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Plants

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Melicope zahlbruckneri

SPECIES STATUS:

Federally Listed as Endangered

IUCN Red List Ranking- CR B1+2c, C2ab, D

Genetic Safety Net Species

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

Endemism – Island of Hawai'i

SPECIES INFORMATION: *Melicope zahlbruckneri*, of the citrus family (Rutaceae), is a medium-sized tree 10 to 12 m (33 to 40 ft) tall. New growth is covered with yellowish brown, fine, short, curly hairs. The opposite, stalked, elliptically oblong leaves are 6 to 24 cm (2.4 to 9.5 in) long and 4 to 12.5 cm (1.6 to 4.9 in) wide, with well defined lateral veins. Clusters of two to five flowers have main flowering stalks 15 to 20 cm (5.9 to 7.9 in) long and each flower has a stalk about 0.4 cm (0.2 in) long.

DISTRIBUTION: Kipuka Puaulu, Moa'ula, and near Glenwood, Island of Hawai'i.

ABUNDANCE: Currently there are 30-35 plants known.

LOCATION AND CONDITION OF KEY HABITAT: Mesic and wet forests on old volcanic ash deposits and lava flows. Today, the species is known to be extant only in Kipuka Puaulu, on land owned by Hawai'i Volcanoes NP.

THREATS:

- Damage from two-spotted leafhopper;
- 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 not only to protect current populations, but also to establish new populations to reduce the risk of extinction. 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=PDMALOH0A0>.

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>.

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.