

CANDIDATE ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: *Bidens campylotheca* ssp. *waihoiensis*

COMMON NAME: Ko`oko`olau

LEAD REGION: Region 1

INFORMATION CURRENT AS OF: February 2003

STATUS/ACTION (Check all that apply):

New candidate

Continuing candidate

Non-petitioned

Petitioned - Date petition received: \_\_\_\_

90-day positive - FR date: \_\_\_\_

12-month warranted but precluded - FR date: \_\_\_\_

Is the petition requesting a reclassification of a listed species?

Listing priority change

Former LP: \_\_\_\_

New LP: \_\_\_\_

Latest date species first became a Candidate: 21-FEB-90

Candidate removal: Former LP: \_\_\_\_ (Check only one reason)

A - Taxon more abundant or widespread than previously believed or not subject to a degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.

F - Range is no longer a U.S. territory.

M - Taxon mistakenly included in past notice of review.

N - Taxon may not meet the Act's definition of "species."

X - Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Plant, Asteraceae

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Hawaii, island of Maui

CURRENT STATES/COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE: Hawaii, island of Maui

LEAD REGION CONTACT (Name, phone number): Scott McCarthy, 503-231-6131

LEAD FIELD OFFICE CONTACT (Office, name, phone number): Pacific Islands (Ecological Services), Christa Russell, 808-541-3441

BIOLOGICAL INFORMATION (Describe habitat, historic vs. current range, historic vs. current population estimates (# populations, #individuals/population), etc.):

This subspecies is known from one population of 200 individuals. Typical habitat is wet forest. This subspecies is restricted to the island of Maui (Arthur C. Medieros III, National Biological Service, and Robert Hobdy of the Hawaii Division of Forestry and Wildlife, pers. comm., 1995).

THREATS (Describe threats in terms of the five factors in section 4 of the ESA providing specific, substantive information. If this is a removal of a species from candidate status or a change in listing priority, explain reasons for change):

A. The present or threatened destruction, modification, or curtailment of its habitat or range.  
This subspecies is imminently and highly threatened by cattle that adversely modify habitat (A. Medieros III and R. Hobdy, pers. comm., 1995).

As early as 1778, European explorers introduced livestock, which became feral, increased in number and range, and caused significant changes to the natural environment of Hawaii. Past and present activities of introduced alien mammals are the primary factors in altering and degrading vegetation and habitats on the Hawaiian islands. Feral ungulates trample and eat native vegetation and disturb and open areas. This causes erosion and allows the entry of alien plant taxa (Cuddihy and Stone 1990; Wagner *et al.* 1990). Cattle (*Bos taurus*), the wild progenitor of which was native to Europe, northern Africa, and southwestern Asia, were introduced to the Hawaiian Islands in 1793. Large feral herds developed as a result of restrictions on killing cattle decreed by King Kamehameha I. While small cattle ranches were developed on Kauai, Oahu, and West Maui, very large ranches of tens of thousands of acres were created on East Maui and Hawaii. Much of the land used in these private enterprises was leased from the State or was privately owned and considered Forest Reserve and/or Conservation District land. Hunting of feral cattle is no longer allowed in Hawaii (Hawaii Department of Land and Natural Resources 1985). Cattle eat native vegetation, trample roots and seedlings, cause erosion, create disturbed areas into which alien plants invade, and spread seeds of alien plants in their feces and on their bodies. The forest in areas grazed by cattle becomes degraded to grassland pasture, and plant cover is reduced for many years following removal of cattle from an area. Several alien grasses and legumes purposely introduced for cattle forage have become noxious weeds (Cuddihy and Stone 1990; Tomich 1986), which are invasive, out-competing and replacing native plants.

B. Overutilization for commercial, recreational, scientific, or educational purposes.

None known.

C. Disease or predation.

Disease is not known to be a significant threat. This subspecies is threatened by cattle that browse the leaves of plants. See factor "A" above.

