DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AH08

Endangered and Threatened Wildlife and Plants; Revised Determinations of Prudency and Proposed Designations of Critical Habitat for Plant Species From the Island of Molokai, Hawaii

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Revised proposed rule and notice of determinations of whether designation of critical habitat is prudent.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose critical habitat for 46 of the 51 listed plant species known historically from the island of Molokai that are listed under the Endangered Species Act of 1973, as amended. Critical habitat is not proposed for 4 species as they no longer occur on the island of Molokai, and we are unable to identify any habitat essential to their conservation on the island of Molokai. Critical habitat is not proposed for one species of loulu palm, *Pritchardia munroi,* for which we determined, in a previous proposal, that critical habitat designation is not prudent because it would likely increase the threats from vandalism or collection of this species on Molokai.

We propose critical habitat designations for 46 species within 10 critical habitat units totaling approximately 17,614 hectares (ha) (43,532 acres (ac)) on the island of Molokai.

If this proposal is made final, section 7 of the Act requires Federal agencies to ensure that actions they carry out, fund, or authorize do not destroy or adversely modify critical habitat to the extent that the action appreciably diminishes the value of the critical habitat for the survival and recovery of the species. Section 4 of the Act requires us to consider economic and other relevant impacts of specifying any particular area as critical habitat.

We solicit data and comments from the public on all aspects of this proposal, including data on the economic and other impacts of the designations. We may revise or further refine this rule, including critical habitat boundaries, prior to final designation based on habitat and plant surveys, public comment on the revised proposed critical habitat rule, and new scientific and commercial information.

DATES: We will accept comments until June 4, 2002. Public hearing requests must be received by May 20, 2002.

ADDRESSES: If you wish to comment, you may submit your comments and materials concerning this proposal by any one of several methods:

You may submit written comments and information to the Field Supervisor, U.S. Fish and Wildlife Service, Pacific Islands Office, 300 Ala Moana Blvd., Room 3–122, P.O. Box 50088, Honolulu, HI 96850–0001.

You may hand-deliver written comments to our Pacific Islands Office at the address given above.

You may view comments and materials received, as well as supporting documentation used in the preparation of this proposed rule, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Paul Henson, Field Supervisor, Pacific Islands Office (see **ADDRESSES** section) (telephone 808/541–3441; facsimile 808/541–3470).

SUPPLEMENTARY INFORMATION:

Background

In the Lists of Endangered and Threatened Plants (50 CFR 17.12), there are 51 plant species that, at the time of listing, were reported from the island of Molokai (Table 1). Sixteen of these species are endemic to the island of Molokai, while 35 species are reported from one or more other islands, as well as Molokai.

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

Species (Common Name)	Island Distribution						
	Kauai	Oahu	Molokai	Lanai	Maui	Hawaii	N.W. Isles, Kahoolawe Niihau
Adenophorus periens (pendant kihi fern)	C	H	C	R	R	C	
Alectryon macrococcus (mahoe)	C	C	C		C		
Bidens wiebkei (ko oko olau)			C				
Bonamia menziesii (No common name)	C	C	H	C	C	C	
Brighamia rockii (pua ala)			C	H	H		
Canavalia molokaiensis (awikiwiki)			C				
Centaurium sebaeoides (awiwi)	C	C	C	C	C		
Clermontia oblongifolia ssp. *brevipes* (oha wai)			C				
Ctenitis squamigera (pauoa)	H	C	C	C	C	H	
Cyanea dunbarii (haha)			C				
Cyanea grimesiana ssp. *grimesiana* (haha)		C	C	C	C		
Cyanea mannii (haha)			C				
Cyanea procera (haha)			C				
Cyperus trachysanthos (pu uka a)	C	C	H	H			Ni (C)
Diellia erecta (Asplenium-leaved Diellia)	C	C	C	H	C	C	
Diplazium molokaiense (No common name)	H	H	H	H	C		
Eugenia koolauensis (nioi)		C	H				
Flueggea neowawraea (mehamehame)	C	C	H		C	C	
Hedyotis mannii (pilo)			C	C	C		
Hesperomannia arborescens (No common name)		C	C	H	C		
Hibiscus arnottianus ssp. *immaculatus* (kokio ke okeo)			C				
Hibiscus brackenridgei (mao hau hele)	H	C	H	C	C	C	Ka (R)

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
Ischaemum byrone (Hilo ischaemum)	R		C		C	C	
Isodendrion pyrifolium (wahine noho kula)	H	H	H	H	H	C	Ni (H)
Labordia triflora (kamakahala)			C				
Lysimachia maxima (No common name)			C				
Mariscus fauriei (No common name)			C	H		C	
Marsilea villosa (ihi ihi)		C	C				Ni (H)
Melicope mucronulata (alani)			C		C		
Melicope munroi (alani)			H	C			
Melicope reflexa (alani)			C				
Neraudia sericea (No common name)			C	H	C		Ka (H)
Peucedanum sandwicense (makou)	C	C	C		C		
Phyllostegia mannii (No common name)			C		H		
Phyllostegia mollis (No common name)		C	H		C		
Plantago princeps (laukahi kuahiwi)	C	C	C		C	H	
Platanthera holochila (No common name)	C	H	C		C		
Pritchardia munroi (loulu)			C				
Pteris lidgatei (No common name)		C	H		C		
Schiedea lydgatei (No common name)			C				
Schiedea nuttallii (No common name)	C	C	C		R		
Schiedea sarmentosa (No common name)			C				
Sesbania tomentosa (ohai)	C	C	C	H	C	C	Ni (H), Ka (C), NW Isles (C)
Silene alexandri (No common name)			H				
Silene lanceolata (No common name)	H	C	C	H		C	
Solanum incompletum (popolo ku mai)	H		H	H	H	C	
Spermolepis hawaiiensis (No common name)	C	C	C	C	C	C	
Stenogyne bifida (No common name)			C				
Tetramolopium rockii (No common name)			C				
Vigna o-wahuensis (No common name)		H	C	C	C	C	Ni (H), Ka (C)
Zanthoxylum hawaiiense (a e)	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.

In previously published proposals we determined that critical habitat was prudent for 47 (*Adenophorus periens, Alectryon macrococcus, Bidens wiebkei, Brighamia rockii, Canavalia molokaiensis, Centaurium sebaeoides, Clermontia oblongifolia ssp. brevipes, Ctenitis squamigera, Cyanea dunbarii, Cyanea grimesiana ssp. grimesiana, Cyanea mannii, Cyanea procera, Diellia erecta, Diplazium molokaiense, Flueggea neowawraea, Hedyotis mannii, Hesperomannia arborescens, Hibiscus arnottianus ssp. immaculatus, Hibiscus brackenridgei, Ischaemum byrone, Labordia triflora, Lysimachia maxima, Mariscus fauriei, Marsilea villosa, Melicope mucronulata, Melicope reflexa, Neraudia sericea, Peucedanum sandwicense, Phyllostegia mannii, Phyllostegia mollis, Plantago princeps, Platanthera holochila, Pteris lidgatei,* Schiedea *lydgatei, Schiedea nuttallii, Schiedea sarmentosa, Sesbania tomentosa, Silene alexandri, Silene lanceolata, Spermolepis hawaiiensis, Stenogyne bifida, Tetramolopium rockii, Vigna o-wahuensis,* and *Zanthoxylum hawaiiense)* of the 51 species reported from Molokai. No change is made to the 47 prudency determinations in this revised proposal and they are hereby incorporated into this proposal (or reproposal) (65 FR 66808, 65 FR 79192, 65 FR 82086, 65 FR 83158, 67 FR 3940, 67 FR 9806). In addition, at the time we listed *Labordia triflora* and *Melicope munroi* we determined that the designation of critical habitat was prudent for these two taxa from Molokai (64 FR 48307).

In the December 29, 2000, proposal we determined that the designation of critical habitat was not prudent for *Pritchardia munroi* because it would likely increase the threats from vandalism or collection of this species on Molokai, and we did not propose critical habitat for this species. No change is made to that determination here.

In this proposal, we determine that designation of critical habitat is prudent for *Eugenia koolauensis,* a species for which a prudency determination has not been made previously.

In the December 29, 2000, proposal we proposed designation of critical habitat for 32 (*Adenophorus periens, Alectryon macrococcus, Bidens wiebkei, Brighamia rockii, Canavalia molokaiensis, Centaurium sebaeoides, Clermontia oblongifolia ssp. brevipes, Ctenitis squamigera, Cyanea dunbarii, Cyanea grimesiana ssp. grimesiana, Cyanea mannii, Cyanea procera, Diellia*

erecta, Hesperomannia arborescens, Hibiscus arnottianus ssp. immaculatus, Ischaemum byrone, Labordia triflora, Mariscus fauriei, Marsilea villosa, Melicope mucronulata, Melicope reflexa, Neraudia sericea, Peucedanum sandwicense, Schiedea lydgatei, Schiedea sarmentosa, Sesbania tomentosa, Silene alexandri, Silene lanceolata, Spermolepis hawaiiensis, Stenogyne bifida, Tetramolopium rockii, Vigna o-wahuensis, and Zanthoxylum hawaiiense) of the 51 plants reported from Molokai. Critical habitat was not proposed for *Pritchardia munroi* for the reasons given above. Critical habitat was not proposed for 11 species (*Bonamia menziesii, Cyperus trachysanthos, Diplazium molokaiense, Eugenia koolauensis, Flueggea neowawraea, Hibiscus brackenridgei, Isodendrion pyrifolium, Melicope munroi, Phyllostegia mollis, Pteris lidgatei,* and *Solanum incompletum*) that no longer occur on Molokai and for which we were unable to identify any habitat that is essential to their conservation on the island. Critical habitat was not proposed for seven species (*Adenophorus periens, Hedyotis manni, Lysimachia maxima, Phyllostegia mannii, Plantago princeps, Platanthera holochila,* and *Schiedea nuttallii*) found only in areas that did not require special management or protection because the areas were already protected and managed to the benefit of the seven species.

In this proposal, we propose designation of critical habitat for 46 of the 51 species reported from Molokai: *Adenophorus periens, Alectryon macrococcus, Bidens wiebkei, Brighamia rockii, Canavalia molokaiensis, Centaurium sebaeoides, Clermontia oblongifolia ssp. brevipes, Ctenitis squamigera, Cyanea dunbarii, Cyanea grimesiana ssp. grimesiana, Cyanea mannii, Cyanea procera, Diellia erecta, Diplazium molokaiense, Eugenia koolauensis, Flueggea neowawraea, Hedyotis mannii, Hesperomannia arborescens, Hibiscus arnottianus ssp. immaculatus, Hibiscus brackenridgei, Ischaemum byrone, Isodendrion pyrifolium, Labordia triflora, Lysimachia maxima, Mariscus fauriei, Marsilea villosa, Melicope mucronulata, Melicope reflexa, Neraudia sericea, Peucedanum sandwicense, Phyllostegia mannii, Phyllostegia mollis, Plantago princeps, Platanthera holochila, Pteris lidgatei, Schiedea lydgatei, Schiedea nuttallii, Schiedea sarmentosa, Sesbania tomentosa, Silene alexandri, Silene lanceolata, Spermolepis hawaiiensis, Stenogyne bifida, Tetramolopium rockii, Vigna o-wahuensis,* and *Zanthoxylum hawaiiense,* based on new information and information received during the comment periods on the December 29, 2000, proposal. Critical habitat is not proposed for 4 (*Bonamia menziesii, Cyperus trachysanthos, Melicope munroi,* and *Solanum incompletum*) of the 51 species on the island of Molokai because these plants no longer occur on the island of Molokai and we are unable to identify habitat essential to their conservation on this island. However, proposed critical habitat designations, or non-designations, for these species will be included in other future Hawaiian plants proposed critical habitat rules (Table 2).

We propose critical habitat designations for 46 species within 10 critical habitat units totaling approximately 17,614 ha (43,532 ac) on the island of Molokai. Areas proposed as critical habitat are occupied by at least one species and some areas include some unoccupied habitat for one or more species.

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) (57 FR 46325). 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 (57 FR 46325).

TABLE 2.—LIST OF PROPOSED RULES IN WHICH CRITICAL HABITAT DESIGNATIONS WILL BE MADE FOR FOUR SPECIES FOR WHICH WE ARE UNABLE TO DETERMINE HABITAT WHICH IS ESSENTIAL FOR THEIR CONSERVATION ON THE ISLAND OF MOLOKAI

Species	Proposed rule in which prudency will be determined	Proposed rules in which critical habitat designations have been or will be proposed
Bonamia menziesii	Kauai and Niihau (65 FR 66808)	Kauai and Niihau (65 FR 66808), (67 FR 3940); Maui and Kahoolawe (65 FR 79192), (see also **Federal Register** of April 3, 2002); Lanai (65 FR 82086), (67 FR 9806); *Hawaii* (to be published in the **Federal Register** in May 2002); *Oahu* (to be published in the **Federal Register** in May 2002).
Cyperus trachysanthos	Kauai and Niihau (65 FR 66808)	Kauai and Niihau (65 FR 66808), (67 FR 3940); Lanai (65 FR 82086), (67 FR 9806); *Oahu* (to be published in the **Federal Register** in May 2002).
Melicope munroi	10 Mau Nui Plants (64 FR 48307)	Lanai (65 FR 82086), (67 FR 9806).
Solanum incompletum	Kauai and Niihau (67 FR 3940)	Kauai and Niihau (67 FR 3940); *Hawaii* (to be published in the **Federal Register** in May 2002).

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 (57 FR 46325). 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 (57 FR 46325). Much of the native vegetation on the 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 (57 FR 46325).

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 (57 FR 46325; Ganders and Nagata 1999).

This species was observed in flower during May. No additional life history information is currently available (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 three populations 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-Styphelia tameiameiae* (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), *Psydrax odorata* (alahee), *Lysimachia* sp. (kolokolo kuahiwi), *Nestegis sandwicensis* (olopua), *Phyllanthus distichus* (pamakani-mahu), *Pisonia* sp. (papala kepau), or *Scaevola gaudichaudii* (naupaka kuahiwi) (Gagne and Cuddihy 1999; HINHP Database 2000; Ganders and Nagata 1999).

The major threats to *Bidens wiebkei* on Molokai, include habitat degradation and possible predation by axis deer (*Axis axis*) and feral goats (*Capra hircus*); competition with non-native plants, such as *Melinus 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 with 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 (57 FR 46325; Wagner and Herbst 1999).

This species has been observed in flower during May and December. Fruits and flowers were observed in March. No additional life history information is currently available (Service 1996a; HINHP Database 2000).

Historically, *Canavalia molokaiensis* was known from East Molokai at Kalaupapa, Pelekunu, and farther south in Kahuaawi Gulch, and the region of Manawai. It now has a more restricted range, from Kalaupapa to Waialeia, Kaunakakai, Pelekunu, and Kamakou. There are a total of five populations containing more than 50 plants on State lands, including lands managed by the National Park Service at Kalaupapa National Historical Park, and privately owned lands (GDSI 2000; HINHP Database 2000).

Canavalia molokaiensis typically grows in exposed sites, both dry and mesic, on steep slopes in *Metrosideros polymorpha-Dodonaea viscosa* lowland shrubland and mesic shrublands between 271 and 1,140 m (889 and 3,739 ft) in elevation. Associated plant species include *Artemisia* sp. (hinahina), *Chamaesyce* sp. (akoko), *Coprosma* sp. (pilo), *Styphelia tameiameiae*, or *Wikstroemia* sp. (akia) (HINHP Database 2000).

The threats to this species on Molokai include habitat degradation by feral ungulates, such as feral goats and pigs (*Sus scrofa*), possible predation by feral goats, and competition with non-native plants, such as *Melinis minutiflora* (Service 1996a).

Clermontia oblongifolia ssp. *brevipes (oha wai)*

Clermontia oblongifolia ssp. *brevipes*, a member of the bellflower family (Campanulaceae), is a short-lived perennial shrub or tree that reaches a height of 2 to 7 m (6.6 to 23 ft). This species is distinguished from others in the genus by the structure of its calyx and corolla as well as by the lengths of the flower, the floral lobes, and the green hypanthium (an enlargement of the floral receptacle bearing on its rim the reproductive organs and often enlarging and surrounding the fruits). This subspecies differs from others of the species by the shape and length of its leaves, leaf stalks, and flower stalks (Lammers 1988, 1999).

No life history information for this species is currently available (Service 1996a).

Clermontia oblongifolia ssp. *brevipes* is known from three populations of five individuals on the privately owned land of the Nature Conservancy of Hawaii's (TNCH) Kamakou Preserve. The historical range of this subspecies is not known (HINHP Database 2000; Service 1996a; Joel Lau, Hawaii Natural Heritage Program (HINHP), *in litt.* 2000).

Clermontia oblongifolia ssp. *brevipes* occurs in shallow soil on gulch slopes in the wet *Metrosideros polymorpha*-dominated forests between 776 and 1,508 m (2,545 and 4,946 ft) in elevation. Associated plant species include *Cheirodendron trigynum* (olapa), *Cibotium* spp. (hapuu), *Broussaisia argutus* (kanawao), *Hedyotis terminalis* (manono), or *Melicope* sp. (alani) (HINHP Database 2000; Joel Lau, HINHP, *in litt.* 2000).

The threats to this species on Molokai are habitat degradation by feral pigs; possible predation on the fruit or plant parts by rats (*Rattus rattus*), as evidence on related species suggests; and random naturally occurring events that may cause the extinction of the entire taxon due to its single population and very low number of individuals (Service 1996a; 57 FR 46325).

Cyanea dunbarii (haha)

Cyanea dunbarii, a member of the bellflower family (Campanulaceae), is a short-lived perennial, branched shrub 1.5 to 2 m (4.9 to 6.6 ft) tall with oval to broadly elliptic leaves that have irregularly lobed or cleft margins. This species is distinguished from others in this endemic Hawaiian genus by the lack of prickles on the stems and the irregularly lobed and cleft leaf margins (Lammers 1999).

Cyanea dunbarii was observed in flower, with immature fruit, in September. No additional life history information is currently available (HINHP Database 2000; Service 1998a).

Cyanea dunbarii was collected in 1918 at Waihanau and Waialae Valleys, and was not observed again until 1992, when Joel Lau of the Hawaii Natural Heritage Program found it in Mokomoko Gulch on State-owned land within Molokai Forest Reserve. Currently, it is known from a single population of approximately 30 mature plants at an elevation of 671 m (2,200 ft) (GDSI 2000; HINHP Database 2000; 61 FR 53130; Ken Wood, National Tropical Botanical Garden (NTBG), *in litt.* 2000).

Cyanea dunbarii occurs on a streambank in a mesic to wet *Dicranopteris linearis* (uluhe)-*Metrosideros polymorpha* lowland forest on moderate to steep slopes between 191 and 1,248 m (626 and 4093 ft) in elevation. Associated species include *Diplazium sandwichianum* (hoio), *Charpentiera obovata* (papala), *Perrottetia sandwicensis* (olomea), *Pipturus albidus* (mamaki), *Clermontia kakeana* (ohawai), *Cheirodendron trigynum*, and *Freycinetia arborea* (ieie) (Service 1998a; HINHP Database 2000).

The major threats to this single population of *Cyanea dunbarii* on

Molokai are competition with the non-native plants *Buddleia asiatica* (butterfly bush), *Erigeron karvinskianus* (daisy fleabane), *Rubus rosifolius* (thimbleberry), *Commelina diffusa* (honohono), *Hedychium gardnerianum* (ginger), or *Kalanchoe pinnata* (air plant); and catastrophic extinction by naturally occurring events such as landslides or flooding, and/or reduced reproductive vigor due to the small number of individuals in the only known population. In addition, predation by rats is a potential threat since rats are known to be in the area and are known to eat stems and fruits of other species of *Cyanea*; habitat degradation and predation by axis deer and pigs are other potential threats to this species, because both of these species are known to occur in areas adjacent to the only known population (Service 1998a; Cuddihy and Stone 1990).

Cyanea mannii (haha)

Cyanea mannii, a member of the bellflower family (Campanulaceae), is a branched short-lived perennial shrub 1.5 to 3 m (5 to 10 ft) tall with narrowly elliptic or lance-shaped leaves. This species is distinguished from the seven other species of the genus on Molokai by a combination of the following characters: a branched, woody habit; leaves with small, hardened, marginal teeth; and a purplish corolla (Lammers 1999; 57 FR 46325).

Cyanea mannii has been observed in flower during July. No additional life history information is currently available (Service 1996a; HINHP Database 2000).

Historically, *Cyanea mannii* was known only from Kalae on East Molokai. In 1984, a single plant was discovered by Joan Aidem on privately owned land west of Puu Kolekole on East Molokai. Since then, four additional populations have been discovered in the east and west forks of Kawela Gulch on the privately owned land of TNCH's Kamakou Preserve on East Molokai and within the State's Molokai Forest Reserve. These five populations contain approximately 200 individuals on State and privately owned lands (GDSI 2000; HINHP Database 2000; Ken Wood, National Tropical Botanic Garden (NTBG), *in litt.* 2000; Lammers 1999; Service 1996a).

