the stems. The upper surface of the leaf is conspicuously wrinkled and usually hairless, with the lower surface moderately to densely covered with pale brown hairs. Seven to 12 flowers are grouped in branched clusters in the leaf axils. The white petals, fused to form a cylindrical tube about 0.5 in (12 mm) long, emerge from a radically symmetrical calyx, 0.2 in (5 mm) long, that is cleft from one-half to two-thirds its length. Each calyx lobe, narrowly triangular in shape, is sparsely hairy on the outside and hairless within. The fruits are white oval berries about 0.6 in (1.8 cm) long that contain many seeds about 0.02 in (0.5 mm) long. *Cyrtandra polyantha* is distinguished from other species in the genus by the texture and hairiness of the leaf surfaces and the length, shape, and degree of cleft of the calyx. This species differs from *C. crenata* by the lack of short-stalked glands and by its leathery leaves, opposite leaf arrangement, and radially symmetrical calyx.

**DISTRIBUTION:** Historically, *Cyrtandra polyantha* was known from the Kalihi region and from Kulepiamoa Ridge above Niu Valley on the leeward (southwest) side of the southern Ko'olau Mountains.

**ABUNDANCE:** Two populations, located further south on Kulouou summit ridge and at the northwest head of Hahaione Valley are approximately 1 mi (1.6 km) apart on private and State land. One of the populations has not been visited within the past 50 years. Six plants were reported observed in Kuli'ou'ou in 2005.

**LOCATION AND CONDITION OF KEY HABITAT:** *Cyrtandra polyantha* grows on ridges in *Metrosideros polymorpha* mesic or wet forests at elevations between 331 and 762 m (1,086 and 2,499 ft). *Cyrtandra polyantha* probably grows in association with *Broussaisia*

*arguta*, *Coprosma foliosa* (pilo), *Dicranopteris linearis*, *Machaerina angustifolia*, and *Psychotria* sp. Alien plant species that have invaded this habitat include *Ageratina adenophora*, *Clidemia hirta*, *Erigeron karvinskianus*, and *Melinus minutiflora*.

#### **THREATS:**

- Habitat degradation by feral pigs;
- Fruit predation by rats;
- Competition from alien plant species;
- Stochastic extinction;
- Reduced reproductive vigor due to the small number of remaining individuals.

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

- 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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