D. The inadequacy of existing regulatory mechanisms.

There currently is no Federal or State protection for this plant.

E. Other natural or manmade factors affecting its continued existence.

With only one remaining population of about 200 individuals, reduced reproductive vigor and extinction due to naturally occurring, random (stochastic) events such as hurricanes, landslides, or floods are major threats (A. Medieros III and R. Hobdy, pers. comm., 1995).

FOR RECYCLED PETITIONS:

- a. Is listing still warranted? \_\_\_\_
- b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? \_\_\_\_
- c. Is a proposal to list the species as threatened or endangered in preparation? \_\_\_\_
- d. If the answer to c. above is no, provide an explanation of why the action is still precluded.

LAND OWNERSHIP (Estimate proportion Federal/state/local government/private, identify non-private owners): State of Hawaii.

PRELISTING (Describe status of conservation agreements or other conservation activities): None.

REFERENCES (Identify primary sources of information (e.g., status reports, petitions, journal publications, unpublished data from species experts) using formal citation format):

The information in this form is based on the results of a meeting of 20 botanical experts held by the Center for Plant Conservation in December of 1995 and 1999 and updated from information through personal communication with Arthur C. Medieros III of National Biological Service, and Robert Hobdy of the Hawaii Division of Forestry and Wildlife. Based on the IUCN Red Plant Data Book rarity categories, this subspecies is recognized as Rare (could be considered at risk) by Wagner, Herbst, and Sohmer in the 1990 Manual of Flowering Plants of Hawai`I.

Cuddihy, L.W., and C.P. Stone. 1990. Alteration of native Hawaiian vegetation; effects of humans, their activities and introductions. Coop. Natl. Park Resources Stud. Unit, Hawaii. 138 pp.

Hawaii, Department of Land and Natural Resources. 1985. Hunting in Hawaii, fourth revision. Division of Forestry and Wildlife, Honolulu, 32 pp.

St. John, H., K.M. Nagata, and F.R. Ganders. 1983. A New Subspecies of *Bidens* (Asteraceae) from Maui. *Lyonia*, 2:2. 5 pp.

Stone, C.P. 1985. Alien animals in Hawai`I's native ecosystems: toward controlling the adverse effects of introduced vertebrates: in Stone, C.P., and J.M. Scott (eds.), *Hawai`i's terrestrial ecosystems: preservation and management*. Coop. Natl. Park Resources Stud. Unit, Univ. Hawaii, Honolulu, pp. 251-197.

Tomich, P.Q. 1986. *Mammals in Hawai`I; a synopsis and notational bibliography*. Bishop Museum Press, Honolulu. 375 pp.

Wagner, W.L., D.R. Herbst, and S.H. Sohmer. 1990. Manual of the flowering plants of Hawai`i. University of Hawaii Press and Bishop Museum Press, Honolulu. Bishop Mus. Spec. Publ. 83:1-1853.

LISTING PRIORITY (\* after number)

THREAT
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Magnitude	Immediacy	Taxonomy	Priority
High	Imminent	Monotypic genus	1
		Species	2
		Subspecies/population	3 *
	Non-imminent	Monotypic genus	4
		Species	5
		Subspecies/population	6
Moderate to Low	Imminent	Monotypic genus	7
		Species	8
		Subspecies/population	9
	Non-imminent	Monotypic genus	10
		Species	11
		Subspecies/population	12

**Rationale for listing priority number:**

*Magnitude:*

*Imminence:*

APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes to the candidate list, including listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all additions of species to the candidate list, removal of candidates, and listing priority changes.

Approve: Rowan Gould March 6, 2003  
Regional Director, Fish and Wildlife Service Date

Concur: \_\_\_\_\_  
Director, Fish and Wildlife Service Date

Do not concur: \_\_\_\_\_  
Director, Fish and Wildlife Service Date

Director's Remarks:

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Date of annual review: 2/03

Conducted by: \_\_\_\_\_

Comments:

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