This species typically grows on the sides of deep gulches in *Metrosideros polymorpha*-dominated montane mesic forests between 191 and 1,248 m (626 and 4,093 ft) in elevation. Associated plant species include *Wiskstroemia* sp., *Dicranopteris linearis*, or *Vaccinium* sp. (ohelo) (Service 1996a; HINHP Database 2000; Lammers 1999).

Threats to *Cyanea mannii* on Molokai are habitat degradation by feral pigs; predation by rats, which may feed on the fruit or other parts of the plant, as suggested by evidence from related species; catastrophic extinction through naturally occurring events due to its few populations and small number of individuals (Service 1996a).

Cyanea procera (haha)

Cyanea procera, a member of the bellflower family (Campanulaceae), is a palm-like short-lived perennial tree 3 to 9 m (10 to 30 ft) tall with stalkless, lance-shaped leaves 60 to 75 cm (24 to 30 in) long and 10 to 17 cm (3.9 to 6.7 in) wide with tiny hardened teeth along the margins. This species can be distinguished from other species of the genus by its growth habit, its sessile leaves, and the single-lipped appearance of the corolla (Lammers 1999; 57 FR 46325).

No life history information is currently available for this species (Service 1996a).

Historically, *Cyanea procera* was known only from an unspecified site in the Kamalo region of East Molokai. Currently, this species is found on the privately owned lands of Kamakou Preserve and the State's Puu Alii Natural Area Reserve (NAR) in a total of two populations containing at least 10 individuals (GDSI 2000; HINHP Database 2000).

Cyanea procera is found on the walls of steep gulches in wet *Metrosideros polymorpha*-dominated lowland mixed forests between 277 and 1,248 m (909 and 4,093 ft) in elevation. Associated plant species include various species of *Asplenium* sp. (NCN), *Brousaissia arguta*, *Coprosma ochracea* (pilo), *Cyanea* spp. (haha), *Cyrtandra macrocalyx* (haiwale), *Dicranopteris linearis*, *Pipturus albidus*, *Pisonia* spp., *Scaevola procera* (naupaka kuahiwi), or *Touchardia latifolia* (olona) (Service 1996a; HINHP Database 2000).

Threats to *Cyanea procera* on Molokai are predation by rats (as suggested by evidence on related species) and feral goats; habitat degradation by feral goats and pigs; habitat destruction through erosion; and catastrophic extinction from naturally occurring events due to the vulnerability of a few populations with a small number of individuals (57 FR 46325).

Hibiscus arnottianus ssp. *immaculatus* (kokio keokeo)

Hibiscus arnottianus ssp. *immaculatus*, a member of the hibiscus family (Malvaceae), is a long-lived perennial tree up to 3m (10 ft) tall with alternate, oval, toothed leaves measuring 5 to 7 cm (2 to 2.8 in) long and 4 to 6.5 cm (1.6 to 2.6 in) wide. This subspecies is distinguished from other native Hawaiian members of the genus by its white petals and white staminal column (Bates 1999; 57 FR 46325).

This taxon was observed in flower during July. Currently, no additional life history information is available for this species (Service 1996a; HINHP Database 2000).

Hibiscus arnottianus ssp. *immaculatus* once ranged from Waihanau Valley east to Papalaua Valley on East Molokai. Currently this taxon is found west of Papalaua Valley on privately owned land and in the State's Olokui NAR above Waiehu. There are a total of two populations containing between 20 and 30 individuals (HINHP Database 2000; GDSI 2000).

Hibiscus arnottianus ssp. *immaculatus* individuals are scattered along steep sea cliffs in mesic forests between 8 and 1,014 m (26 and 3,326 ft) in elevation. Associated native plant species include *Athyrium* spp. (akolea), *Psydrax odorata*, *Cyanea grimesiana* (haha), *Antidesma platyphyllum*, *Boehmeria grandis* (akolea), *Diospyros sandwicensis* (lama), *Pipturus* spp. (mamaki), *Urera glabra* (opuhe), or *Metrosideros polymorpha* (HINHP Database 2000; Bates 1999).

The major threats to *Hibiscus arnottianus* spp. *immaculatus* on Molokai are habitat destruction by feral goats and catastrophic extinction by naturally occurring events due to the vulnerability of the two remaining populations and few individuals (Service 1996a).

Labordia triflora (kamakahala)

Labordia triflora, a short-lived perennial member of the logan family (Loganiaceae), is similar to *Labordia tinifolia* var. *lanaiensis*, except in the following characteristics: the stems of *L. triflora* are climbing; the leaf stalks are only 1 to 3 millimeters (mm) (0.04 to 0.1 in.) long; inflorescence stalks are 40 to 50 mm (1.6 to 2 in.) long; and, each flower stalk is 10 to 25 mm (0.4 to 1 in.) long (Motley 1995).

The flowers of this species are functionally unisexual. No additional life history information is available at this time (Motley 1995; HINHP Database 2000).

Until 1990, *Labordia triflora* was known only from the type collection at Mapulehu on the island of Molokai and was believed to be extinct. In 1990, Joel Lau rediscovered the species in Kua Gulch on Molokai. Currently, only 10

individuals are known from one population on privately owned land (GDSI 2000; HINHP Database 2000; Motley 1995).

This species occurs on gulch slopes in mixed mesic *Metrosideros polymorpha* forest, between 191 and 1,143 m (626 and 3,749 ft) in elevation. Associated species include *Pouteria sandwicensis* (alaa), *Sadleria cyatheoides* (amau), *Nephrolepis exaltata* (sword fern), *Coprosma* sp., *Myrsine lessertiana* (kolea lau nui), or *Tetraplasandra hawaiensis* (ohe ohe) (Motley 1995; J. Lau, *in litt.* 2001).

The threats to *Labordia triflora* include habitat degradation and destruction by feral pigs and goats; predation by rats that eat seeds; competition with the non-native plant species *Schinus terebinthifolius;* and catastrophic extinction through environmental events and reduced reproductive vigor due to the species' few populations and small number of individuals (64 FR 48307; Motley 1995)).

Lysimachia maxima (no common name (NCN))

Lysimachia maxima, a member of the primrose family (Primulaceae), is a sprawling short-lived perennial shrub with reddish brown bark. This species is differentiated from others in this genus by the leaves borne in groups of three, the broadest portion of the leaf above the middle, and rusty hairs that disappear with maturity (Wagner *et al.* 1999).

Flowers, buds, and immature fruit of *Lysimachia maxima* have been observed in late May through July. No other life history information is available for this species (61 FR 53130; Service 1998a).

Lysimachia maxima is only known from two populations containing between 45 and 50 individuals on the rim of Pelekunu Valley near Ohialele, on the privately owned land of TNCH's Pelekunu Preserve (GDSI 2000; HINHP Database 2000).

This species occurs in *Metrosideros polymorpha-Dicranopteris linearis* montane wet forest between 446 and 1,324 m (1,463 and 4,343 ft) in elevation. Associated species include *Psychotria* sp. (kopiko), *Vaccinium* sp., *Hedyotis* sp. (NCN), *Dubautia* sp. (naenae), or *Ilex anomala* (kawau) (HINHP Database 2000).

The major threats to *Lysimachia maxima* are catastrophic extinction from random environmental events (*e.g.,* landslides); reduced reproductive vigor due to the small number of individuals in the only known population; and habitat degradation and/or predation by feral pigs and goats that are known from adjacent areas (Service 1998a).

Melicope reflexa (alani)

Melicope reflexa, a long-lived perennial of the citrus family (Rutaceae), is a sprawling shrub 1 to 3 m (3.3 to 10 ft) tall with short, yellowish-brown, short-lived hairs on new growth. Opposite leaves with leaf stalks usually over 1 cm (0.4 in) long, larger leaves and fruit, and partially fused sections of capsule separate it from other species of the genus (Stone *et al.* 1999).

Currently, no life history information is available for this species (Service 1996a).

Historically, *Melicope reflexa* occurred from a ridge between Hanalilolilo and Pepeopae in Kamakou Preserve to as far east as Halawa on East Molokai. The three remaining populations of fewer than a total of 1,000 individuals are on State and private lands in Honomuni, the Wailau-Mapulehu summit area, and Kukuinui Ridge in Wailau Valley (GDSI 2000; HINHP Database 2000).

Melicope reflexa typically grows in wet *Metrosideros polymorpha*-dominated forest with native trees, such as *Cheirodendron* sp. (olapa), at elevations between 319 and 1,508 m (1,046 and 4,946 ft). Associated native plant species include *Cibotium* spp., *Dicranopteris linearis, Syzygium sandwicensis* (ohia ha), *Antidesma platyphyllum, Alyxia oliviformis* (maile), *Cheirodendron trigynum,* or *Freycinetia arborea* (J. Lau, *in litt.* 2001; Stone *et al.* 1999).

Major threats to *Melicope reflexa* include habitat degradation and predation by ungulates (axis deer and feral pigs); competition with the non-native plant *Clidemia hirta* (Koster's curse); and catastrophic extinction from environmental events due to this species' few populations and small number of individuals (57 FR 46325; Service 1996a).

Pritchardia munroi (loulu)

Pritchardia munroi, a member of the palm family (Arecaceae), is a long-lived perennial tree about 4 to 5 m (13 to 16 ft) tall. The leaves and petioles have scattered, mostly deciduous scales and hairs, somewhat larger on the lower leaf ribs. The leaves are deeply divided into segments with long, drooping tips. Numerous bisexual or functionally male flowers are arranged in clusters on hairy, branching stalks which originate at the leaf bases. The mature fruit is shiny, black, and nearly spherical. This species is distinguished from others of the genus by its relatively smooth leaves; the grayish-brown hair on the inflorescence stalks, which are shorter than the petioles; and the small size of the fruits (Read and Hodel 1999).

Currently, no life history information is available for this species (Service 1996a).

Historically and currently, *Pritchardia munroi* is found in leeward East Molokai, above Kamalo, near Kapuaokoolau Gulch (HINHP Database 2000, Read and Hodel 1999). The only known wild individual is found on privately owned land (HINHP Database 2000).

The only known wild individual grows near the base of a small ravine in mesic *Metrosideros polymorpha-Dodonaea viscosa-Styphelia tameiameiae* shrubland at elevations between 189 and 1,205 m (619 and 3,952 ft). Associated plant species include *Sida fallax* (ilima), *Wikstroemia* sp., *Diospyros sandwicensis, Pleomele auwahiensis* (halapepe), *Bidens menziesii* (kookoolau), *Pseudognaphalium sandwicensium* (enaena), *Dubautia linearis* (naenae), or *Coprosma* sp. (Read and Hodel 1999; J. Lau *in litt.* 2001).

Threats to the only known wild individual of *Pritchardia munroi* include habitat degradation by ungulates (axis deer, goats, or pigs) around its fenced exclosure, which prevents the establishment of seedlings; predation of seeds by rats; and catastrophic extinction by random environmental events (e.g., fire) due to its extreme rarity (57 FR 46325; Service 1996a).

Schiedea lydgatei (NCN)

Schiedea lydgatei, a member of the pink family (Caryophyllaceae), is a low, hairless short-lived perennial with branched stems 10 to 40 cm (4 to 16 in) long which are woody at the base. The opposite, three-veined leaves are elliptic. Bisexual flowers are arranged in loosely spreading clusters. The capsules open when mature to reveal dark reddish-brown seeds. The opposite, thin, three-veined leaves with petioles and the smooth, open flower clusters with relatively larger, green sepals separate this species from other members of this endemic Hawaiian genus (Wagner *et al.* 1999).

This species was observed with flowers and fruit in June. Currently, no additional life history information is available (Service 1996a; HINHP Database 2000).

Historically, *Schiedea lydgatei* was found in Kalae, Poholua, Makolelau, and Ohia Gulch on East Molokai. This species is now known from four populations in a more restricted area in

Makakupaia, Kawela, and Makolelau. The four populations total fewer than 1,000 individuals on State and privately owned lands (HINHP Database 2000; GDSI 2000).

This species is found along ridges in dry to mesic grassland, shrubland, and forest with scattered native trees. It ranges in elevations between 458 and 1,047 m (1,502 and 3,434 ft). Associated plant species include *Dodonaea viscosa, Metrosideros polymorpha, Styphelia tameiameiae,* or *Dicranopteris linearis* (Gagne and Cuddihy 1999; HINHP Database 2000; Wagner *et al.* 1999).

The major threats to *Schiedea lydgatei* are habitat degradation by feral ungulates; competition with the non-native plant species *Melinus minutiflora;* and catastrophic extinction due to random environmental events, primarily fire, because in this species' dry, windswept habitat a single fire could potentially destroy a large part of the populations (57 FR 46325; Service 1996a).

Schiedea sarmentosa (NCN)

Schiedea sarmentosa, a short-lived perennial herb of the pink family (Caryophyllaceae), is a many-branched shrub. The opposite leaves are slender, threadlike, and covered with dense, glandular hairs. There may be as many as 40 to 60 inflorescences on one plant, often with 50 to 100 flowers in each inflorescence. The flowers are female on some plants and bisexual on others. The green sepals are egg-shaped and somewhat hairy. The staminodes (false stamens) are half as long as the sepals and two-branched at the tip. The fruits are oval capsules. This species differs from others in this endemic Hawaiian genus by its densely bushy habit, leaf width, hairiness, and staminode length (Wagner *et al.* 1999).

The population in Makolelau Gulch has a frequency of 31 percent females. Based on analyses of pollen-ovule ratios, pollen size, inflorescence structure, and comparison to other *Schiedea* species tested in a wind tunnel, *Schiedea sarmentosa* could be wind-pollinated. No other life history information for this species is available (Service 1998a).

Schiedea sarmentosa has been found in Kawela Gulch, Makolelau, and Onini Gulch. Currently, only two populations are known to be extant. One population on privately owned land at TNCH's Kamakou Preserve numbers approximately 30 individuals. The other population occurs on privately owned land in Makolelau, and consists of four subpopulations totaling approximately 300 to 400 individuals. Estimates of the total number of individuals have ranged up to 1,000. An accurate count is somewhat difficult because this species is interspersed with *Schiedea lydgatei* (Service 1998a; HINHP Database 2000; GDSI 2000).

Schiedea sarmentosa is typically found on slopes in *Metrosideros polymorpha-Dodonaea viscosa* lowland dry or mesic shrubland or dry to mesic forest dominated by *Metrosideros polymorpha* and/or *Diospyros sandwicensis* between 316 and 1,072 m (1,036 and 3,516 ft) elevation. Associated species include *Styphelia tameiameiae, Chenopodium oahuensis* (aheahea), *Alyxia oliviformis, Pleomele auwahiensis, Bidens menziesii, Carex meyenii* (NCN), *Lipochaeta rockii* (nehe), *Nestegis sandwicensis, Nothocestrum latifolium* (aiea), *Sida fallax, Sophora chrysophylla* (mamane), or *Chamaesyce* sp. (HINHP Database 2000; J. Lau, *in litt.* 2001).

Major threats to *Schiedea sarmentosa* include habitat degradation by feral goats and pigs, competition by the non-native plants *Melinis minutiflora* and *Ricinus communis* (castor bean), and fire. The species is also threatened by a risk of extinction from naturally occurring events due to the low number of populations (61 FR 53130; Service 1998a).

Silene alexandri (NCN)

Silene alexandri, a member of the pink family (Caryophyllaceae), is an erect, short-lived perennial herb, 30 to 60 cm (1 to 2 ft) tall, and woody at the base. The narrow, elliptic leaves are hairless except for a fringe along the margins. Flowers are arranged in open clusters on stalks. The hairless stems, flowering stalks, and sepals and the larger flowers with white petals separate this species from other members of the genus (Wagner *et al.* 1999).

Currently, no life history information is available for this species.

Historically, *Silene alexandri* was known from Makolelau and Kamalo on East Molokai. Recently, the one population comprised of fewer than 10 individuals was reported to be extirpated in the wild. However, individuals remain in cultivation (Perlman, pers. comm. 2001; GDSI 2000; HINHP Database 2000).

The only known population was found on moderate to steep slopes or cliffs in dry forest at an elevation between 316 and 1,073 m (1,036 and 3,519 ft). Associated plant species include *Dodonaea viscosa, Styphelia tameiameiae, Bidens menziesii, Schiedea* spp., *Carex wahuensis* (NCN), or *Diospyros sandwicensis* (J. Lau, *in litt.* 2001).

Threats to *Silene alexandri* include habitat degradation by feral goats, possible predation by goats and cattle (*Bos taurus*), and catastrophic extinction through random environmental events, of which the most serious is fire, due to the vulnerability of this single population (57 FR 46325; Service 1996a).

Stenogyne bifida (NCN)

Stenogyne bifida, a nonaromatic member of the mint family (Lamiaceae), is a climbing short-lived perennial herb, with smooth or slightly hairy, four-angled stems. The opposite, membranous, toothed leaves are oval or elliptical in shape, and are hairless except for the midribs. Flowers are usually arranged in groups of two to six in each of several whorls at the ends of the stems. The petals are fused into a nearly straight, yellow tube which flares into pale-brown lobes comprising an upper and a lower lip. The fruits are fleshy, black nutlets. The long, narrow calyx teeth and the deep lobe in the upper lip of the yellow corolla separate this species from others of the genus (Weller and Sakai 1999).

Currently, no life history information is available for this species (Service 1996a).

Historically, *Stenogyne bifida* was known from scattered populations from Waianui in central Molokai to Pukoo Ridge on East Molokai. This species is now known from only five East Molokai populations totaling fewer than 10 individuals on Manawai-Kahananui Ridge on private lands; on Kolo Ridge, at Kamoku flats; and on the eastern fork of Kawela Gulch on the privately owned land of TNCH's Pelekunu Preserve (GDSI 2000; HINHP Database 2000).

Stenogyne bifida typically grows on gulch slopes in *Metrosideros polymorpha*-dominated montane mesic to wet forest with native species such as *Cibotium* sp., *Hedyotis* sp., *Cyanea* sp., *Dicranopteris linearis, Dodonaea viscosa, Hedyotis hillebrandii* (manono), *Pipturus albidus, Psychotria* sp., *Styphelia tameiameiae, Vaccinium* sp., *Wikstroemia* sp., *Cheirodendron trigynum, Broussaisia arguta*, or *Pouteria sandwicensis* at elevations between 336 and 1,300 m (1,102 and 4,264 ft) (HINHP Database 2000; Service 1996a; J. Lau, *in litt.* 2001).

The most pervasive threat to this species is habitat degradation by ungulates (axis deer, goats, and pigs) (57 FR 46325; Service 1996a).

Tetramolopium rockii (NCN)

Tetramolopium rockii, a member of the aster family (Asteraceae), is a glandular, hairy, prostrate short-lived

perennial shrub which forms complexly branching mats. The species has been divided into two varieties in the most recent treatment of this genus in Hawaii. Leaves of variety *calcisabulorum* have slightly inrolled edges, and are whitish due to the long silky hairs on their surfaces. Variety *rockii* has smaller, less hairy, flat, yellowish-green leaves. The leaves of both varieties are spatula-shaped with glands and smooth margins. Flower heads, arranged singly at the ends of flowering stalks, are composed of approximately 60 to 100 white ray florets and surround 30 to 55 functionally male, yellow, funnel-shaped disk florets. Fruits are achenes topped with white bristles. This species differs from others of the genus by its growth habit, its hairy and glandular surfaces, its spatulate leaf shape, and its yellow disk florets (Lowrey 1999).

Currently, no life history information is available for this species (Service 1996a).

Of the two recognized varieties of *Tetramolopium rockii*, variety *rockii* was first discovered at Moomomi about 80 years ago and is still extant in that area. *Tetramolopium rockii* var. *rockii* is found in three areas, from Kalawao to Kahinaakalani, Keieho Point to Kaplalauoa, and from Moomomi to Kahinaakalani. Variety *calcisabulorum* is only reported from Keieho Point to Kaplalauoa, intergrading with variety *rockii* where their ranges overlap. The total number of individuals of both varieties in the three populations is estimated to be 174,000; they are located on State lands, including State-owned land managed by the National Park Service at Kalaupapa National Historical Park, and privately owned lands (HINHP Database 2000; GDSI 2000).

Tetramolopium rockii is restricted to hardened calcareous sand dunes or ash-covered basalt in the coastal spray zone or coastal dry shrubland and grassland between sea level and 199 m (0 and 653 ft) elevation. Native plant species associated with this species include *Psydrax odorata, Diospyros sandwicensis, Metrosideros polymorpha, Osteomeles anthyllidifolia* (ulei), *Scaevola* sp. (naupaka), *Fimbristylis cymosa* (mauu akiaki), *Heliotropium anomalum* (ahinahina), *Lipochaeta integrifolia* (nehe), *Sida fallax*, or *Sporobolus virginicus* (akiaki) (Service 1996a; HINHP Database 2000; Lowrey 1999).

