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Plants

Ko'oko'olau

Bidens hillebrandiana subsp. *hillebrandiana*

SPECIES STATUS:

Genetic Safety Net Species

IUCN Red List Ranking – Critically Endangered (CR D)

Hawai'i Natural Heritage Ranking -

Subspecies Critically Imperiled (G3T1)

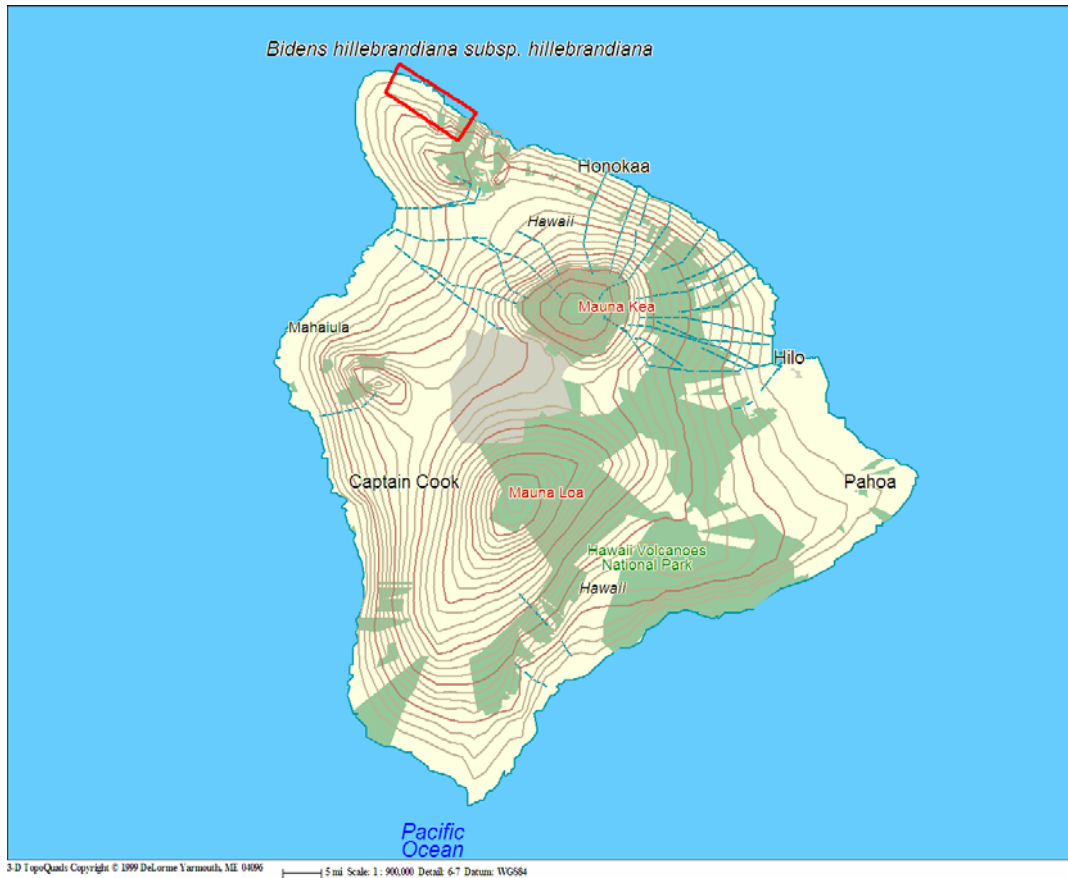
Endemism - Island of Hawai'i

SPECIES INFORMATION: *Bidens hillebrandiana* subsp. *hillebrandiana*, a member of the sunflower family (Asteraceae), is an erect or usually decumbent, slightly suffrutescent perennial herb 0.2 - 0.3 m tall. Leaves rarely simple, usually pinnately or bipinnately compound, usually 3.5 - 8 cm long including petiole, leaflets 3 - 9, fleshy, ovate, usually 5 -25 mm long, 2 - 15 mm wide, glabrous or sparsely pubescent, margins crenately toothed or lobed. Heads solitary or 1-3, sometimes 4, per inflorescence on peduncles 2 - 8.5 cm long in simple or compound cymes terminating main stem and lateral branches, 1.4 - 2.4 cm in diameter including ray florets, peduncles 0.2 - 8.5 cm long, glabrous or sparsely pubescent; outer involucral bracts 2 - 3 mm long, the inner ones distinct, short, often not covering flower buds; ray florets 5 - 6 per head, sterile, rays yellow, 9 - 12 mm long, 3 - 4 mm wide; disk florets 11 - 21 per head, perfect, corollas yellow; pappus of 2 awns 1 - 2 mm long. Achenes gray to grayish black, straight, wingless, 6 - 8 mm long, 0.8 - 1.2 mm wide, setose.

DISTRIBUTION: *Bidens hillebrandiana* subsp. *hillebrandiana* is endemic to the island of Hawai'i. It is known only from the windward eastern coast of Kohala near the northern tip of the island.

ABUNDANCE: The Kohala occurrence at Polulu is limited to approximately 30 plants. There are scattered occurrences along this stretch of coastline, totaling perhaps another 50-70 plants.

LOCATION AND CONDITION OF KEY HABITAT: Kohala Forest Reserve, on coastal dry shrublands located on coastal bluffs and sea cliffs. The habitat is invaded by a large number of non-native plant species.



THREATS:

- Competition from invasive alien plants.

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 full founder representation;
- Augment wild population and establish new populations in safe harbors.

MONITORING:

- Survey for populations and distribution in known and likely habitats;
- Monitor plants for insect damage and plant diseases.

RESEARCH PRIORITIES:

- Develop proper horticultural protocols and pest management;
- Conduct pollination biology and seed dispersal studies;

- Map genetic diversity in the surviving populations and identify conservation management units;
- Survey *ex-situ* holdings and conduct molecular fingerprinting.

References:

Hawai'i Natural Heritage Program, 2005. Hawaii Natural Heritage Program Search, <http://www.hinhp.org/printpage.asp?spp=PDMAL0H0A0>.

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>.

NTBG. 1991. Steve Perlman Field Data Book #41, SP 17436. Unpublished Data.

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.