



F. and K .Starr, HEAR

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

## Plants

# Alani

*Melicope adscendens*

### SPECIES STATUS:

Federally Listed as Endangered

Genetic Safety Net Species

Endemism - Maui

Critical Habitat - Designated

**SPECIES INFORMATION:** *Melicope adscendens* is a sprawling shrub with long, slender branches with gray hairs when young and becoming hairless when older. New growth is covered with many fine, yellowish to golden brown hairs. The opposite, widely spaced, leathery to papery, elliptic leaves measure 1.5 to 6.5 cm (0.6 to 2.6 in) long and 1 to 4 cm (0.4 to 1.6 in) wide and have petioles 0.6 to 1.6 cm (0.2 to 0.6 in) long. Both upper and lower surfaces of mature leaves are hairless. Each flower clusters on a main stalk 13 to 17 mm (0.5 to 0.7 in) long and comprises one to three flowers on individual stalks usually 4 to 8 mm (0.2 to 0.3 in) long. Only female flowers have been observed, and each consists of four sepals about 3.5 mm (0.1 in) long, four petals about 5 mm (0.2 in) long, an eight-lobed nectary disk, eight reduced and nonfunctional stamens, and a hairless four-celled ovary. The 14 to 15 mm (0.6 in) wide fruit is made up of 4 distinct follicles (dry fruits splitting along one side) 7 to 7.5 mm (0.3 in) long. Sepals and petals remain attached to the mature fruit. The endocarp and the wrinkled exocarp are both hairless. *Melicope adscendens* is distinguished from other species of the genus by its habit, the distinct follicles of its fruit, and the persistent sepals and petals.

**DISTRIBUTION:** *Melicope adscendens* has been found only on the island of Maui on the southwestern slope of Haleakalā.

**ABUNDANCE:** Two plants, separated by an unspecified distance, were found in 1920. Today, one of these plants is still known to exist on privately owned land; the other plant has not been relocated.

**LOCATION AND CONDITION OF KEY HABITAT:** This species typically grows in Olopuia Lowland Mesic Forest with halapepe as a co-dominant at elevations between 914 and 1,200 m (3,000 and 3,900 ft). Associated taxa include *Chamaesyce celastroides* var. *lorifolia* ('akoko), *Dodonaea viscosa* (a'ali'i), *Pouteria sandwicensis* ('ala'a), and *Styphelia tameiameia* (pukiawe).

### **THREATS:**

- Habitat damage and trampling by cattle;
- Competition with the alien plant species *Lantana camara* (lantana) and *Pennisetum clandestinum* (Kikuyu grass);
- Reduced reproductive vigor and/or extinction from stochastic events due to the existence of only one known population with one individual.

**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. 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:**

Center for Plant Conservation, 2005. National Collection of Endangered Plants. [http://www.centerforplantconservation.org/ASP/CPC\\_NCList\\_Quick.asp](http://www.centerforplantconservation.org/ASP/CPC_NCList_Quick.asp).

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; Federal Register, Vol. 59, No.232, (5-DEC-94), 62347.

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].

Wagner, W.L., Herbst, D.R., and Sohmer, S.H., 1999. Manual of the flowering plants of Hawai'i--  
Revised Edition. Honolulu, HI: University of Hawaii Press and Bishop Museum Press. 1853p.