The major threats to *Tetramolopium rockii* are habitat degradation by ungulate (axis deer and cattle) activity and human recreation, competition with the non-native plant *Prosopis pallida* (kiawe), and catastrophic extinction due to fire (57 FR 46325).

Multi-Island Species

Adenophorus periens (pendant kihi fern)

Adenophorus periens, a short-lived perennial member of the grammitis family (Grammitidaceae), is a small, pendant, epiphytic (not rooted on the ground) fern. This species differs from other species in this endemic Hawaiian genus by having hairs along the pinna (leaflets) margins, by the pinnae being at right angles to the midrib axis, by the placement of the sori (a group or cluster of spore cases) on the pinnae, and the degree of dissection of each pinna (Service 1999a; Linney 1989).

Little is known about the life history of *Adenophorus periens*, which seems to grow only in dense closed-canopy forest with high humidity. Its breeding system is unknown, but outbreeding is very likely to be the predominant mode of reproduction. Spores (minute, reproductive dispersal unit of ferns and fern allies) are dispersed by wind, possibly by water, and perhaps on the feet of birds or insects. Spores lack a thick resistant coat, which may indicate their longevity is brief, probably measured in days at most. Due to the weak differences between seasons, there seems to be no evidence of seasonality in growth or reproduction. Additional information on reproductive cycles, longevity, specific environmental requirements, and limiting factors is not available (Service 1999a; Linney 1989).

Historically, *Adenophorus periens* was known from Kauai, Oahu, Lanai, East Maui, and Hawaii Island. Currently, it is known from several locations on Kauai, Molokai, and Hawaii. On Molokai, it is found in a single population containing seven individuals on the privately owned land within TNCH's Kamakou Preserve (GDSI 2000; HINHP Database 2000).

On Molokai, *Adenophorus periens* is an epiphyte usually growing on *Metrosideros polymorpha* trunks, is found in *Metrosideros polymorpha-Myrsine lessertiana* forest at elevations between 811 and 1,508 m (2,660 and 4,946 ft). It is found in habitats of well-developed, closed canopy providing deep shade and high humidity. Associated native species include *Broussasia arguta, Cheirodendron trigynum, Coprosma ochracea, Cyanea* sp., *Cyrtandra* sp. (haiwale), *Dicranopteris linearis, Freycinetia arborea, Hedyotis terminalis, Labordia hirtella* (NCN), *Machaerina angustifolia* (uki), *Psychotria hexandra* (kopiko), *Styphelia tameiameiae, Ilex anomala, Vaccinium calycinum* (ohelo), *Cibotium glaucum* (hapuu), *Melicope* sp., *Viola robusta* (pamakani), *Stenogyne kamehamehae* (NCN), *Anoectochilus sandvicensis* (jewel orchid), or *Syzygium sandwicensis* (HINHP Database 2000; Service 1999a; Linney 1989).

The threats to this species on Molokai are habitat degradation by feral pigs and goats, and competition with the non-native plant *Psidium cattleianum* (strawberry guava) (HINHP Database 2000; 59 FR 56333; Service 1999a).

Alectryon macrococcus (mahoe)

Alectryon macrococcus, a long-lived perennial member of the soapberry family (Sapindaceae), consists of two varieties, *macrococcus* and *auwahiensis*, both of which are trees with reddish-brown branches and net-veined paper- or leather-like leaves with one to five pairs of sometimes asymmetrical egg-shaped leaflets. The underside of the leaf has dense brown hairs only when young in *A. macrococcus* var. *macrococcus* and whether young or mature (persistent) in *A. macrococcus* var. *auwahiensis* (only found on East Maui). The only member of its genus found in Hawaii, this species is distinguished from other Hawaiian members of its family by being a tree with a hard fruit 2.5 cm (0.9 in) or more in diameter (Kimura and Nagata 1980; Wagner *et al.* 1999).

Alectryon macrococcus is a relatively slow-growing tree that grows in xeric to mesic sites and is adapted to periodic drought. Little else is known about the life history of this species. Flowering cycles, pollination vectors, seed dispersal agents, and specific environmental requirements are unknown (Service 1997).

Historically and currently, *Alectryon macrococcus* var. *macrococcus* is known from Kauai, Oahu, Maui, and Molokai. On Molokai, it is found on the privately owned land of TNCH's Kamakou Preserve, along the Puu Kolekole jeep road, Kaunakakai Gulch, and Kamiloloa Gulch in a total of three populations containing nine individuals on State and privately owned lands (GDSI 2000; HINHP Database 2000).

On Molokai, *Alectryon macrococcus* var. *macrococcus* typically grows on dry or talus slopes or in gulches within dry or mesic lowland forest between elevations of 534 and 1,120 m (1,751 and 3,674 ft). Associated native plants include *Dodonaea viscosa, Nestegis sandwicensis, Nothocestrum* sp. (aiea), *Pleomele* sp. (halapepe), *Psychotria* sp., *Streblus pendulina* (aiai), *Myrsine* sp. (kolea), or *Lipochaeta* sp. (nehe) (Service 1997; HINHP Database 2000; Wagner *et al.* 1999).

The threats to *Alectryon macrococcus* var. *macrococcus* on Molokai include

habitat degradation by feral goats and pigs; competition from non-native plant species, such as *Melinus minutiflora, Pennisetum clandestinum* (kikuyu grass), *Schinus terebinthifolius,* and *Psidium cattleianum;* damage from the black twig borer (*Xylosandrus compactus*); seed predation by rats, mice (*Mus domesticus*), and insects (probably the endemic microlepidopteran (small caterpillar) *Prays* cf. *fulvocanella*); loss of pollinators; and catastrophic extinction through a single natural or human-caused environmental disturbance (*e.g.*, fire) due to the very small remaining number of individuals and their limited distribution on Molokai (Service 1997; 57 FR 20772; HINHP Database 2000).

Bonamia menziesii (NCN)

Bonamia menziesii, a member of the morning glory family (Convolvulaceae) and a short-lived perennial, is a vine with twining branches that are fuzzy when young. This species is the only member of the genus that is endemic to the Hawaiian Islands and differs from other genera in the family by its two styles, longer stems and petioles, and rounder leaves (Austin 1999).

Little is known about the life history of *Bonamia menziesii.* Reproductive cycles, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999a).

Historically, *Bonamia menziesii* was known from Kauai, the Waianae Mountains of Oahu, Molokai, Maui, and the Island of Hawaii. Currently, this species is extant on Kauai, Oahu, Lanai, Maui, and the Island of Hawaii. This species was last collected on Molokai in 1918 from Maunaloa by J. F. Rock (HINHP Database 2000).

There is currently no information about the preferred habitat of or threats to *Bonamia menziesii* on Molokai.

Brighamia rockii (pua ala)

Brighamia rockii, a long-lived perennial member of the bellflower family (Campanulaceae), grows as an unbranched stem succulent with a thickened stem that tapers from the base. This species is a member of a unique endemic Hawaiian genus with only one other species, found on Kauai, from which it differs by the color of its petals, its longer calyx (fused sepals) lobes, and its shorter flower stalks (Lammers 1999).

Observations of *Brighamia rockii* by Gemmill (1996) have provided the following information: the reproductive system is protandrous, meaning there is a time separation between the production of male and female gametes, in this case a separation of several days; only 5 percent of the flowers produce pollen; very few fruits are produced per inflorescence; there are 20 to 60 seeds per capsule; and plants in cultivation at an age of 9 months have flowers. This species was observed in flower during August (HINHP Database 2000; Service 1996a).

Historically, *Brighamia rockii* ranged along the northern coast of East Molokai from Kalaupapa to Halawa and may possibly have grown on Lanai and Maui. Currently, it is only extant on Molokai in a total of four populations with between 121 to 131 individual plants occurring on State and privately owned lands. It occurs on steep, inaccessible sea cliffs along East Molokai's northern coastline from Anapuhi Beach to Wailau Valley on private lands, and on the relatively inaccessible State-owned sea stack of Huelo, east of Anapuhi Beach (HINHP Database 2000; K. Wood, *in litt.* 2000; GDSI 2000; Lammers 1999).

On Molokai, *Brighamia rockii* is found in rock crevices on steep basalt sea cliffs, often within the spray zone, in coastal dry or mesic forest, *Eragrostis variabilis* (kawelu) mixed coastal cliff communities, or shrubland, or *Pritchardia* sp. (loulu) coastal mesic forest between sea level and 671 m (0 and 2,201 ft). Associated native species include *Pritchardia hillebrandii* (loulu), *Chamaesyce celastroides* var. *amplectans* (akoko), *Wikstroemia uva-ursi* (akia), *Carex wahuensis* ssp. *wahuensis* (NCN), *Mariscus phleoides* ssp. *phleoides* (NCN), *Eragrostis variabilis, Dianella sandwicensis* (ukiuki), *Cocculus trilobus* (huehue), *Phymatosorus scolopendria* (lauae), *Crytomium falcatum* (ahina kuahiwi), *Lepidium bidentatum* var. *o-waihiense* (anaunau), *Pittosporum halophilum* (hoawa), *Artemisia* sp., *Bidens* sp. (kookoolau), *Schiedea globosa* (NCN), *Reynoldsia sandwicensis* (ohe), *Pandanus tectorius* (hala), *Peucedanum sandwicensis* (makou), *Hedyotis littoralis* (NCN), *Metrosideros polymorpha, Psydrax odorata, Diospyros sandwicensis, Osteomeles anthyllidifolia, Tetramolopium cassia* (pamakani), *Senna gaudichaudii* (kolomona), or *Scaevola sericea* (naupaka kahakai) (HINHP Database 2000; Lammers 1999; K. Wood, *in litt.* 2000).

The threats to this species on Molokai are habitat degradation (and possibly predation) by axis deer and goats; competition with the non-native plants, *Cyperus gracilis* (McCoy grass), *Digitaria ciliaris* (Henry's crabgrass), *Digitaria insularis* (sourgrass), *Ficus microcarpa* (Chinese banyan), *Kalanchoe pinnata, Lantana camara* (lantana), *Oxalis corniculata* (yellow wood sorrel), *Pluchea symphytifolia* (sourbush), *Portulaca oleracea* (pigweed), and *Solanum seaforthianum* (NCN); seed predation by rats; and lack of pollinators (Service 1996a; 57 FR 46325; HINHP Database 2000).

Centaurium sebaeoides (awiwi)

Centaurium sebaeoides, a member of the gentian family (Gentianaceae), is an annual herb with fleshy leaves and stalkless flowers. This species is distinguished from *Centaurium erythraea* (bitter herb), which is naturalized in Hawaii, by its fleshy leaves and the unbranched arrangement of the flower cluster (Wagner *et al.* 1999).

Centaurium sebaeoides has been observed flowering in April. Flowering may be induced by heavy rainfall. Populations are found in dry areas, and plants are more likely to be found following heavy rains. This species appears to be a determinate annual; triggered by declining photoperiod, the plant produces seeds and dies. Medeiros *et al.* (1999) noted that in the wild seedlings first appeared in March and April; flowers first appeared in April and May; mature capsules were observed beginning in May and continuing through June; and by the first week of July, most plants were dead. No additional life history information is available for this plant (Service 1995a).

Historically and currently, *Centaurium sebaeoides* is known from scattered localities on Kauai, Oahu, Molokai, Lanai, and Maui. Currently on Molokai, there are a total of five populations containing thousands of individuals, near Mokio Point on privately owned land and in Kalaupapa National Historical Park which is on State-owned land managed by the National Park Service (Chuck Chimera, formerly with Biological Resources Division (BRD), pers. comm. 2000; GDSI 2000; HINHP Database 2000; Wagner *et al.* 1999).

On Molokai, *Centaurium sebaeoides* grows in volcanic or clay soils or on cliffs in arid coastal areas at elevations between sea level and 409 m (0 and 1,341 ft). Associated species include *Chamaesyce celastroides* (akoko), *Dodonaea viscosa, Fimbristylis cymosa, Heteropogon contortus* (pili grass), *Lipochaeta heterophylla* (nehe), *Lipochaeta integrifolia, Lycium sandwicense* (ohelo kai), *Lysimachia mauritiana* (kolokolo kuahiwi), *Mariscus phleoides* (NCN), *Panicum fauriei* (NCN), *Panicum torridum* (kakonakona), *Scaevola sericea, Schiedea globosa, Sida fallax,*

Wikstroemia uva-ursi, Artemisia sp., *Bidens* sp., *Jacquemontia ovalifolia* (pauohiiaka), or *Lipochaeta succulenta* (nehe) (Medeiros *et al.* 1999; 56 FR 55770; Wagner *et al.* 1999).

The major threats to this species on Molokai are displacement by non-native, woody species, such as: *Casuarina equisetifolia* (paina), *Casuarina glauca* (saltmarsh), *Leucaena leucocephala* (koa haole), *Prosopis pallida, Schinus terebinthifolius, Syzygium cumini* (Java plum), and *Tournefortia argentea* (tree heliotrope); trampling and habitat degradation by feral goats and cattle; and damage caused by off-road vehicles (Medeiros *et al.* 1999).

Ctenitis squamigera (pauoa)

Ctenitis squamigera is a short-lived perennial and a member of the spleenwort family (Aspleniaceae). It has a rhizome (horizontal stem) 5 to 10 millimeters (mm) (0.2 to 0.4 in) thick, creeping above the ground and densely covered with scales similar to those on the lower part of the leaf stalk. *Ctenitis squamigera* can be readily distinguished from other Hawaiian species of *Ctenitis* by the dense covering of tan-colored scales on its fronds (Wagner and Wagner 1992; Degener and Degener 1957).

Reproductive cycles, longevity, specific environmental requirements and limiting factors are unknown (Service 1998b).

Historically, *Ctenitis squamigera* was recorded from Kauai, Oahu, Molokai, Lanai, Maui, and Hawaii. It is currently found on Oahu, Lanai, Molokai, and Maui. There is currently a single population with 20 individuals on the island of Molokai in Wawaia Gulch on privately owned land (GDSI 2000; J. Lau, *in litt.* 2000; HINHP Database 2000).

On Molokai, *Ctenitis squamigera* is found in mesic forest and gulch slopes between elevations of 757 and 1,133 m (2,483 and 3,716 ft). Associated native plant taxa include *Metrosideros polymorpha, Diospyros sandwicensis, Nestegis sandwicensis, Xylosma hawaiiense* (maua), *Pouteria sandwicensis, Nephrolepis exaltata, Carex meyenii, Dryopteris unidentata* (NCN), or *Pleomele auwahiensis* (J. Lau, *in litt.* 2000; Service 1998b; 59 FR 49025).

The primary threats to *Ctenitis squamigera* are habitat degradation by goats, and competition with the non-native plant taxa *Schinus terebinthifolius* and *Melinis minutiflora* (J. Lau, *in litt.* 2000; Service 1998b; 59 FR 49025).

Cyanea grimesiana ssp. *grimesiana* (haha)

Cyanea grimesiana ssp. *grimesiana,* a short-lived perennial member of the bellflower family (Campanulaceae), is a shrub with pinnately divided leaves. This species is distinguished from others in this endemic Hawaiian genus by the pinnately lobed leaf margins and the width of the leaf blades. This subspecies is distinguished from the other two subspecies by the shape and size of the calyx lobes, which overlap at the base (Lammers 1999).

Little is known about the life history of this plant. On Molokai, flowering plants have been observed in July and August. Reproductive cycles, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999a).

Historically and currently, *Cyanea grimesiana* ssp. *grimesiana* is known from Oahu, Molokai, Lanai, and Maui. On Molokai, it is found in a total of two populations containing eight individuals, in Wailau, Puu Kahea and Olokui NAR on State-owned lands (GDSI 2000; HINHP Database 2000; Service 1999a).

On Molokai, *Cyanea grimesiana* ssp. *grimesiana* is typically found in mesic forest often dominated by *Metrosideros polymorpha* or *Metrosideros polymorpha* and *Acacia koa* (koa), or on cliffs, at elevations between 93 and 1,354 m (305 and 4,441 ft). Associated plants include *Psychotria* sp., *Bobea* sp. (ahakea), *Antidesma* sp. (hame), *Syzygium sandwicensis, Xylosma* sp. (maua), *Cibotium* sp., *Doodia* sp. (okupukupulauii), *Nephrolepis* sp. (kupukupu), *Cyrtandra* sp., *Dicranopteris linearis,* or *Freycinetia arborea* (HINHP Database 2000).

The threats to this species on Molokai are habitat degradation and/or destruction caused by axis deer, feral goats, and pigs; competition with various non-native plants, such as *Clidemia hirta*; catastrophic extinction by randomly naturally occurring events (e.g., fire, landslides) due to the small number of existing individuals; trampling by hikers; seed predation by rats; and predation by various slugs (*Milax* spp.) (HINHP Database 2000; 61 FR 53108; Service 1999a).

Cyperus trachysanthos (Puukaa)

Cyperus trachysanthos, a member of the sedge family (Cyperaceae), is a short-lived perennial grass-like plant with a short rhizome (underground stem). The culms (aerial stems) are densely tufted, obtusely triangular in cross section, tall, sticky, and leafy at the base. This species is distinguished from others in the genus by the short rhizome, the leaf sheath with partitions at the nodes, the shape of the glumes, and the length of the culms (Koyama 1999).

Little is known about the life history of *Cyperus trachysanthos*. Reproductive cycles, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999a).

Historically, *Cyperus trachysanthos* was known from Niihau, Kauai, and scattered locations on Oahu, Molokai, and Lanai. This species is now extant on Niihau, Kauai, and Oahu. This species was last collected on Molokai in 1912 from Maunaloa by J. F. Rock (HINHP Database 2000).

There is currently no information about the preferred habitat of or threats to *Cyperus trachysanthos* on Molokai.

Diellia erecta (Asplenium-leaved Diellia)

Diellia erecta, a short-lived perennial member of the spleenwort family (Aspleniaceae), is a fern that grows in tufts of 3 to 9 lance-shaped fronds which emerge from a rhizome covered with brown to dark gray scales. This species differs from other members of the genus in having brown or dark gray scales usually more than 2 cm (0.8 in) in length, fused or separate sori along both margins, shiny black midribs that have a hardened surface, and veins that do not usually encircle the sori (Degener and Greenwell 1950; Robinson 1912; Wagner 1952).

Little is known about the life history of this taxon. Reproductive cycles, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999a).

Historically, *Diellia erecta* was known from Kauai, Oahu, Molokai, Lanai, Maui, and Hawaii Island. Currently, it is known from Kauai, Oahu, Molokai, Maui, and Hawaii. On Molokai, it is known from a total of three populations containing at least 10 individuals in Halawa Valley, Kahuaawi Gulch, Makolelau and Onini Gulch on privately owned lands (HINHP Database 2000; K. Wood, *in litt.* 1999; Service 1999a).

On Molokai, *Diellia erecta* is found in mixed mesic forest and mesic *Diospyros sandwicensis* forest between elevations of 750 and 1,133 m (2,460 and 3,716 ft). Associated native plant species include *Alyxia oliviformis*, *Metrosideros polymorpha*, *Bobea* sp., *Coprosma foliosa* (pilo), *Dodonaea viscosa*, *Dryopteris unidentata*, *Myrsine* sp., *Ochrosia compta* (holei), *Dubautia linearis* ssp. *opposita* (naenae), *Psychotria* sp., *Pleomele auwahiensis*, *Sophora chrysophylla*, *Styphelia*

tameiameiae, *Syzygium sandwicensis*, or *Wikstroemia* sp. (HINHP Database 2000; K. Wood, *in litt.* 1999).

The major threats to *Diellia erecta* on Molokai are habitat degradation by pigs, goats, and axis deer; competition with the non-native plant species *Fraxinus uhdei* (tropical ash), *Ricinus communis*, *Melinus minutiflora*, *Psidium cattleianum*, and *Blechnum occidentale* (NCN); and catastrophic extinction due to random naturally occurring events and reduced reproductive vigor due to the small number of existing individuals (HINHP Database 2000; K. Wood, *in litt.* 1999; 59 FR 56333; Service 1999a).

Diplazium molokaiense (NCN)

Diplazium molokaiense, a short-lived member of the spleenwort family (Aspleniaceae), has a short prostrate rhizome. The leaf stalks are 15 to 20 cm (6 to 8 in) long and green or straw colored. The frond is thin textured, ovate-oblong, 15 to 50 cm (6 to 20 in) long and 10 to 15 cm (4 to 6 in) wide, truncate at the base, and pinnate with a pinnatifid apex. The sori are 0.8 to 1.3 cm (0.3 to 0.5 in) long and lie alongside the side veins of the pinnae. *Diplazium molokaiense* can be distinguished from other species of *Diplazium* in the Hawaiian Islands by a combination of characters, including venation pattern, the length and arrangement of the sori, frond shape, and the degree of dissection of the frond (Wagner and Wagner 1992).

