



W.L. Wagner©Smithsonian Inst., 2005 Hawai'i Natural Heritage Ranking- Imperiled (G2)

Plants

Silene hawaiiensis

SPECIES STATUS:

Federally Listed as Threatened

Genetic Safety Net Species

Endemism - Island of Hawai'i

Critical Habitat - Designated

SPECIES INFORMATION: A sprawling shrub with 1.5-4 dm-long stems from an enlarged, spindle-shaped root. Leaves are slender. Flowers are greenish white. Genus widely distributed in north temperate regions, especially the Mediterranean region, species endemic to island of Hawai'i.

DISTRIBUTION: Island of Hawai'i; historically found only on the island of Hawai'i from the western slope of Mauna Kea, the Humu'ula Saddle, the northern, western, and northwestern slopes of Mauna Loa, and near Kilauea Crater.

ABUNDANCE: Today, over 50 populations are found in Hamakua District; on Humu'ula Saddle; at Pohakuloa Training Area, including inside MPRC; north of Puu Keanui; and in Hawai'i Volcanoes National Park on private, State, and federal owned land. These populations extend over a distance of approximately 12 by 7 mi (19 by 11 km) and contain over 3,000 individuals. This species typically grows in Montane or Subalpine Dry Shrublands in decomposed lava and ash, but can be found on all ages of lava and cinder substrates, at elevations between 3,000 and 4,300 ft (900 and 1,300 m) and sometimes up to 8,500 ft (2,575 m).

LOCATION AND CONDITION OF KEY HABITAT: Dry forests, shrublands, and grasslands on lava flows and on ash deposits. One occurrence in Hawai'i volcanoes national park. This species typically grows in Montane or Subalpine Dry Shrublands in decomposed lava and ash, but can be found on all ages of lava and cinder substrates at elevations between 900 and 1,300 m (3,000 and 4,300 ft). Associated species include *Dodonaea viscosa* ('a'ali'i), *Styphelia tameiameia* (pukiawe), and *Vaccinium reticulatum* ('ohelo.)

THREATS:

- Competition with exotic grasses and other invasive plant species, particularly fountain grass;
- Volcanic activity;

- Fire;
- Grazing, browsing, and trampling by feral by feral goats, pigs and sheep;
- Disturbance and damage to plants as a result of military exercises.

CONSERVATION ACTIONS: The goals of conservation actions are not only to protect current populations, but also to establish new populations to reduce the risk of extinction. A USFWS recovery plan 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/printpage.asp?spp=PDMAL0H0A0>.

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Wagner, W. L., D. R. Herbst, and D. H. Lorence. 2005-. Flora of the Hawaiian Islands website. <http://ravenel.si.edu/botany/pacificislandbiodiversity/hawaiianflora/index.htm> [August, 2005].