

TABLE 1.—SUMMARY OF ISLAND DISTRIBUTION OF 51 SPECIES FROM MOLOKAI—Continued

Species (common name)	Island distribution						
	Kauai	Oahu	Molokai	Lanai	Maui	Hawaii	N.W. Isles, Kahoolawe, Niihau
<i>Schiedea nuttallii</i> (No common name)	C	C	C	R	Ni (H), Ka (C), NW Isles (C)
<i>Schiedea sarmentosa</i> (No common name) .....	.....	.....	C	.....	.....	.....
<i>Sesbania, tomentosa</i> (ohai)	C	C	C	H	C	C	
<i>Silene alexandri</i> (No common name)	H	C
<i>Silene lanceolata</i> (No common name)	H	C	C	H	.....	C
<i>Solanum incompletum</i> (popolo ku mai)	H	.....	H	.....	H	H
<i>Spermolepis hawaiiensis</i> (No common name) ..	C	C	C	C	C	C	
<i>Stenogyne bifida</i> (No common name) .....	.....	.....	C	.....	.....	.....
<i>Tetramolopium rockii</i> (No common name) .....	.....	.....	C	.....	.....	.....
<i>Vigna o-wahuensis</i> (No common name)	H	C	C	C	C	Ni (H), Ka (C)
<i>Zanthoxylum hawaiiense</i> (ae)	C	.....	C	H	C	C

KEY: C (Current)—population last observed within the past 30 years. H (Historical)—population not seen for more than 30 years. R (Reported)—reported from undocumented observations.

Sixteen of these species are endemic to the island of Molokai, while 35 species are reported from Molokai and one or more other Hawaiian islands. Each of these species is described in more detail below in the section "Discussion of Plant Taxa." Although we considered designating critical habitat on Molokai for each of the 51 plant species, for the reasons described below, the final designation includes critical habitat for 41 of 51 plant species. Species that also occur on other Hawaiian islands may have critical habitat designated on those other islands in subsequent rulemakings.

The Island of Molokai

The island of Molokai, the fifth largest in the Hawaiian Islands chain, is approximately 61 kilometers (km) (38 miles (mi)) long, up to 17 km (10 mi) wide, and encompasses an area of about 688 square (sq) km (266 sq mi). Three shield volcanoes make up most of the land mass of Molokai: West Molokai Mountain, East Molokai Mountain, and a volcano that formed Kalaupapa Peninsula.

The taller and larger East Molokai Mountain rises 1,813 meters (m) (4,970 feet (ft)) above sea level and comprises roughly 50 percent of the island's area. Topographically, the windward (north) side of East Molokai differs from the leeward (south) side. Precipitous cliffs line the windward coast and deep valleys dissect the coastal area. The annual rainfall on the windward side is 200 to over 375 centimeters (cm) (75 to over 150 inches (in)), distributed throughout the year. The soils are poorly drained and high in organic matter. The gulches and valleys are usually very steep, but sometimes gently sloping. Much of the native vegetation

on windward East Molokai is intact because of its relative inaccessibility to humans and animals, although destructive ungulates have begun to enter the area in recent years.

Discussion of Plant Taxa

Species Endemic to Molokai

Bidens wiebkei (kookoolau)

Bidens wiebkei, a member of the aster family (Asteraceae), is a short-lived perennial herb, which is somewhat woody at the base and grows from 0.5 to 1 m (1.6 to 3.3 ft) tall with opposite, pinnately compound leaves. This plant is distinguished from other *Bidens* species that grow on Molokai by its erect habit and the curved or twisted, winged achenes (Ganders and Nagata 1999, 57 FR 46325).

This species has been observed in flower during May. Little else is known about the life history of *Bidens wiebkei*. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown. (Hawaii Natural Heritage Program (HINHP) Database 2000, United States Fish and Wildlife Service (Service) 1996a).

Historically, *Bidens wiebkei* was known from Pelekunu and the easternmost section of Molokai at Halawa. It is found currently in Halawaiki Gulch, Lamaloa Gulch, and below Puu Kolekole on private lands. There are a total of 5 occurrences containing more than 200 individuals (Geographic Decision Systems International (GDSI) 2000, HINHP Database 2000).

The currently known populations of *Bidens wiebkei* are scattered along slopes in *Metrosideros polymorpha* (ohia) dominated mesic shrublands or

dry or mesic *Metrosideros polymorpha*-*Leptechophylla tameiameia* (pukiawe) lowland shrubland between 8 and 1,205 m (26 and 3,952 ft) in elevation. Other associated plant species include *Antidesma platyphyllum* (hame), *Dodonaea viscosa* (aalii), *Lysimachia* sp. (kolokolo kuahiwi), *Nestegis sandwicensis* (olopua), *Phyllanthus distichus* (pamakani mahu), *Pisonia* sp. (papala kepau), *Psydrax odorata* (alahee), or *Scaevola gaudichaudii* (naupaka kuahiwi) (Gagne and Cuddihy 1999, Ganders and Nagata 1999, HINHP Database 2000).

The major threats to *Bidens wiebkei* include habitat degradation and possible predation by axis deer (*Axis axis*) and feral goats (*Capra hircus*); competition with nonnative plants, such as *Melinis minutiflora* (molasses grass) and *Schinus terebinthifolius* (Christmas berry); fire; and damage by humans of those plants found along trails (HINHP Database 2000, 57 FR 46325).

Canavalia molokaiensis (awikiwiki)

Canavalia molokaiensis, a member of the legume family (Fabaceae), is a short-lived perennial climbing herb with twining branches and leaves made up of three lance-shaped or sometimes oval leaflets. The only species of this genus found on Molokai, this plant can be distinguished from others in the genus by its more narrow leaflets and its larger, rose-purple flowers (Wagner and Herbst 1999, 57 FR 46325).

This species has been observed in flower during May and December. Fruits and flowers were observed in March. Little else is known about the life history of *Canavalia molokaiensis*. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and