Reproductive cycles, longevity, specific environmental requirements and limiting factors for *Diplazium molokaiense* are unknown (Service 1998a).

Historically, *Diplazium molokaiense* was found on Kauai, Oahu, Molokai, Lanai, and Maui. Currently, this species is extant on Maui. This species was last collected on Molokai in 1912 from Kaluaaha Valley by C. N. Forbes (HINHP Database 2000).

On Molokai, *Diplazium molokaiense* was found on steep, rocky, wooded gulch walls in wet forests between elevations of 97 and 1,349 m (318 and 4,424 ft) elevation (HINHP Database 2000).

There is no information on threats that may effect *Diplazium molokaiense* on Molokai.

Eugenia koolauensis (nioi)

Eugenia koolauensis, a member of the myrtle family (Myrtaceae), is a long-lived perennial tree or shrub between 2 and 7 m (7 and 23 ft) tall with branch tips covered with dense brown hairs. *Eugenia koolauensis* is one of two species in the genus that are native to Hawaii, it differs from the other species in having leaves that are densely hairy on the lower surface and leaf margins that curve under the leaves (Wagner *et al.* 1999).

This species has been observed in flower from February to December in various years. No other information exists on reproductive cycles, longevity, specific environmental requirements, or limiting factors (Service 1998b).

Historically, *Eugenia koolauensis* was known from Maunaloa on western Molokai and from Oahu. Currently, this species is extant on Oahu. This species was last collected on Molokai in 1912 from the west end of the island by J. F. Rock (HINHP Database 2000).

On Molokai, *Eugenia koolauensis* was found in rocky gulches or on gentle slopes with deep soil between 475 and 989 m (1,558 and 3,244 ft) in elevation. Associated native plant species include *Nestegis sandwicensis*, *Nototrichium sandwicensis*, *Xylosma hawaiiensee*, *Diospyros sandwicensis*, *Nesoluma polynesicum*, *Reynoldsia sandwicensis*, or *Erythrina sandwicensis* (wiliwili) (J. Lau, *in litt.* 2001).

No information on threats that may affect *Eugenia koolauensis* on Molokai is available.

Flueggea neowawraea (mehamehame)

Flueggea neowawraea, a member of the spurge family (Euphorbiaceae) and a long-lived perennial, is a large tree up to 30 m (100 ft) tall and 2 m (7 ft) in diameter with white oblong pores covering its scaly, pale brown bark. The thin, papery, oval leaves, 4 to 14 cm (1.5 to 5.5 in) long and 2 to 9 cm (0.8 to 3.5 in) wide, are green on the upper surface and pale green on the lower surface. This species is usually dioecious (having separate male and female plants) with unisexual flowers lacking petals. Male flowers, on stalks less than 4 mm (0.2 in) long, have five green sepals with brownish tips. The female flowers, on stalks 1 to 2.5 mm (0.04 to 0.1 in) long, have sepals of unequal length with irregular margins. This species is the only member of the genus found in Hawaii and can be distinguished from other species in the genus by its large size; scaly bark; the shape, size, and color of the leaves; flowers clustered along the branches; and the size and shape of the fruits (Hayden 1999).

Individual trees of *Flueggea neowawraea* bear only male or female flowers, and must be cross-pollinated from a different tree to produce viable seed. Little else is known about the life history of this species. Reproductive cycles, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999a; Hayden 1999).

Historically, *Flueggea neowawraea* was known from Molokai, Oahu, Kauai and the island of Hawaii. Currently, this species is found on Kauai, Oahu, Maui, and the island of Hawaii. This species was last collected on Molokai in 1931 from Waihii by G. W. Russ (HINHP Database 2000).

On Molokai, *Flueggea neowawraea* occurred in gulches in mesic forest between 450 and 840 m (1,476 and 2,755 ft) elevation (J. Lau, *in litt.* 2001).

No information on threats that may affect *Flueggea neowawraea* on Molokai is available.

Hedyotis mannii (pilo)

Hedyotis mannii, a member of the coffee family (Rubiaceae), is a short-lived perennial with smooth, usually erect stems 30 to 60 cm (1 to 2 ft) long, which are woody at the base and four-angled or -winged. The leaves are opposite, thin in texture and elliptic to sometimes lance-shaped. Stipules (leaf-like appendages), which are attached to the slightly winged leaf stalks where they join and clasp the stem, are triangular. Flowers are arranged in loose clusters up to 30 cm (1 ft) long at the ends of the stems and are either bisexual or female. This species' growth habit; its quadrangular or winged stems; the shape, size, and texture of its leaves; and its dry capsule, which opens when mature, separate it from other species of the genus (Wagner *et al.* 1999).

Currently, no life history information is available for this species (Service 1996a).

Historically and currently, *Hedyotis mannii* is found on Lanai, West Maui, and Molokai. After an absence of 50 years, this species was rediscovered on Molokai in 1987 by Steve Perlman on private land in Kawela Gulch in TNCH's Kamakou Preserve. Only five plants are known to exist in this area (HINHP Database 2000; GDSI 2000).

On Molokai, *Hedyotis mannii* grows on dark, narrow, rocky gulch walls in mesic and wet forests at 593 to 1,212 m (1,945 to 3,975 ft) in elevation. Associated plant species include *Pipturus* sp., *Cibotium* sp., *Cyanea* sp., *Scaevola* sp., or *Psychotria* sp. (Wagner *et al.* 1999; HINHP Database 2000; Service 1996a).

The threats to *Hedyotis mannii* on Molokai are habitat degradation by feral pigs; competition with the non-native plant *Melinis minutiflora*; and catastrophic extinction through random environmental events to which the limited number of individuals are extremely vulnerable (HINHP Database 2000; 57 FR 46325; Service 1996a).

Hesperomannia arborescens (NCN)

Hesperomannia arborescens, a long-lived perennial member of the aster family (Asteraceae), is a small shrubby tree that usually stands 1.5 to 5 m (5 to 16 ft) tall. This member of an endemic Hawaiian genus differs from other *Hesperomannia* species in having the following combination of characters: erect to ascending flower heads, thick flower head stalks, and usually hairless and relatively narrow leaves (Wagner *et al.* 1999).

This species was observed in flower from April through June and fruit during March and June. No other information is available on reproductive cycles, longevity, specific environmental requirements, and limiting factors (Service 1998c).

Hesperomannia arborescens was formerly known from Lanai, Molokai, and Oahu. This species is now known from Oahu, Molokai, and Maui. On Molokai, one population of five individuals is known from private land (GDSI 2000; HINHP Database 2000).

On Molokai, *Hesperomannia arborescens* is found on slopes or ridges in wet *Metrosideros polymorpha-Dicranopteris linearis* lowland forest or mesic *Diospyros sandwicensis-Metrosideros polymorpha* lowland forest transition zones between 175 and 959 m (574 and 3,145 ft) in elevation. Associated native species include *Broussaisia arguta*, *Freycinetia arborea*, *Antidesma* sp., *Cibotium glaucum*, *Psychotria mauiensis* (kopiko), *Elaphoglossum* sp. (ekaha), *Coprosma* sp., *Hedyotis* sp., *Cheirodendron* sp., *Smilax melastomifolia* (hoi kuahiwi), *Clermontia pallida* (oha wai), *Thelypteris* sp. (palapalaia), *Diplopterygium pinnatum* (uluhe lau nui), *Ilex anomala*, *Myrsine* sp., *Urera glabra*, *Cyrtandra* sp., *Pipturus* sp., *Boehmeria grandis*, *Nestegis sandwicensis*, *Nephrolepis exaltata*, or *Wikstroemia* sp. (HINHP Database 2000).

The major threats to *Hesperomannia arborescens* on Molokai are habitat degradation by feral pigs, goats, and humans; competition with non-native plant taxa, such as *Clidemia hirta*, *Kalanchoe pinnata*, and *Rubus rosifolius*; and catastrophic extinction due to random environmental events or reduced reproductive vigor due to this species' limited numbers (59 FR 14482; HINHP Database 2000).

Hibiscus brackenridgei (mao hau hele)

Hibiscus brackenridgei, a short-lived perennial member of the mallow family (Malvaceae), is a sprawling to erect shrub or small tree. This species differs from other members of the genus in having the following combination of characteristics'yellow petals, a calyx consisting of triangular lobes with raised veins and a single midrib, bracts attached below the calyx, and thin stipules that fall off, leaving an elliptic scar. Three subspecies of *Hibiscus brackenridgei* are now recognized, *brackenridgei*, *molokaiana*, and *mokuleianus*. Subspecies *molokaiana* was found on the island of Molokai. When we listed this species in 1994 only two subspecies, *brackenridgei* and *mokuleianus*, were recognized. Subsequent to the final rule listing this species in 1994 we became aware of Wilson's (1993) taxonomic treatment of this group in which *Hibiscus brackenridgei* ssp. *molokaiana* was changed to subspecies status and recognized as distinct from *Hibiscus brackenridgei* ssp. *brackenridgei*. Wilson's (1993) treatment is cited in the supplement in the revised edition of the ''Manual of the Flowering Plants of Hawaii'' as the basis for recognizing *Hibiscus brackenridgei* ssp. *molokaiana*. We will address this name change in a future **Federal Register** notice (HINHP Database 2000; Bates 1999; Wilson 1993; Wagner *et al.* 1999).

Hibiscus brackenridgei is known to flower continuously from early February through late May, and intermittently at other times of year. Intermittent flowering may possibly be tied to day length. Little else is known about the life history of this plant. Pollination biology, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999a).

Historically, *Hibiscus brackenridgei* ssp. *molokaiana* was known from Molokai and is currently found on Oahu. This species was last collected on Molokai in1920 from Laau Point by J. F. Rock (HINHP Database 2000).

On Molokai, *Hibiscus brackenridgei* ssp. *molokaiana* occurred on slopes in lowland dry forest and shrubland from 11 to 467 m (36 to 1,531 ft) in elevation (J. Lau, *in litt.* 2001; HINHP Database 2000).

No information on threats that may affect *Hibiscus brackenridgei* ssp. *molokaiana* on Molokai is available.

Ischaemum byrone (Hilo ischaemum)

Ischaemum byrone, a member of the grass family (Poaceae), is a short-lived perennial species with creeping underground and erect stems. *Ischaemum byrone* can be distinguished from other Hawaiian grasses by its tough outer flower bracts, dissimilar basic flower units, which are awned and two-flowered, and a di- or trichotomously-(two or three part) branching inflorescence (O'Connor 1999).

No life history information is currently available for this species (Service 1996b).

Ischaemum byrone was historically distributed on Kauai, Molokai, Maui, and Hawaii Island. Currently, this species is found on Molokai, Maui, and Hawaii Island. On Molokai, there are a total of two populations containing between 100 to 1,000 individuals located in Wailau Valley and the eastern edge of Kikipua on privately owned lands (GDSI 2000; HINHP Database 2000; 59 FR 10305).

On Molokai, *Ischaemum byrone* is found in coastal dry shrubland or *Artemisia* sp. cliff communities, near the ocean, among rocks or on basalt cliffs or talus slopes, and elevations between sea level and 238 m (0 and 781 ft). Associated taxa include *Bidens molokaiensis* (NCN), *Hedyotis littoralis*, *Lysimachia mauritiana*, *Fimbristylis cymosa*, or *Pandanus tectorius* (hala) (HINHP Database 2000; Gagne and Cuddihy 1999; O'Connor 1999).

The threats to *Ischaemum byrone* on Molokai are competition by non-native grasses, particularly *Digitaria ciliaris*; predation by goats and axis deer; and elimination and degradation of habitat through fire and residential development (Service 1996b).

Isodendrion pyrifolium (wahine noho kula)

Isodendrion pyrifolium, a short-lived perennial member of the violet family (Violaceae), is a small, branched shrub. The species is distinguished from other taxa in the genus by its smaller, green-yellow flowers, and hairy stipules and leaf veins (Wagner *et al.* 1999).

During periods of drought, this species will drop all but the newest leaves. After sufficient rains, the plants produce flowers with seeds ripening one to two months later. No further information is available on reproductive cycles, specific environmental requirements, or limiting factors (Service 1996c).

Isodendrion pyrifolium was known historically from Kauai, Oahu, Maui, Hawaii, Niihau, Molokai, and Lanai. Currently, this species is only extant on the island of Hawaii. This species was last collected on Molokai in the 1800s (HINHP Database 2000).

On Molokai, *Isodendrion pyrifolium* was found in dry shrublands between 69 and 422 m (226 and 1,384 ft) elevation. Associated native plant species included *Dodonaea viscosa, Heteropogon contortus, Styphelia tameiameiae,* or *Bidens menziesii* (J.

Lau, *in litt.* 2001; Wagner *et al.* 1999; HINHP Database 2000).

No information on threats that may have affected *Isodendrion pyrifolium* on Molokai is available.

Mariscus fauriei (NCN)

Mariscus fauriei, a member of the sedge family (Cyperaceae), is a short-lived perennial plant with somewhat enlarged underground stems and three-angled, single or grouped aerial stems 10 to 50 cm (4 to 20 in) tall. It has leaves shorter than or the same length as the stems 1 to 3.5 mm (0.04 to 0.1 in) wide. This species differs from others in the genus in Hawaii by its smaller size and its narrower, flattened, and more spreading spikelets (Koyama 1999; 59 FR 56333).

Currently, the reproductive cycle, specific environmental requirements, and limiting factors are unknown for this species (Service 1996b).

Historically, *Mariscus fauriei* was found on east Molokai, Lanai, and the island of Hawaii. This species is no longer extant on Lanai. Currently on Molokai, one population with 20 to 30 plants occurs above Kamiloloa on State-owned land (HINHP Database 2000; GDSI 2000).

On Molokai, *Mariscus fauriei* typically grows in *Diospyros sandwicensis*-dominated lowland dry forests, often on a lava substrate, at elevations between 436 and 1,120 m (1,430 and 3,673 ft). Associated species include *Psydrax odorata, Peperomia* sp. (ala ala wai nui), or *Rauvolfia sandwicensis* (hao) (HINHP Database 2000; Koyama 1999).

The threats to *Mariscus fauriei* on Molokai are predation and habitat degradation by feral goats and axis deer. Because there is only one known population on Molokai, the species is threatened by the risk of extinction through random environmental events and through reduced reproductive vigor (Service 1996b; 59 FR 56333).

Marsilea villosa (ihiihi)

Marsilea villosa, a member of the marsilea family (Marsileaceae), is a short-lived perennial aquatic to semiaquatic fern similar in appearance to a four-leaved clover. The leaves are borne in pairs along a thin rhizome. The leaves and rhizomes vary in pubescence, depending on the aridity of the habitat at the time of development. A hard sporocarp (hard-walled case containing male and female spores) is borne at the base of a leaf pair. The young sporocarp, like the rhizome, is covered with rust-colored hairs, which are lost as the sporocarp matures. The plant occurs either in scattered clumps or as a dense interwoven mat, depending on the competition with other species for limited habitat resources. The species is the only member of the genus native to Hawaii and is closely related to *Marsilea vestita* (NCN) of the western coast of the United States (Service 1996c).

Marsilea villosa requires periodic flooding for spore release and fertilization, then a decrease in water levels for the young plants to establish, and finally dry soil for sporocarps to mature. Shading reduces vigor of *Marsilea villosa.* No other life history information is currently available for this species (Service 1996c).

Marsilea villosa was known historically from Oahu, Molokai and Niihau. Currently, it is found only on Oahu and Molokai. On Molokai there are four populations with an unspecified number of individuals located at Kamaka ipo, Ilio Point, Kaiehu Point, and from Kaeo to Mokio on State- and privately owned lands (HINHP Database 2000; GDSI 2000).

On Molokai, *Marsilea villosa* typically occurs in shallow depressions in clay soil, or lithified sand dunes overlaid with alluvial clay. All reported populations occur at elevations between 125 and 172 m (410 and 564 ft) elevation. While *Marsilea villosa* can withstand minimal shading, it appears most vigorous growing in open areas. The associated native vegetation of *Marsilea villosa* on Molokai includes *Heteropogon contortus, Sida fallax, Waltheria indica* (uhaloa), *Centaurium sebaeoides, Tetramolopium sylvae* (pamakani), or *Schiedea globosa* (Service 1996c).

The threats to *Marsilea villosa* on Molokai are the destruction of natural hydrology; encroachment and competition from naturalized, non-native plants such as *Cenchrus ciliaris* (buffelgrass), *Prosopis pallida, Lantana camara, Digitaria insularis,* and *Chamaecrista nictitans* (partridge pea); damage by off-road vehicles or by grazing cattle and axis deer; habitat destruction, degradation, and fragmentation through development, fire, trampling by humans and introduced mammals; and catastrophic extinction from random environmental events and reduced reproductive vigor due to few populations and small population sizes (Service 1996c; 57 FR 27863).

Melicope mucronulata (alani)

Melicope mucronulata, a long-lived perennial of the citrus family (Rutaceae), is a small tree up to 13 ft (4 m) tall with oval to elliptic-oval leaves. This species is distinguished from others in the genus by the growth habit, the number of flowers in each flower cluster, the size and shape of the fruit, and the degree of hairiness of the leaves and fruit walls (Stone *et al.* 1999).

Currently, no life history information is available for this species (Service 1997).

First discovered in 1920 in Kanaio, East Maui, *Melicope mucronulata* was not relocated until 1983. On Molokai, one population of two individuals was then found two years later in Kupaia on the privately owned Kamakou Preserve (GDSI 2000; HINHP Database 2000; Stone *et al.* 1999).

On Molokai, *Melicope mucronulata* occurs on steep, west- or north-facing slopes in mesic *Diospyros sandwicensis-Metrosideros polymorpha* forest, *Metrosideros polymorpha-Dodonaea viscosa* shrubland, or *Metrosideros polymorpha-Styphelia tameiameiae* shrubland between elevations of 199 and 1,143 m (653 and 3,749 ft). Associated native species include *Alyxia oliviformis, Nestegis sandwicensis, Coprosma foliosa, Psychotria mariniana* (kopiko), *Pleomele auwahiensis, Osteomeles anthyllidifolia, Ochrosia compta, Myrsine lanaiensis* (kolea), *Alphitonia ponderosa* (kauila), *Pittosporum* sp., *Hedyotis terminalis, Melicope hawaiensis* (alani), or *Phyllanthus* sp. (NCN) (HINHP Database 2000; J. Lau, *in litt.* 2001).

On Molokai, the major threat to the continued existence of this species is catastrophic extinction from random environmental events due to the few extant populations and small number of individuals. Habitat degradation by goats and pigs; predation by goats; and competition with non-native plants, particularly *Melinis minutiflora,* also pose immediate threats to this species (Service 1997; 57 FR 20772).

Melicope munroi (alani)

Melicope munroi, a long lived perennial of the citrus family (Rutaceae), is a sprawling shrub up to 3 m (10 ft) tall. The new growth of this species is minutely hairy. This species differs from other Hawaiian members of the genus in the shape of the leaf and the length of the inflorescence (a flower cluster) stalk (Stone *et al.* 1999).

Little is known about the life history of *Melicope munroi.* Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 2001).

Historically, this species was known from the Lanaihale summit ridge of Lanai and above Kamalo on Molokai.

Currently, *Melicope munroi* is only known from the Lanaihale summit ridge on Lanai. This species was last collected on Molokai in 1910 from Kamalo by J. F. Rock (HINHP Database 2000).

There is currently no information about the preferred habitat of or threats to *Melicope munroi* on Molokai.

Neraudia sericea (NCN)

Neraudia sericea, a short-lived perennial and a member of the nettle family (Urticaceae), is a 3 to 5 m (10 to 16 ft) tall shrub with densely hairy branches. The elliptic or oval leaves have smooth margins or slightly toothed margins on young leaves. The upper leaf surface is moderately hairy and the lower leaf surface is densely covered with irregularly curved, silky gray to white hairs along the veins. The male flowers may be stalkless or have short stalks. The female flowers are stalkless and have a densely hairy calyx that is either toothed, collar-like, or divided into narrow unequal segments. The fruits are achenes with the apical section separated from the basal portion by a deep constriction. Seeds are oval with a constriction across the upper half. *Neraudia sericea* differs from the other four closely related species of this endemic Hawaiian genus by the density, length, color, and posture of the hairs on the lower leaf surface and by its mostly entire leaf margins (Wagner *et al.* 1999).

Additional information on the life history of this plant, reproductive cycles, longevity, specific environmental requirements, and limiting factors is generally unknown (Service 1999a).

Neraudia sericea was known historically from Molokai, Lanai, Maui, and Kahoolawe. Currently, this species is found only on Maui and Molokai. On Molokai, one population of 50 to 100 individuals is known from Makolelau on privately owned land (GDSI 2000; HINHP Database 2000).

On Molokai, *Neraudia sericea* generally occurs on gulch slopes and gulch bottoms in lowland dry to mesic *Metrosideros polymorpha-Dodonaea viscosa-Styphelia tameiameiae* shrubland or forest between 691 and 1,043 m (2,266 and 3,421 ft) in elevation. Other associated plant species include *Pleomele auwahiensis, Alyxia oliviformis, Coprosma* sp., or *Hedyotis* sp. (HINHP Database 2000; J. Lau, *in litt.* 2001; Wagner *et al.* 1999).

The primary threats to *Neraudia sericea* on Molokai are habitat degradation by feral pigs and goats; competition with the non-native plant, *Melinus minutiflora;* and catastrophic extinction through random environmental events due to the vulnerability of a single population (Service 1999a; 59 FR 56333).

Peucedanum sandwicense (makou)

Peucedanum sandwicense, a short lived perennial and a member of the parsley family (Apiaceae), is a parsley-scented, sprawling herb. Hollow stems arise from a short, vertical, perennial stem with several fleshy roots. This species is the only member of the genus in the Hawaiian Islands (Constance and Affolter 1999).

Additional information on the life history of this plant, reproductive cycles, longevity, specific environmental requirements, and limiting factors is generally unknown (Service 1995b).

Historically and currently, *Peucedanum sandwicense* was known from Molokai, Maui, and Kauai. Discoveries in 1990 extended the known distribution of this species to the island of Oahu. On Molokai, four populations are known from private and State-owned lands in Pelekunu Valley, on Huelo Islet and Mokapu Islet, and State-owned lands managed by the National Park Service at Kalaupapa National Historical Park, totaling approximately 50 individuals (GDSI 2000; HINHP Database 2000; K. Wood, *in litt.* 2000; Service 1995b).

On Molokai, *Peucedanum sandwicense* grows in cliff habitats in brown soil and talus in *Chamaesyce celastroides* var. *amplectans-Chenopodium oahuense* coastal dry shrubland or *Diospyros sandwicensis* forest from sea level to above 840 m (2,755 ft) and is associated with native species, such as *Eragrostis* sp. (kawelu), *Santalum ellipticum* (iliahialoe), *Pritchardia hillebrandii, Reynoldsia sandwicensis, Osteomeles anthyllidifolia, Scaevola sericea, Senna gaudichaudii, Pittosporum halophilum, Sida fallax, Plumbago zeylanica* (iliee), *Artemisia australis* (ahinahina), *Portulaca lutea* (ihi), *Lepidium bidentatum* var. *o-waihiense, Schiedea globosa, Lipochaeta integrifolia, Peperomia remyi* (NCN), *Plectranthus parviflorus* (ala ala wai nui), *Dianella sandwicensis,* or *Metrosideros polymorpha* (Constance and Affolter 1999; Service 1995b; HINHP Database 2000; K. Wood, *in litt.* 2000).

Threats to *Peucedanum sandwicense* on Molokai are seed predation by rats and competition with the non-native plant species *Ageratum conyzoides* (maile hohono), *Coronopus didymus* (swinecress), *Kalanchoe pinnata, Lantana camara, Malvastrum coromandelianum* ssp. *coromandelianum* (false mallow), *Morinda citrifolia* (noni), *Plantago lanceolata* (English plantain), *Pluchea carolinensis* (sourbush), *Portulaca oleracea*, *Elaphantopus spicatus* (NCN), *Schinus terebinthifolius*, and *Sonchus oleraceus* (pualele) (Service 1995b; 59 FR 9304; K. Wood, *in litt.* 2000).

Phyllostegia mannii (NCN)

Phyllostegia mannii, a short-lived perennial and nonaromatic member of the mint family (Lamiaceae), is a climbing vine with many-branched, four-sided, hairy stems. The opposite, hairy leaves, which are shaped like narrow triangles or narrow triangular ovals, have coarsely toothed margins. Clusters of four to six white flowers are arranged in each of several false whorls along an unbranched flowering stem. The fruits are fleshy, dark-green to black nutlets (dry seeds with a hard outer covering). This species is distinguished from others in the genus by its hairiness; its thin, narrow leaves, which are not pinnately divided; and the usually six flowers per false whorl in a terminal inflorescence (Wagner *et al.* 1999).

This species was observed with fruit in July. Currently, no additional life history information is available for this species (Service 1996a).

Historically, *Phyllostegia mannii* was found from Hanalilolilo to Ohialele on East Molokai and at Ukulele on East Maui. It has not been seen on Maui for over 70 years and is apparently extirpated on that island. On Molokai, this species is now known from only one individual on Puu Alii on privately owned land (GDSI 2000; HINHP Database 2000; Service 1996a).

On Molokai, *Phyllostegia mannii* grows in shaded sites in sometimes foggy and windswept, wet, open, *Metrosideros polymorpha*-dominated montane forest with a native shrub and *Cibotium* sp. understory between 590 and 1508 m (1,935 and 4,946 ft) elevation. Associated plant species include *Asplenium* sp., *Broussaisia arguta, Cheirodendron trigynum, Coprosma ochracea, Cyanea* sp., *Dicranopteris linearis, Hedyotis hillebrandii, Pipturus albidus, Pouteria sandwicensis, Psychotria* sp., *Touchardia latifolia, Vaccinium* sp., or *Wikstroemia* sp. (HINHP Database 2000; Service 1996a).

The only known population of *Phyllostegia mannii* is threatened by habitat destruction and degradation by feral pigs. Because there is only one individual currently extant, a natural or human-caused environmental event could extirpate the species (Service 1996a; 57 FR 46325).

Phyllostegia mollis (NCN)

Phyllostegia mollis, a short-lived member of the mint family (Lamiaceae), grows as a nearly erect, densely hairy, nonaromatic, perennial herb. Leaves are oval in outline with rounded teeth. Flowers, usually in groups of six, are spaced along a stem; there are two shorter flowering stems directly below the main stem. The flowers have fused sepals and white petals fused into a tube and flaring into a smaller upper and a larger lower lip. Fruits are fleshy, dark green to black nutlets. A suite of technical characteristics concerning the kind and amount of hair, the number of flowers in a cluster, and details of the various plant parts separate this species from other members of the genus (Wagner *et al*. 1999).

Individual *Phyllostegia mollis* plants live for approximately five years. The species is known to flower in late winter and spring. Additional information on the life history of this plant, reproductive cycles, specific environmental requirements, and limiting factors is generally unknown (Service 1998b).

Historically, *Phyllostegia mollis* was known from Oahu, Molokai, and East Maui. Currently, this species is only known from Oahu and Maui. This species was last collected on Molokai in 1912 from Kamakou Preserve by J. F. Rock (HINHP Database 2000).

On Molokai, *Phyllostegia mollis* typically grew in mesic *Metrosideros polymorpha* forests between 551 and 1,216 m (1,807 and 3,988 ft) elevation (J. Lau, *in litt*. 2001).

No information on threats that may have affected *Phyllostegia mollis* on Molokai is available.

Plantago princeps (laukahi kuahiwi)

Plantago princeps, a short-lived member of the plantain family (Plantaginaceae), is a small shrub or robust perennial herb. This species differs from other native members of the genus in Hawaii by its large branched stems, flowers at nearly right angles to the axis of the flower cluster, and fruits that break open at a point two-thirds from the base. The four varieties, *anomala, laxiflora, longibracteata,* and *princeps,* are distinguished by the branching and pubescence of the stems; the size, pubescence, and venation of the leaves; the density of the inflorescence; and the orientation of the flowers (Wagner *et al*. 1999).

Little is known about the life history of this plant. Reproductive cycles, longevity, specific environmental requirements, and limiting factors are generally unknown. However, individuals have been observed in fruit from April through September (Service 1999a).

Plantago princeps is historically and currently known from Kauai, Oahu, Molokai, Hawaii, and Maui. It is no longer extant on the island of Hawaii. *Plantago princeps* var. *anomala* is currently known from Kauai and Oahu; var. *longibracteata* is known from Kauai and Oahu; var. *princeps* is known from Oahu; and var. *laxiflora* is known from Molokai and Maui. On Molokai, there is currently one remaining population of *Plantago princeps* var. *laxiflora* with five individuals in Kawela Gulch on privately owned lands (GDSI 2000; HINHP Database 2000; Service 1999a).

On Molokai, *Plantago princeps* var. *laxiflora* is typically found on streambanks in *Metrosideros polymorpha* lowland mesic forest between 592 and 1,213 m (1,942 and 3,979 ft) elevation. Associated plant species include *Coprosma* sp., *Wikstroemia oahuensis* (akia), *Pipturus albidus, Dodonaea viscosa, Dryopteris unidentata,* or *Cyanea* sp. (J. Lau, *in litt*. 2001; Wagner *et al*. 1999).

The primary threats to *Plantago princeps* var. *laxiflora* on Molokai are predation and habitat degradation by feral pigs and goats and competition with various non-native plant species (59 FR 56333; Service 1999a).

Platanthera holochila (NCN)

Platanthera holochila, a short-lived perennial and a member of the orchid family (Orchidaceae), is an erect, deciduous herb. The stems arise from underground tubers, the pale green leaves are lance to egg-shaped and the greenish-yellow flowers occur in open spikes. This is the only species of this genus that occurs in the Hawaiian Islands (Wagner *et al*. 1999).

Little is known about the life history of this plant. Reproductive cycles, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999a).

Historically, *Platanthera holochila* was known from Maui, Oahu, Molokai, and Kauai. Currently, *Platanthera holochila* is extant on Kauai, Molokai, and Maui. On Molokai, one population with less than 10 individuals is reported from Hanalilolilo on the privately owned land of Kamakou Preserve (HINHP Database 2000; GDSI 2000).

On Molokai, *Platanthera holochila* is found on slightly sloping ridgetops in *Metrosideros polymorpha-Cheirodendron trigynum* wet forest or *Metrosideros polymorpha* mixed montane bog between 551 and 1,382 m (1,807 and 4,532 ft) elevation. Associated native plants include *Cibotium* sp., *Oreobolus furcatus* (NCN), or *Styphelia tameiameiae* (J. Lau, *in litt*. 2001).

The primary threats to *Platanthera holochila* on Molokai are habitat degradation and/or destruction by feral pigs; competition with non-native plants; and a risk of extinction from naturally occurring events and/or reduced reproductive vigor, due to the small number of remaining populations and individuals. Predation by slugs may also be a potential threat to this species (61 FR 53108; Service 1999a).

Pteris lidgatei (NCN)

Pteris lidgatei, a short-lived member of the maidenhair fern family (Adiantaceae), is a coarse perennial herb, 0.5 to 1 m (1.6 to 3.3 ft) tall. It has a horizontal rhizome 1.5 cm (0.6 in.) thick and at least 10 cm (3.9 in) long when mature. The fronds, including the leaf stalks, are 60 to 95 cm (24 to 37 in) long and 20 to 45 cm (8 to 18 in) wide. The leafy portion of the frond is oblong-deltoid to broadly ovate-deltoid, thick, brittle, and dark gray-green. The sori are apparently marginal in position, either fused into long linear sori, or more typically separated into distinct shorter sori, with intermediate conditions being common. *Pteris lidgatei* can be distinguished from other species of *Pteris* in the Hawaiian Islands by the texture of its fronds and the tendency of the sori along the leaf margins to be broken into short segments instead of being fused into continuous marginal sori (Wagner and Wagner 1992).

Additional information on the life history of this plant, reproductive cycles, longevity, specific environmental requirements, and limiting factors is generally unknown (Service 1998a).

Historically, *Pteris lidgatei* was found on Oahu, Molokai, and West Maui. Currently, this species is known from Oahu and Maui. This species was last collected on Molokai in 1912 from the slopes of Olokui by C. N. Forbes (HINHP Database 2000).

On Molokai, *Pteris lidgatei* grew on steep stream banks between 78 and 1,266 m (256 and 4,152 ft) elevation in wet forest (HINHP Database 2000).

No information on threats that may have affected *Pteris lidgatei* on Molokai is available.

Schiedea nuttallii (NCN)

Schiedea nuttallii, a long-lived perennial member of the pink family (Caryophyllaceae), is a generally hairless, erect subshrub. This species is distinguished from others in this endemic Hawaiian genus by its habit, length of the stem internodes, length of

the inflorescence, number of flowers per inflorescence, smaller leaves, smaller flowers, and smaller seeds (Wagner *et al.* 1999).

Little is known about the life history of *Schiedea nuttallii*. Based on field and greenhouse observations, it is hermaphroditic (flowers contain both sexes). Plants located close to the Makua rim on Oahu have been under observation for 10 years, and they appear to be long-lived. *Schiedea nuttallii* appears to be an outcrossing species. Under greenhouse conditions, plants fail to set seed unless pollinated, suggesting that this species requires insects for pollination. Seedlings of *Schiedea* occurring in mesic or wet sites are apparently consumed by introduced slugs and snails. These have been observed feeding on *S. membranacea*, another mesic forest species occurring on Kauai. In contrast to mesic forest species, *Schiedea* occurring in dry areas produce abundant seedlings following winter rains, presumably because there are fewer alien consumers in drier sites. Fruits and flowers are abundant in the wet season but can be found throughout the year. Little is known about the life history of this plant. Reproductive cycles, longevity, specific environmental requirements, and limiting factors are unknown (Weller *et al.* 1990; Service 1999a; Kapua Kawelo, U.S. Dept. of Defense, Army Environmental, *in litt.* 1999).

Historically, *Schiedea nuttallii* was known from scattered locations on southeastern Kauai, Oahu, Molokai, and Maui. Currently, known populations occur on Kauai, Oahu, and Molokai. On Molokai one population with 22 individuals of *Schiedea nuttallii* occurs on the privately owned lands of TNCH's Kamakou Preserve (HINHP Database 2000; GDSI 2000; Service 1999a).

On Molokai, *Schiedea nuttallii* typically grows in streamside grottos in wet *Metrosideros polymorpha-Cheirodendron trigynum* forest at elevations between 677 and 1,423 m (2,220 and 4,667 ft). Associated plants include *Asplenium lobulatum* (NCN), *Asplenium macraei* (NCN), *Thelypteris sandwicensis* (NCN), *Vandenboschia davallioides* (NCN), *Cyrtandra hawaiiensis* (haiwale), or *Asplenium unilaterale* (NCN) (J. Lau, *in litt.* 2001).

Schiedea nuttallii on Molokai is seriously threatened by competition with several non-native plants; predation by the black twig borer, slugs, and snails; and a risk of extinction from naturally occurring events (*e.g.*, landslides) and/or reduced reproductive vigor due to the small number of individuals (Service 1999a; 61 FR 53108).

Sesbania tomentosa (ohai)

Sesbania tomentosa, a short-lived perennial and a member of the pea family (Fabaceae), is typically a sprawling shrub but may also be a small tree. Each compound leaf consists of 18 to 38 oblong to elliptic leaflets, which are usually sparsely to densely covered with silky hairs. The flowers are salmon tinged with yellow, orange-red, scarlet or rarely, pure yellow. *Sesbania tomentosa* is the only endemic Hawaiian species in the genus, differing from the naturalized *Sesbania sesban* (Egyptian rattlepod) by the color of the flowers, the longer petals and calyx, and the number of seeds per pod (Geesink *et al.* 1999).

The pollination biology of *Sesbania tomentosa* is being studied by David Hopper, a graduate student in the Department of Zoology at the University of Hawaii at Manoa. His preliminary findings suggest that, although many insects visit *Sesbania* flowers, the majority of successful pollination is accomplished by native bees of the genus *Hylaeus* and that populations at Kaena Point on Oahu are probably pollinator-limited. Flowering at Kaena Point is highest during the winter-spring rains, and gradually declines throughout the rest of the year. Other aspects of this plant's life history are unknown (Service 1999a).

Currently, *Sesbania tomentosa* occurs on at least six of the eight main Hawaiian Islands (Kauai, Oahu, Molokai, Kahoolawe, Maui, and Hawaii) and in the Northwestern Hawaiian Islands (Nihoa and Necker). It is no longer extant on Niihau and Lanai. On Molokai, *Sesbania tomentosa* is known from six populations with an estimated total of 100 to 150 individuals. One of the populations occur from Moomomi to Nenehanaupo and five from Kamiloloa to Makolekau on State- and privately owned lands (Service 1999a; 59 FR 56333; HINHP Database 2000; GDSI 2000).

On Molokai, *Sesbania tomentosa* is found in *Scaevola sericea* coastal dry shrubland on windswept slopes, sea cliffs and weathered basaltic slopes between sea level and 516 m (0 and 1,692 ft) elevation. Associated plant species include *Lipochaeta integrifolia, Jacquemontia sandwicensis, Sida fallax,* or *Dodonaea viscosa* (HINHP Database 2000; Service 1999a).

The primary threats to *Sesbania tomentosa* on Molokai are competition with various non-native plant species, such as *Lantana camara,* and grass species; habitat degradation by feral cattle; lack of adequate pollination; seed predation by rats, mice and, potentially, non-native insects; and destruction by random environmental events (*e.g.*, fire) and by human activities (*e.g.*, use of off-road vehicles) (59 FR 56333; Service 1999a).

Silene lanceolata (NCN)

Silene lanceolata, a member of the pink family (Caryophyllaceae), is an upright, perennial plant with stems 15 to 50 cm (6 to 20 in) long, which are woody at the base. The narrow leaves are smooth except for a fringe of hairs near the base. Flowers are arranged in open clusters. The flowers are white with deeply-lobed, clawed petals. The capsule opens at the top to release reddish-brown seeds. This species is distinguished from *S. alexandri*, the only other member of the genus found on Molokai, by its smaller flowers and capsules and its stamens, which are shorter than the sepals (Wagner *et al.* 1999).

Currently, no life history information is available for this species (Service 1996a).

The historical range of *Silene lanceolata* includes five Hawaiian Islands: Kauai, Oahu, Molokai, Lanai, and Hawaii Island. *Silene lanceolata* is presently extant on the islands of Molokai, Oahu, and Hawaii. On Molokai, a single population of approximately 100 individuals was found in 1987 on private land near Puu Kolekole (K. Wood, *in litt.* 1999; GDSI 2000; Service 1996a).

On Molokai, *Silene lanceolata* grows on gulch slopes, ridge tops, and cliffs in dry to mesic shrubland between 581 and 1,043 m (1,905 and 3,421 ft) elevation. Associated native plant species include *Metrosideros polymorpha, Bidens menziesii, Schiedea* spp. (NCN), *Carex wahuensis, Diospyros sandwicensis, Dodonaea viscosa, Styphelia tameiameiae,* or *Dubautia linearis* (Service 1996a; K. Wood, *in litt.* 1999; J. Lau, *in litt.* 2001).

Habitat destruction by feral ungulates (goats and pigs), wildfires, and competition by invading non-native plants are immediate threats to *Silene lanceolata* on Molokai (57 FR 46325; Service 1996a).

Solanum incompletum (popolo ku mai)

Solanum incompletum, a short-lived perennial member of the nightshade family (Solanaceae), is a woody shrub. Its stems and lower leaf surfaces are covered with prominent reddish prickles or sometimes with yellow fuzzy hairs on young plant parts and lower leaf surfaces. The oval to elliptic leaves have prominent veins on the lower surface and lobed leaf margins. Numerous flowers grow in loose

branching clusters with each flower on a stalk. This species differs from other native members of the genus by being generally prickly and having loosely clustered white flowers, curved anthers about 2 mm (0.08 in.) long, and berries 1 to 2 cm (0.4 to 0.8 in.) in diameter (Symon 1999).

Little is known about the life history of *Solanum incompletum.* Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (59 FR 56333).

Historically, *Solanum incompletum* was known from Lanai, Maui, and the island of Hawaii. According to David Symon (1999), the known distribution of *Solanum incompletum* also extended to the islands of Kauai and Molokai. Currently, *Solanum incompletum* is only known from the island of Hawaii. There are no element occurrence records for this species on Molokai so it is unclear when the last individual was collected (HINHP Database 2000).

Nothing is known of the preferred habitat of, native plant species associated with *Solanum incompletum*, or threats to *Solanum incompletum* on the island of Molokai.

Spermolepis hawaiiensis (NCN)

Spermolepis hawaiiensis, a member of the parsley family (Apiaceae), is a slender annual herb with few branches. Its leaves, dissected into narrow, lance-shaped divisions, are oblong to somewhat oval in outline and grow on stalks. Flowers are arranged in a loose, compound-inflorescence arising from the stem, opposite the leaves. *Spermolepis hawaiiensis* is the only member of the genus native to Hawaii. It is distinguished from other native members of the family by being a non-succulent annual with an umbrella-shaped inflorescence (Constance and Affolter 1999).

Little is known about the life history of *Spermolepis hawaiiensis.* Reproductive cycles, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999a).

Historically, *Spermolepis hawaiiensis* was known from Kauai, Oahu, Lanai and the island of Hawaii. Currently, it is extant on Kauai, Oahu, Molokai, Lanai, Maui, and Hawaii. On Molokai, there is one known population with approximately 600 individuals on privately owned land in Kamalo (59 FR 56333; HINHP Database 2000; GDSI 2000; Service 1999a).

On Molokai, *Spermolepis hawaiiensis* is known from ridge crests and gulch slopes in dry to mesic shrublands between 432 and 972 m (1,416 and 3,188 ft) elevation. Associated plant species include *Dodonaea viscosa, Metrosideros polymorpha*, or *Styphelia tameiameiae* (J. Lau, *in litt.* 2001).

The primary threats to *Spermolepis hawaiiensis* on Molokai are habitat degradation by feral goats; competition with various non-native plants, such as *Melinis minutiflora*, *Lantana camara*, and grasses; and habitat destruction and extinction due to natural environmental events such as erosion, landslides, and rockslides due to natural weathering (59 FR 56333; Service 1999a).

Vigna o-wahuensis (NCN)

Vigna o-wahuensis, a member of the pea family (Fabaceae), is a slender twining short-lived perennial herb with fuzzy stems. Each leaf is made up of three leaflets, which vary in shape from round to linear, and are sparsely or moderately covered with coarse hairs. Flowers, in clusters of one to four, have thin, translucent, pale yellow or greenish yellow petals. The two lowermost petals are fused and appear distinctly beaked. The sparsely hairy calyx has asymmetrical lobes. The fruits are long slender pods that may or may not be slightly inflated and contain 7 to 15 gray to black seeds. This species differs from others in the genus by its thin yellowish petals, sparsely hairy calyx, and thin pods, which may or may not be slightly inflated (Geesink *et al.* 1999).

Additional information on the life history of this plant, reproductive cycles, longevity, specific environmental requirements, and limiting factors are generally unknown (Service 1999a).

Historically, *Vigna o-wahuensis* was known from Niihau, Oahu, and Maui. Currently, *Vigna o-wahuensis* is known from the islands of Molokai, Lanai, Kahoolawe, Maui, and Hawaii. There are no currently known populations on Niihau or Oahu. On Molokai, two populations with approximately 16 individuals occur on privately owned lands at Onini Gulch and Makolelau (GDSI 2000; Service 1999a; HINHP Database 2000).

On Molokai, *Vigna o-wahuensis* occurs in dry to mesic grassland and shrubland between 516 and 1,041 m (1,692 and 3,414 ft) elevation. Associated plant species include *Chenopodium oahuense*, *Cyperus laevigatus* (makaloa), *Eragrostis variabilis*, *Heteropogon contortus*, *Ipomoea* sp. (morning glory), *Scaevola sericea*, *Sida fallax*, *Vitex rotundifolia* (pohinahina), *Dodonaea viscosa*, or *Styphelia tameiameiae* (Geesink *et al.* 1999; HINHP Database 2000; Service 1999a).

The primary threats to *Vigna o-wahuensis* on Molokai are competition with various non-native plant species; and a risk of extinction due to random environmental events (primarily fire), and/or reduced reproductive vigor due to the small number of existing populations and individuals (Service 1999a; 59 FR 56333).

Zanthoxylum hawaiiense (ae)

Zanthoxylum hawaiiense, a long-lived perennial, is a medium-size tree with pale to dark gray bark, and lemon-scented leaves in the citrus family (Rutaceae). Alternate leaves are composed of three small triangular-oval to lance-shaped, toothed leaves (leaflets) with surfaces usually without hairs. *Zanthoxylum hawaiiense* is distinguished from other Hawaiian members of the genus by several characters: three leaflets all of similar size, one joint on lateral leaf stalk, and sickle-shape fruits with a rounded tip (Stone *et al.* 1999).

Additional information on the life history of this plant, reproductive cycles, longevity, specific environmental requirements, and limiting factors are generally unknown (Service 1996b).

Historically, *Zanthoxylum hawaiiense* was known from the islands of Kauai, Molokai, Lanai, southern and southwestern slopes of Haleakala on Maui, and Hawaii. Currently, *Zanthoxylum hawaiiense* is extant on Kauai, Molokai, Maui, and Hawaii. On Molokai, the two extant populations with a total of five individuals are located at Makolelau and Puu Hoi Ridge on private lands (HINHP Database 2000; GDSI 2000).

On Molokai, *Zanthoxylum hawaiiense* is found on gulch slopes in mesic *Metrosideros polymorpha* or *Diospyros sandwicensis* forest between 754 and 1,084 m (2,473 and 3,555 ft) elevation. Associated species include *Dodonaea viscosa*, *Styphelia tameiameiae*, *Pleomele auwahiensis*, *Nestegis sandwicensis*, *Alyxia oliviformis*, *Osteomeles anthyllidifolia*, *Psychotria spp.*, or *Myrsine lanaiensis* (Stone *et al.* 1999; 59 FR 10305; HINHP Database 2000; J. Lau, *in litt.* 2001).

The threats to *Zanthoxylum hawaiiense* on Molokai include browsing, grazing, and trampling by feral goats; competition with non-native plant species; habitat degradation and destruction by humans; and extinction from naturally occurring events (primarily fire) and/or from reduced reproductive vigor due to the small

number of individuals and populations (59 FR 10305; Service 1996b).

A summary of populations and landownership for the 51 plant species reported from the island of Molokai is given in Table 3.

TABLE 3.—SUMMARY OF EXISTING POPULATIONS OCCURRING ON MOLOKAI, AND LANDOWNERSHIP FOR 51 SPECIES REPORTED FROM MOLOKAI

Species	Number of current populations	Landownership		
		Federal	State	Private
Adenophorus periens	1			X
Alectryon macrococcus	3		X	X
Bidens wiebkei	3			X
Brighamia rockii	4		X	X
Bonamia menzeisii	0			
Canavalia molokaiensis	5		X*	X
Centaurium sebaeoides	5		X*	X
Clermontia oblongifolia ssp. brevipes	3			X
Ctenitis squamigera	1			X
Cyanea dunbarii	1		X	
Cyanea grimesiana ssp. grimesiana	2		X	
Cyanea mannii	5		X	X
Cyanea procera	2		X	X
Cyperus trachysanthos	0			
Diellia erecta	3			X
Diplazium molokaiense	0			
Eugenia koolauensis	0			
Flueggea neowawraea	0			
Hedyotis mannii	1			X
Hesperomannia arborescens	1			X
Hibiscus arnottianus ssp. *immaculatus*	2		X	X
Hibiscus brackenridgei	0			
Ischaemum byrone	2			X
Isodendrion pyrifolium	0			
Labordia triflora	1			X
Lysimachia maxima	2			X
Mariscus fauriei	1		X	
Marsilea villosa	4		X	X
Melicope mucronulata	1			X
Melicope munroi	0			
Melicope reflexa	3		X	X
Neraudia sericea	1			X
Peucedanum sandwicense	4		X*	X
Phyllostegia mannii	1			X
Phyllostegia mollis	0			
Plantago princeps	1			X
Platanthera holochila	1			X
Pritchardia munroi	1			X
Pteris lidgatei	0			
Schiedea lydgatei	4		X	X
Schiedea nuttallii	1			X
Schiedea sarmentosa	2			X
Sesbania tomentosa	6		X	X
Silene alexandri	0			
Silene lanceolata	1			X
Solanum incompletum	0			
Spermolepis hawaiiensis	1			X
Stenogyne bifida	5			X
Tetramolopium rockii	3		X*	X
Vigna o-wahuensis	2			X
Zanthoxylum hawaiiense	2			X

*Some populations are on State land that is managed by the National Park Service at Kalaupapa National Historical Park and/or the U.S. Coast Guard Reservation at Kalaupapa.

Previous Federal Action

Federal action on these plants began as a result of Section 12 of the Act which directed the Secretary of the Smithsonian Institution to prepare a report on plants considered to be endangered, threatened, or extinct in the United States. This report, designated as House Document No. 94–51, was presented to Congress on January 9, 1975. In that document, *Adenophorus periens, Alectryon macrococcus* (as *Alectryon macrococcum* var. *macrococcum* and *Alectryon mahoe*), *Bidens wiebkei, Brighamia rockii, Canavalia molokaiensis, Hedyotis mannii* (as *Hedyotis thyrsoidea* var. *thyrsoidea), Hesperomannia arborescens* (as *Hesperomannia arborescens* var. *bushiana* and var. *swezeyi*), *Hibiscus arnottianus* ssp. *immaculatus* (as *Hibiscus immaculatus*), *Ischaemum byrone, Marsilea villosa, Melicope reflexa* (as *Pelea reflexa), Neraudia sericea* (as *Neraudia kahoolawensis*), *Peucedanum*

sandwicense (as *Peucedanum kauaiense*), *Plantago princeps* (as *Plantago princeps* var. *elata,* var. *laxifolia,* var. *princeps*), *Sesbania tomentosa* (as *Sesbania hobdyi* and *Sesbania tomentosa* var. *tomentosa*), *Silene alexandri, Silene lanceolata, Vigna o-wahuensis* (as *Vigna sandwicensis* var. *heterophylla* and var. *sandwicensis*), and *Zanthoxylum hawaiiense* (as *Zanthoxylum hawaiiense* var. *citiodora*) were considered endangered; *Diellia erecta* and *Zanthoxylum hawaiiense* (as *Zanthoxylum hawaiiense* var. *hawaiiense* and var. *velutinosum*) were considered threatened; and, *Labordia triflora, Melicope mucronulata* (as *Pelea mucronulata*), *Plantago princeps* (as *Plantago princeps* var. *acaulis,* var. *denticulata,* and var. *queleniana*), and *Tetramolopium rockii* were considered to be extinct. On July 1, 1975, the Service published a notice in the **Federal Register** (40 FR 27823) of our acceptance of the Smithsonian report as a petition within the context of Section 4(c)(2) (now Section 4(b)(3)) of the Act, and gave notice of our intention to review the status of the plant taxa named therein. As a result of that review, on June 16, 1976, we published a proposed rule in the **Federal Register** (41 FR 24523) to determine endangered status pursuant to Section 4 of the Act for approximately 1,700 vascular plant taxa, including all of the above taxa except *Labordia triflora* and *Melicope munroi.* The list of 1,700 plant taxa was assembled on the basis of comments and data received by the Smithsonian Institution and the Service in response to House Document No. 94–51 and the July 1, 1975, **Federal Register** publication.

Comments received in response to the 1976 proposal are summarized in an April 26, 1978, **Federal Register** publication (43 FR 17909). In 1978, amendments to the Act required that all proposals over 2 years old be withdrawn. A 1-year grace period was given to proposals already over 2 years old. On December 10, 1979, we published a notice in the **Federal Register** (44 FR 70796) withdrawing the portion of the June 16, 1976, proposal that had not been made final, along with four other proposals that had expired. We published updated notices of review for plants on December 15, 1980 (45 FR 82479), September 27, 1985 (50 FR 39525), February 21, 1990 (55 FR 6183), September 30, 1993 (58 FR 51144), and February 28, 1996 (61 FR 7596). A summary of the status categories for these 51 plant species in the 1980–1996 notices of review can be found in Table 4(a). We listed the 51 species as endangered or threatened between 1991 and 1999. A summary of the listing actions can be found in Table 4(b).

TABLE 4(A).—SUMMARY OF CANDIDACY STATUS FOR 51 PLANT SPECIES FROM MOLOKAI

Species	**Federal Register** Notice of Review				
	1980	1985	1990	1993	1996
Adenophorus periens	C1	C1	C1		
Alectryon macrococcus	C1	C1	C1		
Bidens wiebkei	C1	C1	C1		
Bonamia menziesii	C1	C1	C1		
Brighamia rockii	C1	C1	C1		
Canavalia molokaiensis	C1	C1	C1		
Centaurium sebaeoides	.....	.....	C1		
Clermontia oblongifolia ssp. *brevipes*	.....	.....	C1		
Ctenitis squamigera	C1	C1	C1		
Cyanea dunbarii					
Cyanea grimesiana ssp. *grimesiana*	C1	C1		C2	
Cyanea mannii	.....	.....	C1		
Cyanea procera	.....	.....	C1*		
Cyperus trachysanthos	.....	.....	.....	C2	
Diellia erecta	C1	C1	C1		
Diplazium molokaiense	C1*	C1*	C1		
Eugenia koolaeuensis	C1	C1	C1*	C2*	
Flueggea neowawraea	C1	C1	C1		
Hedyotis mannii	C1*	C1*	C1		
Hesperomannia arborescens	C1	C1	C1		
Hibiscus arnottianus ssp. *immaculatus*	C1	C1	C1		
Hibiscus brackenridgei	C1	C1	C1		
Ischaemum byrone	C1	C1	C1		
Isodendrion pyrifolium	C1	C1	C1	3C	
Labordia triflora	C2	C2		C	
Lysmachia maxima	.....	.....	C2	C2	
Mariscus fauriei	.....	.....	C1		
Marsilea villosa	C1	C1	C1		
Melicope mucronulata	C1	C1	C1		
Melicope munroi	C1*	C1*	C2	C2	
Melicope reflexa	C1	C1	C1		
Neraudia sericea	3A	3A	C1		
Peucedanum sandwicense	C2	C2	C2		
Phyllostegia mannii	.....	.....	C1		
Phyllostegia mollis					
Plantago princeps	C2	C2	C1		
Platanthera holochila	C1	C1	C1	C2	
Pritchardia munroi	C1	C1	C1		
Pteris lidgatei	3C	3C			
Schiedea lydgatei	.....	C1	C1		
Schiedea nuttallii	.....	.....	.....	C2	
Schiedea sarmentosa	.....	.....	C2	C2	
Sesbania tomentosa	C1*	C1*	C1		

TABLE 4(A).—SUMMARY OF CANDIDACY STATUS FOR 51 PLANT SPECIES FROM MOLOKAI—Continued

Species	Federal Register Notice of Review				
	1980	1985	1990	1993	1996
Silene alexandri	C1	C1	C1		
Silene lanceolata	C1	C1	C1		
Solanum incompletum	C1*	C1*	C1		
Spermolepis hawaiiensis	.....	.....	C1		
Stenogyne bifida	.....	.....	C1		
Tetramolopium rockii	C1	C1	C1		
Vigna o-wahuensis	C1	C1	C1		
Zanthoxylum hawaiiense	C1	C1	C1		

Key:
C1: Taxa for which the Service has on file enough sufficient information on biological vulnerability and threat(s) to support proposals to list them as endangered or threatened species.
C1*: Taxa of known vulnerable status in the recent past that may already have become extinct.
C2: Taxa for which there is some evidence of vulnerability, but for which there are not enough data to support listing proposals at this time.
C2*: Taxa for which there is some evidence of vulnerability, but for which there are not enough data to support listing proposals at this time. Taxa's continued existence in doubt, i.e. may be extinct.
3A: Taxa for which the Service has persuasive evidence of extinction. If rediscovered, such taxa might acquire high priority for listing.
3C: Taxa that have proven to be more abundant or widespread than perviously believed and/or those that are not subject to any identifiable threat.
Federal Register Notices of Review:
1980: 45 FR 82479
1985: 50 FR 39525
1990: 55 FR 6183
1993: 58 FR 51144
1996: 61 FR 7596

TABLE 4(B).—SUMMARY OF LISTING ACTIONS FOR 51 PLANT SPECIES FROM MOLOKAI

Species	Federal status	Proposed rule		Final rule		Proposed critical habitat	
		Date	Federal Register	Date	Federal Register	Date	Federal Register
Adenophorus periens	E	09/14/93	58 FR 48012	11/10/94	59 FR 56333	11/07/00	65 FR 66808.
						12/27/00	65 FR 82086.
						12/29/00	65 FR 83158.
						03/04/02	67 FR 9806.
Alectryon macrococcus	E	05/24/91	56 FR 23842	05/15/92	57 FR 20772	11/07/00	65 FR 66808.
						12/18/00	65 FR 79192.
						12/29/00	65 FR 83158.
						01/28/02	67 FR 3940.
						04/03/02	[To be published].
						03/04/02	67 FR 9806.
Bidens wiebkei	E	09/20/91	56 FR 47718	10/08/92	57 FR 46325	12/29/00	65 FR 83158.
Bonamia menzeisii	E	09/14/93	58 FR 48012	11/10/94	59 FR 56333	11/07/00	65 FR 66808.
						12/18/00	65 FR 79192.
						12/27/00	65 FR 82086.
						01/28/02	67 FR 3940.
						04/03/02	[To be published].
						03/04/02	67 FR 9806.
Brighamia rockii	E	09/20/91	56 FR 47718	10/08/92	57 FR 46325	12/29/00	65 FR 83158.
						04/03/02	[To be published].
						03/04/02	67 FR 9806.
Canavalia molokaiensis	E	09/20/91	56 FR 47718	10/08/92	57 FR 46325	12/29/00	65 FR 83158.
Centaurium sebaeoides	E	09/28/90	55 FR 39664	10/29/91	56 FR 55770	11/07/00	65 FR 66808.
						12/18/00	65 FR 79192.
						12/27/00	65 FR 82086.
						12/29/00	65 FR 83158.
						01/28/02	67 FR 3940.
						04/03/02	[To be published].
						03/04/02	67 FR 9806.
Clermontia oblongifolia ssp. brevipes	E	09/20/91	56 FR 47718	10/08/92	57 FR 46325	12/29/00	65 FR 83158.
Ctenitis squamigera	E	06/24/93	58 FR 34231	09/09/94	59 FR 49025	12/18/00	65 FR 79192.
						12/27/00	65 FR 82086.
						12/29/00	65 FR 83158.
						01/28/02	67 FR 3940.
						03/04/02	67 FR 9806.
Cyanea dunbarii	E	10/02/95	60 FR 51436	10/10/96	61 FR 53130	12/29/00	65 FR 83158.

TABLE 4(B).—SUMMARY OF LISTING ACTIONS FOR 51 PLANT SPECIES FROM MOLOKAI—Continued

Species	Federal status	Proposed rule		Final rule		Proposed critical habitat	
		Date	Federal Register	Date	Federal Register	Date	Federal Register
Cyanea grimesiana ssp. grimesiana	E	10/02/95	60 FR 51417	10/10/96	61 FR 53108	12/18/00	65 FR 79192.
						12/27/00	65 FR 82086.
						12/29/00	65 FR 83158.
						04/03/02	[To be published].
						03/04/02	67 FR 9806.
Cyanea mannii	E	09/20/91	56 FR 47718	10/08/92	57 FR 46325	12/29/00	65 FR 83158.
Cyanea procera	E	09/20/91	56 FR 47718	10/08/92	57 FR 46325	12/29/00	65 FR 83158.
Cyperus trachysanthos	E	10/02/95	60 FR 51417	10/10/96	61 FR 53108	11/07/00	65 FR 66808.
						01/28/02	67 FR 3940.
						03/04/02	67 FR 9806.
Diellia erecta	E	09/14/93	58 FR 48012	11/10/94	59 FR 56333	12/18/00	65 FR 79192.
						12/29/00	65 FR 83158.
						01/28/02	67 FR 3940.
						04/03/02	[To be published].
						03/04/02	67 FR 9806.
Diplazium molokaiense	E	12/14/92	57 FR 39066	06/27/94	59 FR 32932	12/18/00	65 FR 79192.
						01/28/02	67 FR 3940.
						04/03/02	[To be published].
						03/04/02	67 FR 9806.
Eugenia koolauensis	E	10/02/95	60 FR 51398	10/10/96	61 FR 53089		
Flueggea neowawraea	E	09/14/93	58 FR 48012	11/10/94	59 FR 56333	11/07/00	65 FR 66808.
						12/18/01	65 FR 79192.
						01/28/02	67 FR 3940.
						04/03/02	[To be published].
Hedyotis mannii	E	09/20/91	56 FR 47718	10/08/92	57 FR 46325	12/18/00	65 FR 79192.
						12/27/00	65 FR 82086.
						12/29/00	65 FR 83158.
						04/03/02	[To be published].
						03/04/02	67 FR 9806.
Hesperomannia arborescens	E	10/14/92	57 FR 47028	03/28/94	59 FR 14482	12/18/00	65 FR 79192.
						12/29/00	65 FR 83158.
						04/03/02	[To be published].
						03/04/02	67 FR 9806.
Hibiscus arnottianus ssp. immaculatus.	E	09/20/91	56 FR 47718	10/08/92	57 FR 46325	12/29/00	65 FR 83158.
Hibiscus brackenridgei	E	09/28/90	55 FR 39664	10/29/91	56 FR 55770	12/18/00	65 FR 79192.
						12/27/00	65 FR 82086.
						04/03/02	[To be published].
						03/04/02	67 FR 9806.
Isodendrion pyrifolium	T	10/02/95	60 FR 51417	10/10/96	61 FR 53108	01/28/02	67 FR 3940.
						04/03/02	[To be published].
						03/04/02	67 FR 9806.
Ischaemum byrone	E	12/17/92	57 FR 59951	03/04/94	59 FR 10305	12/18/00	65 FR 79192.
						12/29/00	65 FR 83158.
						01/28/02	67 FR 3940.
						04/03/02	[To be published].
Labordia triflora	E	05/15/97	62 FR 26757	09/03/99	64 FR 48307	12/29/00	65 FR 83158.
Lysmachia maxima	E	10/02/95	60 FR 51436	10/10/96	61 FR 53130	12/29/00	65 FR 83158.
Mariscus fauriei	E	12/17/92	57 FR 59951	03/04/94	59 FR 10305	12/29/00	65 FR 83158.
Marsilea villosa	E	02/15/91	56 FR 6349	06/22/92	57 FR 27863	12/29/00	65 FR 83158.
Melicope mucronulata	E	05/24/91	56 FR 23842	05/15/92	57 FR 20772	12/18/00	65 FR 79192.
						12/29/00	65 FR 83158.
						04/03/02	[To be published].
Melicope munroi	E	05/15/97	62 FR 26757	09/03/99	64 FR 48307	12/27/00	65 FR 82086.
						03/04/02	67 FR 9806.
Melicope reflexa	E	09/20/91	56 FR 47718	10/08/92	57 FR 46325	12/29/00	65 FR 83158.
Neraudia sericea	E	09/14/93	58 FR 48012	11/10/94	59 FR 56333	12/18/00	65 FR 79192.
						12/29/00	65 FR 83158.
						04/03/02	[To be published].
						03/04/02	67 FR 9806.
Peucedanum sandwicense	T	10/30/91	56 FR 55862	02/25/94	59 FR 9304	11/07/00	65 FR 66808.
						12/18/00	65 FR 79192.
						12/29/00	65 FR 83158.
						01/28/02	67 FR 3940.
						04/03/02	[To be published].
Phyllostegia mannii	E	09/20/91	56 FR 47718	10/08/92	57 FR 46325	04/03/02	[To be published].
Phyllostegia mollis	E	10/02/95	60 FR 51398	10/10/96	61 FR 53089	12/18/00	65 FR 79192.
						04/03/02	[To be published].

TABLE 4(B).—SUMMARY OF LISTING ACTIONS FOR 51 PLANT SPECIES FROM MOLOKAI—Continued

Species	Federal status	Proposed rule		Final rule		Proposed critical habitat	
		Date	Federal Register	Date	Federal Register	Date	Federal Register
Plantago princeps	E	09/14/93	58 FR 48012	11/10/94	59 FR 56333	11/07/00	65 FR 66808.
						12/18/00	65 FR 79192.
						12/29/00	65 FR 83158.
						01/28/02	67 FR 3940.
						04/03/02	[To be published].
Platanthera holochila	E	10/02/95	60 FR 51417	10/10/96	61 FR 53108	11/07/00	65 FR 66808.
						12/18/00	65 FR 79192.
						12/29/00	65 FR 83158.
						01/28/02	67 FR 3940.
						04/03/02	[To be published].
Pritchardia munroi	E	10/08/92	57 FR 46325	09/20/91	56 FR 47718		
Pteris lidgatei	E	10/02/95	60 FR 51398	10/10/96	61 FR 53089	12/18/00	65 FR 79192.
						04/03/02	[To be published].
Schiedea lydgatei	E	09/20/91	56 FR 47718	10/08/92	57 FR 46325	12/29/00	65 FR 83158.
Schiedea nuttallii	E	10/02/95	60 FR 51417	10/10/96	61 FR 53108	12/29/00	65 FR 83158.
Schiedea sarmentosa	E	10/02/95	60 FR 51436	10/10/96	61 FR 53130	12/29/00	65 FR 83158.
Sesbania tomentosa	E	09/14/93	58 FR 48012	11/10/94	59 FR 56333	11/07/00	65 FR 66808.
						12/18/00	65 FR 79192.
						12/29/00	65 FR 83158.
						01/28/02	67 FR 3940.
						04/03/02	[To be published].
						03/04/02	67 FR 9806.
Silene alexandri	E	09/20/91	56 FR 47718	10/08/92	57 FR 46325	12/29/00	65 FR 83158.
Silene lanceolata	E	09/20/91	56 FR 47718	10/08/92	57 FR 46325	12/29/00	65 FR 83158.
						01/28/02	67 FR 3940.
Solanum incompletum	E	09/14/93	58 FR 48012	11/10/94	59 FR 56333	01/28/02	67 FR 3940.
Spermolepis Hawaiiensis	E	09/14/93	58 FR 48012	11/10/94	59 FR 56333	11/07/00	65 FR 66808.
						12/18/00	65 FR 79192.
						12/27/00	65 FR 82086.
						12/29/00	65 FR 83158.
						01/28/02	67 FR 3940.
						04/03/02	[To be published].
						03/04/02	67 FR 9806.
Stenogyne bifida	E	09/20/91	56 FR 47718	10/08/92	57 FR 46325	12/29/00	65 FR 83158.
Tetramolopium rockii	T	09/20/91	56 FR 47718	10/08/92	57 FR 46325	12/29/00	65 FR 83158.
Vigna o-wahuensis	E	09/14/93	58 FR 48012	11/10/94	59 FR 56333	12/18/00	65 FR 79192.
						12/27/00	65 FR 82086.
						12/29/00	65 FR 83158.
						01/28/02	67 FR 3940.
						04/03/02	[To be published].
						03/04/02	67 FR 9806.
Zanthoxylum hawaiiense	E	12/17/92	57 FR 59951	03/04/94	59 FR 10305	11/07/00	65 FR 66808.
						12/18/00	65 FR 79192.
						12/29/00	65 FR 83158.
						01/28/02	67 FR 3940.
						04/03/02	[To be published].

Key: E=Endangered T=Threatened.

Critical Habitat

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time the species is determined to be endangered or threatened. Our regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat is not prudent when one or both of the following situations exist: (1) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species, or (2) such designation of critical habitat would not be beneficial to the species. At the time each plant was listed, we determined that designation of critical habitat was prudent for two of these plants (*Labordia triflora* and *Melicope munroi*) and not prudent for the other 49 plants because it would not benefit the plant and/or would increase the degree of threat to the species.

The not prudent determinations for the 49 species, along with others, were challenged in *Conservation Council for Hawaii* v. *Babbitt,* 2 F. Supp. 2d 1280 (D. Haw. 1998). On March 9, 1998, the United States District Court for the District of Hawaii, directed us to review the prudency determinations for 245 listed plant species in Hawaii, including 49 of the 51 species reported from Molokai. Among other things, the court held that, in most cases we did not sufficiently demonstrate that the species are threatened by human activity or that such threats would increase with the designation of critical habitat. The court also held that we failed to balance any risks of designating critical habitat against any benefits (*id.* at 1283–85).

Regarding our determination that designating critical habitat would have no additional benefits to the species above and beyond those already provided through the section 7

consultation requirement of the Act, the court ruled that we failed to consider the specific effect of the consultation requirement on each species (*id.* at 1286–88). In addition, the court stated that we did not consider benefits outside of the consultation requirements. In the court's view, these potential benefits include substantive and procedural protections. The court held that, substantively, designation establishes a ''uniform protection plan'' prior to consultation and indicates where compliance with section 7 of the Act is required. Procedurally, the court stated that the designation of critical habitat educates the public, State, and local governments and affords them an opportunity to participate in the designation (*id.* at 1288). The court also stated that private lands may not be excluded from critical habitat designation even though section 7 requirements apply only to Federal agencies. In addition to the potential benefit of informing the public, State, and local governments of the listing and of the areas that are essential to the species' conservation, the court found that there may be Federal activity on private property in the future, even though no such activity may be occurring there at the present (*id.* at 1285–88).

On August 10, 1998, the court ordered us to publish proposed critical habitat designations or non-designations for at least 100 species by November 30, 2000, and to publish proposed designations or non-designations for the remaining 145 species by April 30, 2002 (24 F. Supp. 2d 1074).

At the time we listed *Labordia triflora* and *Melicope munroi* (64 FR 48307) we determined that designation of critical habitat was prudent and that we would develop critical habitat designations for these two taxa, along with eight others, at the same time we developed designations for the 245 Hawaiian plant species. This timetable was challenged in *Conservation Council for Hawaii* v. *Babbitt,* Civ. No. 99–00283 HG (D. Haw. Aug. 19, 1999, Feb. 16, 2000, and March 28, 2000). The court agreed, however, that it was reasonable for us to integrate these ten Maui Nui (Maui, Lanai, Molokai, and Kahoolawe) plant taxa into the schedule established for designating critical habitat for the other 245 Hawaiian plants, and ordered us to publish proposed critical habitat designations for the ten Maui Nui species by November 30, 2000, and to publish final critical habitat designations by November 30, 2001.

On November 30, 1998, we published a notice in the **Federal Register** requesting public comments on our reevaluation of whether designation of critical habitat is prudent for the 245 Hawaiian plants at issue (63 FR 65805). The comment period closed on March 1, 1999, and was reopened from March 24, 1999, to May 24, 1999 (64 FR 14209). We received more than 100 responses from individuals, non-profit organizations, the State of Hawaii Division of Forestry and Wildlife (DOFAW), county governments, and Federal agencies (U.S. Department of Defense-Army, Navy, Air Force). Only a few responses offered information on the status of individual plant species or on current management actions for one or more of the 245 Hawaiian plants. While some of the respondents expressed support for the designation of critical habitat for 245 Hawaiian plants, more than 80 percent opposed the designation of critical habitat for these plants. In general, these respondents opposed designation because they believed it will cause economic hardship, discourage cooperative projects, polarize relationships with hunters, or potentially increase trespass or vandalism on private lands. In addition, commenters also cited a lack of information on the biological and ecological needs of these plants which, they suggested, may lead to designation based on guesswork. The respondents who supported the designation of critical habitat cited that designation would provide a uniform protection plan for the Hawaiian Islands; promote funding for management of these plants; educate the public and State government; and protect partnerships with landowners and build trust.

On February 18, 2000, we mailed letters to more than 100 landowners on the island of Molokai requesting any information considered germane to the management of any of the 51 plants on his/her property, and containing a copy of the November 30, 1998, **Federal Register** notice, a map showing the general locations of the plants that may be on his/her property, and a handout containing general information on critical habitat. We received 25 written responses to our landowner mailing with varying types of information on their current land management activities. These responses included information on the following: fencing, weeding, ungulate control, hunting, control of human access, scientific research, fire control, and propagation and/or planting of native plants. We held one open house on the island of Molokai, at the Mitchell Pauole Community Center, on March 15, 2000, to meet one-on-one with local landowners and other interested members of the public. A total of 14 people attended the open house. In addition we met with Maui County Division of Forestry and Wildlife staff and discussed their management activities on the island.

On December 29, 2000, we published the fourth of the court-ordered prudency determinations for 19 species and proposed critical habitat designations or non-designations for 32 Molokai plants (65 FR 83158). The prudency determinations and proposed critical habitat designations for Kauai and Niihau plants were published on November 7, 2000 (65 FR 66808), for Maui and Kahoolawe plants on December 18, 2000 (65 FR 82086), and for Lanai plants on December 27, 2000 (65 FR 82086). All of these proposed rules had been sent to the **Federal Register** by or on November 30, 2000, as required by the court orders. In those proposals we determined that critical habitat was prudent for 47 species (*Adenophorus periens, Alectryon macrococcus, Bidens wiebkei, Brighamia rockii, Canavalia molokaiensis, Centaurium sebaeoides, Clermontia oblongifolia ssp. brevipes, Ctenitis squamigera, Cyanea dunbarii, Cyanea grimesiana ssp. grimesiana, Cyanea mannii, Cyanea procera, Diellia erecta, Diplazium molokaiense, Flueggea neowawraea, Hedyotis mannii, Hesperomannia arborescens, Hibiscus arnottianus ssp. immaculatus, Hibiscus brackenridgei, Ischaemum byrone, Labordia triflora, Lysimachia maxima, Mariscus fauriei, Marsilea villosa, Melicope mucronulata, Melicope reflexa, Neraudia sericea, Peucedanum sandwicense, Phyllostegia mannii, Phyllostegia mollis, Plantago princeps, Platanthera holochila, Schiedea lydgatei, Schiedea nuttallii, Schiedea sarmentosa, Sesbania tomentosa, Silene alexandri, Silene lanceolata, Spermolepis hawaiiensis, Stenogyne bifida, Tetramolopium rockii, Vigna o-wahuensis,* and *Zanthoxylum hawaiiense*) that are reported from Molokai as well as Kauai, Niihau, Maui, Kahoolawe, and Lanai.

In the December 29, 2000, proposal we determined that it was prudent to designate approximately 6,165 ha (15,230 ac) on Molokai as critical habitat. The publication of the proposed rule opened a 60-day public comment period, which closed on February 27, 2001. On February 22, 2001, we published a notice (66 FR 11132) announcing the reopening of the comment period until April 2, 2001, on the proposal to designate critical habitat for plants from Molokai and a notice of a public hearing. On March 21, 2001, we

held a public hearing at the Mitchell Pauole Center Hall, Molokai.

On October 3, 2001, we submitted a joint stipulation with Earth Justice Legal Defense Fund requesting extension of the court order for the final rules to designate critical habitat for plants from Kauai and Niihau (July 30, 2002), Maui and Kahoolawe (August 23, 2002), Lanai (September 16, 2002), and Molokai (October 16, 2002), citing the need to revise the proposals to incorporate or address new information and comments received during the comment periods. The joint stipulation was approved and ordered by the court on October 5, 2001. On January 28, 2002 (67 FR 3940) (Kauai revised proposal), we determined that designation of critical habitat was prudent for *Isodendrion pyrifolium* and *Solanum incompletum,* two species reported from Molokai as well as Kauai, Maui, and Lanai. The designation of critical habitat is proposed for *Isodendrion pyrifolium* on Molokai. On March 4, 2002 (67 FR 9806) and XX Maui revised proposal, we published revised proposals for plants from Lanai, and Maui and Kahoolawe, and Lanai, respectively. Publication of this revised proposal for plants from Molokai is consistent with the court-ordered stipulation.

Summary of Comments and Recommendations

In the December 29, 2000, proposed rule (65 FR 83158), we requested all interested parties to submit comments on the specifics of the proposal, including information, policy, and proposed critical habitat boundaries as provided in the proposed rule. The first comment period closed on February 27, 2001. We reopened the comment period from February 22, 2001 to April 2, 2001 (66 FR 11132), to accept comments on the proposed designations and to hold a public hearing on March 21, 2001, in Kaunakakai Molokai.

We contacted all appropriate State and Federal agencies, county governments, elected officials, and other interested parties and invited them to comment. In addition, we invited public comment through the publication of notices in the following newspapers: the *Honolulu Advertiser, The Dispatch,* and the *Molokai Advertiser-News* on March 1, 2001. We received one request for a public hearing. We announced the date and time of the public hearing in letters mailed to all interested parties, appropriate State and Federal agencies, county governments, and elected officials, and in notices published in the *Honolulu Advertiser, The Dispatch,* and the *Molokai Advertiser-News* on March 1, 2001. A transcript of the hearing held in Kaunakakai, Molokai on March 21, 2001, is available for inspection (see **ADDRESSES** section).

We requested three botanists who have familiarity with Molokai plants to peer review the proposed critical habitat designations. One reviewer submitted comments on the proposed critical habitat designations, providing updated biological information, critical review, and editorial comments.

We received a total of three oral and five written comments during the two comment periods. These included responses from three State offices and five private organizations or individuals. We reviewed all comments received for substantive issues and new information regarding critical habitat and the Molokai plants. Of the eight comments we received, five supported designation, two were opposed, and one provided information but declined to oppose or support the designation. Similar comments were grouped into six general issues relating specifically to the proposed critical habitat determinations. These are addressed in the following summary.

Issue 1: Biological Justification and Methodology

(1) *Comment:* The designation of critical habitat in unoccupied habitat is particularly important, since this may be the only mechanism available to ensure that Federal actions do not eliminate the habitat needed for the survival and recovery of extremely endangered species.

Our Response: We agree. Our recovery plans for these species (Service 1995a, 1995b, 1996a, 1996b, 1996c, 1997, 1998a, 1998b, 1998c, 1999, 2001) identify the need to expand existing populations and reestablish wild populations within their historical range. We have revised the December 29, 2000, proposal to designate critical habitat for 32 Molokai plant species to incorporate new information and address comments and new information received during the comment periods, including information on areas of potentially suitable unoccupied habitat for some of these species from Molokai.

(2) *Comment:* The proposal provides very limited information on the criteria and data used to determine the areas proposed as critical habitat. For example, some of the data used by the Service was 30 years or older.

Our Response: When developing the December 29, 2000, proposal to designate critical habitat for 32 plants from Molokai, we used the best scientific and commercial data available at the time, including but not limited to, information from the known locations, site-specific species information from the HINHP database and our own rare plant database; species information from the Center for Plant Conservation's (CPC) rare plant monitoring database housed at the University of Hawaii's Lyon Arboretum; the final listing rules for these species; information received at the informational open house held on Molokai at the Mitchell Pauole Center Hall on March 15, 2000; recent biological surveys and reports; our recovery plans for these species; information received in response to outreach materials and requests for species and management information we sent to all landowners, land managers, and interested parties on the island of Molokai; discussions with botanical experts; and recommendations from the Hawaii Pacific Plant Recovery Coordinating Committee (HPPRCC) (Service 1995a, 1995b, 1996a, 1996b, 1996c, 1997, 1998a, 1998b, 1998c, 1999, 2001; HPPRCC 1998; HINHP Database 2000; CPC *in litt.* 1999).

We have revised the proposed designations to incorporate new information, and address comments and new information received during the comment periods. This additional information comes from the Geographic Information System (GIS) coverages (*e.g.* vegetation, soils, annual rainfall, elevation contours, land ownership); completed recovery plans, and information received during the public comment periods and public hearing (R. Hobdy, in litt. 2001; Service 1995a, 1995b, 1996a, 1996b, 1996c, 1997, 1998a, 1998b, 1998c, 1999, 2001).

(3a) *Comment:* The proposed critical habitat designations were not specific enough, and were over broad by including unsuitable habitat in degraded areas and therefore, failed to comply with Congressional intent to restrict critical habitat to those areas ''essential to the conservation of the species.'' (3b) The designation was not inclusive enough and failed to include areas that Molokai plants have used and are necessary for recovery of the species.

Our Response: The presence of non-native plants does not preclude designation of an area as critical habitat, if the area contains the physical and biological features that are essential to the conservation of the species and that may require special management considerations or protection. We used the best scientific information available to develop the December 29, 2000, proposal to designate critical habitat for 32 Molokai plants. This information is detailed above in our response to Comment (2).

We have revised the proposed designations published in the December

29, 2000, proposal for Molokai plants to incorporate new information, and address comments and new information received during the comment periods. We used the best available information, including expert scientific opinion, to identify the physical and biological features (type of plant community, associated species, and locale information such as rocky cliffs, talus slopes, stream banks) essential to the conservation of each species, and to identify potentially suitable habitat within the known historic range of each species. Of the area identified as potentially suitable habitat for a species, only those areas within the least disturbed suitable habitat were proposed as critical habitat for the species.

We invite comments from the public that provide information on potentially suitable habitat within the known historic range of each species and whether lands within the proposed critical habitat provide for the conservation of one or more of the species.

(4) *Comment:* The Service avoided a statutory obligation to determine whether the benefits of excluding particular areas (*e.g.,* areas with conservation agreements, licenses with Department of Hawaiian Homelands, protection plans, etc.) from critical habitat designation outweigh the benefits of including each area.

Our Response: Section 4(b)(2) of the Act requires that we consider the economic and other impacts of critical habitat designation and allows us to areas when the benefits of exclusion outweigh the benefits of designation, provided the exclusion will not result in the extinction of the species. We base our decision to exclude an area from critical habitat designation on the best scientific data available, taking into consideration the economic and other impacts of specifying any particular area as critical habitat. We will complete an economic analysis on this proposed rule, and consider the results of this analysis and comments received on the analysis and the new proposed rule. We will use that economic analysis as well as all other information about potential impacts of the designation in determining whether exclusions under section 4(b)(2) are appropriate (see 50 CFR 424.19).

We will provide technical assistance and work closely with applicants throughout the development of any future Habitat Conservation Plans (HCPs) or other conservation plans to identify lands essential for the long-term conservation of the Molokai plants and appropriate management for those lands. If an HCP or other conservation management plan is approved by us, we will reassess the critical habitat boundaries in light of the conservation plan. We will seek to undertake this review when an HCP or conservation management plan is approved, but funding constraints may influence the timing of such a review.

Issue 2: Site-Specific Biological Comments

(5) *Comment:* Critical habitat should be designated for *Pritchardia munroi* or loulu palm species if the units are of adequate ecological size and because the habitat is too inaccessible and remote for vandals.

Our Response: We have revised the December 29, 2000, proposal to designate critical habitat for 32 plants from Molokai to incorporate new information, and address comments and new information received during the comment periods. However, no additional information was provided during the comment periods that would ensure the protection of *Pritchardia munroi* from vandalism or collection if critical habitat was designated for this species on Molokai. As previously discussed in the December 29, 2000, proposal, we believe that the benefits of designating critical habitat do not outweigh the potential increased threats from vandalism or collection of *Pritchardia munroi.* Several nurseries advertise and sell *Pritchardia* palms, including *Pritchardia munroi* and six other Federally listed *Pritchardia* species. Given the considerations described in the November 7, 2000, and December 29, 2000, proposals regarding instances of vandalism, collection, and commercial trade of Hawaiian species of *Pritchardia* no change is made to the December 29, 2000, prudency determination for *Pritcharida munroi.*

(6) *Comment:* Department of Hawaiian Homelands should be excluded from the critical habitat designation because plant protection and management plans are under development. (6b) *Comment:* Since critical habitat threats are being addressed, and management plans are in place, the Department of Hawaiian Homelands (DHHL) requests exclusion from Units D, E, H, K, and Y

Our Response: We agree that endangered species management plans can provide special management for lands such that they no longer meet the definition of critical habitat. Pursuant to the definition of critical habitat in section 3 of the Act, the primary constituent elements as found in any area so designated must also require ''special management considerations or protections.'' Adequate special management or protection is provided by a legally operative plan that addresses the maintenance and improvement of the essential elements and provides for the long-term conservation of the species. We consider a plan adequate when it provides: (1) A conservation benefit to the species (*i.e.,* the plan must maintain or provide for an increase in the species' population or the enhancement or restoration of its habitat within the area covered by the plan); (2) assurances that the management plan will be implemented (*i.e.,* those responsible for implementing the plan are capable of accomplishing the objectives, have an implementation schedule and/or have adequate funding for the management plan); and, (3) assurances the conservation plan will be effective (*i.e.,* it identifies biological goals, has provisions for reporting progress, and is of a duration sufficient to implement the plan and achieves the plan's goals and objectives). If an area is covered by a plan accomplishes these things, it does not constitute critical habitat as defined by the Act because the primary constituent elements found there are not in need of special management.

At this time we are not able to find that management on these lands is adequate to preclude proposed designations of critical habitat. We are aware that the State of Hawaii, the Department of Hawaiian Homelands, and other private landowners are considering the development of land management plans or agreements that may promote the conservation of endangered and threatened plant species on the island of Molokai. We support these efforts, and we view such plans as important in helping meet species recovery goals, and ultimately can result in delisting of the species. We intend to work closely with any interested landowner or land manager in the development of conservation planning efforts for these, and other, endangered and threatened plants. If new information indicates any of these areas should not be included in the critical habitat designations because they no longer meet the definition of critical habitat, we may revise the proposed critical habitat designations in this proposal to exclude these areas. We agree that implementation of management actions for the conservation of these species should proceed; however, both the Act and the relevant court order requires us to proceed with designation at this time based on the best information available.

(7) *Comment:* The State of Hawaii identified specific areas that they

thought should not be designated as critical habitat.

Our Response: During the public comment periods for the December 29, 2000, proposal for plants from Molokai, we received written comments and a map showing the DOFAW's vegetation classes and recommended critical habitat units. We have revised the December 29, 2000, proposed designations to incorporate new information, and address comments and new information received during the comment periods, including information received from DOFAW.

We evaluated DOFAW's comments on a species-by-species basis and incorporated information that was consistent with our methodology. DOFAW recommended deletion of some of the proposed critical habitat units as they do not believe these areas are suitable for the recovery of some species because they (DOFAW) would not be able to manage these areas with their limited staff and funding. Because the basis for identifying areas by DOFAW was made on the manageability of the area, their mapping of habitat is distinct from the regulatory designation of critical habitat as defined by the Act.

Issue 3: Legal Issues

(8) *Comment:* A premise for the proposed rule is that the Service was ordered by the court on August 10, 1998, to designate critical habitat by November 30, 2000. The proposal was published on December 29, 2000. Thus, the Service is negligent in meeting its court ordered deadline.

Our Response: The proposed rules for plants from Kauai, Niihau, Maui, Kahoolawe, Lanai, and Molokai had been sent to the **Federal Register** by or on November 30, 2000, as required by the court orders. On October 3, 2001, we submitted a joint stipulation with Earth Justice Legal Defense Fund requesting extension of the court orders for the final rules to designate critical habitat for plants from Kauai and Niihau (July 30, 2002), Maui and Kahoolawe (August 23, 2002), Lanai (September 16, 2002), and Molokai (October 16, 2002), citing the need to revise the proposals to incorporate or address new information and comments received during the comment periods on the December 29, 2000, proposal for plants from Molokai. The joint stipulation was approved and ordered by the court on October 5, 2001. Publication of this revised proposal for plants from Molokai is consistent with the joint stipulation.

(9) *Comment:* The Service should designate critical habitat for Moomomi, Pelekunu, and Kamakou Preserves since excluding them potentially violates the mandatory duty to designate critical habitat ''to the maximum extent prudent and determinable.'' 16 U.S.C. 1533(a)(3).

Our Response: Critical habitat is defined in section 3 of the Act as: (i) The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management consideration or protection; and (ii) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. ''Conservation'' means the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which listing under the Act is no longer necessary.

The Service found that the plants and their habitats within the Moomomi Preserve, Pelekunu Preserve, and Kamakou Preserve receive long-term protection and management and, thus, these lands are not in need of additional special management considerations or protection. In our December 29, 2000, proposal we determined that the private lands within Moomomi Preserve, Kamakou Preserve, and Pelekunu Preserve do not meet the definition of critical habitat in the Act, and we did not propose designation of these lands as critical habitat. No change is made to this determination in this revised proposal and it is hereby incorporated by reference (65 FR 82086). Should the status of these preserves change, for example by nonrenewal of a partnership agreement or termination of funding, we will reconsider whether the lands within Moomomi, Kamakou, and Pelekunu preserves meet the definition of critical habitat. If so, we have the authority to proposed to amend critical habitat to include such area(s) at that time (50 CFR 424.12(g)).

Issue 4: Mapping and Primary Constituent Elements

(10a) *Comment:* The designated areas are too large. (10b) *Comment:* The units are not large enough, and don't allow for changes that occur during known environmental processes. (10c) *Comment:* The 586-meter radius is arbitrary and may not work for all species, natural communities, and habitats. (10d) *Comment:* The highly irregular and fragmented shape of proposed units make it difficult to determine if projects are within critical habitat.

Our Response: Based on a review of new biological information and public comments received, we have revised the proposed designations published in the December 29, 2000, proposal for Molokai plants to incorporate new information, and address comments received during the comment periods. The 586 m (1,924 ft) radius circle used to delineate critical habitat for each species in the December 2000 proposal may not insure enough area to provide for the proper ecological functions of the habitat supporting the plant. In this revised proposal, areas that contain habitat necessary for conservation were identified and delineated on a species by species basis. When species units overlapped, we combined units for ease of mapping (see also Methods section). We made an effort to avoid developed areas, such as towns and other similar lands, that are unlikely to contribute to the conservation of these species. However, the minimum mapping unit that we used to approximate our delineation of critical habitat for these species did not allow us to exclude all such developed areas. In addition, existing features and structures within the boundaries of the mapped unit, such as buildings, roads, aqueducts, telecommunications equipment, radars, telemetry antennas, radars, missile launch sites, arboreta and gardens, heiau (indigenous places of worship or shrines), airports, other paved areas, and other rural residential landscaped areas do not contain one or more of the primary constituent elements and would be excluded under the terms of this proposed regulation. The areas we are proposing to designate as critical habitat provide some or all of the habitat components essential for the conservation of 46 plant species from Molokai.

Issue 5: Definition of Critical Habitat

(11) *Comment:* Critical habitat is being designated in otherwise protected areas, such as State conservation lands.

Our Response: In the November 7, 2000, proposal we examined all currently occupied sites containing one or more of the primary constituent elements considered essential to the conservation of the Molokai plant species to determine if additional special management considerations or protection are required above those currently provided. We reviewed all available management information on these plants at these sites, including published reports and surveys; annual performance and progress reports; management plans; grants; memoranda of understanding and cooperative agreements; DOFAW planning

documents; internal letters and memos; biological assessments and environmental impact statements; and section 7 consultations. Additionally, each public (*i.e.,* county, State, or Federal government holdings) and private landowner on the island of Molokai with a known occurrence of one of the plant species was contacted by mail. We reviewed all information received in response to our landowner mailing and open house held at Kaunakakai on the island of Molokai on March 15, 2000. When clarification was required on the information provided to us, we followed up with a telephone contact. In addition, we reviewed new biological information and public comments received on the December 29, 2000, proposal during the public comment periods and at the public hearing.

Pursuant to the definition of critical habitat in section 3 of the Act, the primary constituent elements as found in any area so designated must also require ''special management considerations or protections.'' Adequate special management or protection is provided by a legally operative plan that addresses the maintenance and improvement of the essential elements and provides for the long-term conservation of the species. We consider a plan adequate when it provides: (1) A conservation benefit to the species (*i.e.,* the plan must maintain or provide for an increase in the species' population or the enhancement or restoration of its habitat within the area covered by the plan); (2) assurances that the management plan will be implemented (*i.e.,* those responsible for implementing the plan are capable of accomplishing the objectives, have an implementation schedule and/or have adequate funding for the management plan); and (3) assurances the conservation plan will be effective (*i.e.,* it identifies biological goals, has provisions for reporting progress, and is of a duration sufficient to implement the plan and achieves the plan's goals and objectives). If an area is covered by a plan that meets these criteria, it does not constitute critical habitat as defined by the Act because the primary constituent elements found there are not in need of special management.

Upon review of the above documents, we were not able to find that management on these lands was adequate to preclude proposed designations of critical habitat. We are aware that the State of Hawaii, and other private landowners are considering the development of land management plans or agreements that may promote the conservation of endangered and threatened plant species on the island of Molokai. We support these efforts, and we view such plans as important in helping meet species recovery goals, and ultimately can result in delisting of the species. We intend to work closely with any interested landowner or land manager in the development of conservation planning efforts for these, and other, endangered and threatened plants. If new information indicates any of these areas should not be included in the critical habitat designations because they no longer meet the definition of critical habitat, we may revise the proposed critical habitat designations in this proposal to exclude these areas. We agree that implementation of management actions for the conservation of these species should proceed however, both the Act and the relevant court order requires us to proceed with designation at this time based on the best information available.

Issue 6: Effects of Designation

(12) *Comment:* Designation of critical habitat will result in restrictions on subsistence hunting and State hunting programs funded under the Federal Aid in Wildlife Restoration Program (Pittman-Robertson program).

Our Response: We believe that game bird and mammal hunting in Hawaii is an important recreational and cultural activity, and we support the continuation of this tradition. The designation of critical habitat would not impose restrictions on state hunting programs except to the extent Federal funding is involved. The designation of critical habitat requires Federal agencies to consult under section 7 of the Act with us on actions they carry out, fund, or authorize that might destroy or adversely modify critical habitat. This requirement applies to us, including our distribution of funds to the State through the Federal Aid in Wildlife Restoration Program (Pittman-Robertson Program). Under the Act, activities funded by us or other Federal agencies cannot result in jeopardy to listed species, and they cannot adversely modify or destroy critical habitat. It is well documented that game mammals affect listed plant and animal species. In such areas, we believe it is important to develop and implement sound land management programs that provide both for the conservation of listed species and for continued game hunting. We are committed to working closely with the State and other interested parties to ensure that game management programs that receive Federal funding are implemented consistent with this need.

Issue 7: Economic Issues

(13) *Comment:* We should have been directly contacted for our opinions on the public hearing and impacts of critical habitat designation.

Our Response: We will conduct an analysis of the economic impacts of designating these areas as critical habitat prior to a final determination. When completed, we will announce the availability of the draft economic analysis with a notice in the **Federal Register**, and we will open a 30-day public comment period on the draft economic analysis and proposed rule at that time. In addition, we will mail letters to landowners and other interested parties and publish notices in the local newspapers announcing the availability of the draft economic analysis and seeking public comment on the economic analysis and the proposed rule.

Summary of Changes From the Previous Proposal

In previously published proposals we determined that critical habitat was prudent for 47 species reported from Molokai. No change is made to these 47 prudency determinations in this revised proposal and they are hereby incorporated by reference (65 FR 48307, 65 FR 66808, 65 FR 79192, 65 FR 82086, 65 FR 83158, 67 FR 3940). In addition, at the time we listed *Labordia triflora* and *Melicope munroi*, we determined that the designation of critical habitat was prudent for these two taxa from Molokai (64 FR 48307).

In this proposal we determined that designation of critical habitat is prudent for one species, *Eugenia koolauensis,* for which a prudency determination had not been made previously, and that no longer occurs on Molokai. This species is reported from Molokai and Oahu but is currently only known on Oahu.

In this proposal, we propose designation of critical habitat for 46 species: *Adenophorus periens, Alectryon macrococcus, Bidens wiebkei, Brighamia rockii, Canavalia molokaiensis, Centaurium sebaeoides, Clermontia oblongifolia ssp. brevipes, Ctenitis squamigera, Cyanea dunbarii, Cyanea grimesiana ssp. grimesiana, Cyanea mannii, Cyanea procera, Diellia erecta, Diplazium molokaiense, Eugenia koolauensis, Flueggea neowawraea, Hedyotis mannii, Hesperomannia arborescens, Hibiscus arnottianus ssp. immaculatus, Hibiscus brackenridgei, Ischaemum byrone, Isodendrion pyrifolium, Labordia triflora, Lysimachia maxima, Mariscus fauriei, Marsilea villosa, Melicope mucronulata, Melicope reflexa, Neraudia sericea,*

Peucedanum sandwicense, Phyllostegia mannii, Phyllostegia mollis, Plantago princeps, Platanthera holochila, Schiedea lydgatei, Schiedea nuttallii, Schiedea sarmentosa, Sesbania tomentosa, Silene alexandri, Silene lanceolata, Spermolepis hawaiiensis, Stenogyne bifida, Tetramolopium rockii, Vigna o-wahuensis, and Zanthoxylum hawaiiense on the island of Molokai, based on new information and information received during the comment periods on the December 29, 2000, proposal. Critical habitat is not proposed for four of the 51 species (*Bonamia menziesii, Cyperus trachysanthos, Melicope munroi, and Solanum incompletum*) which no longer occur on the island of Molokai, and for which we are unable to identify any habitat that is essential their conservation on the island of Molokai. Critical habitat is not proposed for one species of loulu palm, *Pritchardia munroi,* for which we determined, on December 29, 2000, that critical habitat designation is not prudent because it would likely increase the threats from vandalism or collection of this species on Molokai. No change is made to that determination here.

In this proposal, areas proposed as critical habitat are occupied by at least one species and some areas include some unoccupied habitat for one or more species.

Based on a review of new biological information and public comments received we have revised our December 29, 2000, proposal to incorporate the following changes in addition to those described above: changes in our approach to delineating proposed critical habitat (see Criteria Used to Identify Critical Habitat); adjustment and refinement of previously identified critical habitat units to more accurately follow the natural topographic features and to avoid nonessential landscape features (agricultural crops, urban or rural development) without primary constituent elements; and, inclusion of new areas within the proposed critical habitat units that are essential for the conservation of one or more of the 46 plant species.

Critical Habitat

Critical habitat is defined in section 3 of the Act as—(i) the specific areas within the geographic area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographic area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. ''Conservation'' means the use of all methods and procedures that are necessary to bring an endangered or a threatened species to the point at which listing under the Act is no longer necessary.

Critical habitat receives protection under section 7 of the Act through the prohibition against destruction or adverse modification of critical habitat with regard to actions carried out, funded, or authorized by a Federal agency. Section 7 also requires conferences on Federal actions that are likely to result in the destruction or adverse modification of proposed critical habitat. Aside from the added protection that may be provided under section 7, the Act does not provide other forms of protection to lands designated as critical habitat. Because consultation under section 7 of the Act does not apply to activities on private or other non-Federal lands that do not involve a Federal nexus, critical habitat designation would not afford any additional regulatory protections under the Act.

Critical habitat also provides non-regulatory benefits to the species by informing the public and private sectors of areas that are important for species recovery and where conservation actions would be most effective. Designation of critical habitat can help focus conservation activities for a listed species by identifying areas that contain the physical and biological features that are essential for the conservation of that species, and can alert the public as well as land-managing agencies to the importance of those areas. Critical habitat also identifies areas that may require special management considerations or protection, and may help provide protection to areas where significant threats to the species have been identified to help to avoid accidental damage to such areas.

In order to be included in a critical habitat designation, the habitat must first be ''essential to the conservation of the species.'' Critical habitat designations identify, to the extent known using the best scientific and commercial data available, habitat areas provide at least one of the physical or biological features essential to the conservation of the species (primary constituent elements, as defined at 50 CFR 424.12(b)). Section 3(5)(C) of the Act states that not all areas that can be occupied by a species should be designated as critical habitat unless the Secretary determines that all such areas are essential to the conservation of the species. Our regulations (50 CFR 424.12(e)) also state that, ''The Secretary shall designate as critical habitat areas outside the geographic area presently occupied by the species only when a designation limited to its present range would be inadequate to ensure the conservation of the species.''

Section 4(b)(2) of the Act requires that we take into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat. We may exclude areas from critical habitat designation when the benefits of exclusion outweigh the benefits of including the areas within critical habitat, provided the exclusion will not result in extinction of the species.

Our Policy on Information Standards Under the Endangered Species Act, published on July 1, 1994 (59 FR 34271), provides criteria, establishes procedures, and provides guidance to ensure that decisions made by the Service represent the best scientific and commercial data available. It requires that our biologists, to the extent consistent with the Act and with the use of the best scientific and commercial data available, use primary and original sources of information as the basis for recommendations to designate critical habitat. When determining which areas are critical habitat, a primary source of information should be the listing rule for the species. Additional information may be obtained from a recovery plan, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, and biological assessments or other unpublished materials.

Section 4 requires that we designate critical habitat based on what we know at the time of designation. Habitat is often dynamic, and species may move from one area to another over time. Furthermore, we recognize that designation of critical habitat may not include all of the habitat areas that may eventually be determined to be necessary for the recovery of the species. For these reasons, critical habitat designations do not signal that habitat outside the designation is unimportant or may not be required for recovery. Areas outside the critical habitat designation will continue to be subject to conservation actions that may be implemented under section 7(a)(1) and to the regulatory protections afforded by the section 7(a)(2) jeopardy standard and the section 9 prohibitions, as determined on the basis of the best available information at the time of the action. Federally funded or assisted projects affecting listed species outside their designated critical habitat areas

may still result in jeopardy findings in some cases. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, HCPs, or other species conservation planning efforts if new information available to these planning efforts calls for a different outcome.

A. Prudency Redeterminations

We originally determined that designation of critical habitat was prudent for 19 species from the island of Molokai on December 29, 2000. These species are: *Bidens wiebkei, Brighamia rockii, Canavalia molokaiensis, Clermontia oblongifolia* ssp. *brevipes, Cyanea dunbarii, Cyanea mannii, Cyanea procera, Hibiscus arnottianus* ssp. *immaculatus, Lysimachia maxima, Mariscus fauriei, Marsilea villosa, Melicope reflexa, Phyllostegia mannii, Schiedea lydgatei, Schiedea sarmentosa, Silene alexandri, Silene lanceolata, Stenogyne bifida,* and *Tetramolopium rockii.* In proposals published on November 7, 2000, December 18, 2000, and December 27, 2000, we determined that designation of critical habitat was prudent for 19 plants that are reported from Molokai as well as from Kauai, Niihau, Maui, Kahoolawe, and Lanai. These 19 plants are: *Adenophorus periens, Alectryon macrococcus, Centaurium sebaeoides, Ctenitis squamigera, Cyanea grimesiana* ssp. *grimesiana, Diellia erecta, Hedyotis mannii, Hesperomannia arborescens, Ischaemum byrone, Melicope mucronulata, Neraudia sericea, Peucedanum sandwicense, Plantago princeps, Platanthera holochila, Schiedea nuttallii, Sesbania tomentosa, Spermolepis hawaiiensis, Vigna o-wahuensis,* and *Zanthoxylum hawaiiense.* No change is made to these 38 prudency determinations in this revised proposal and they are hereby incorporated by reference (64 FR 48307, 65 FR 66808, 65 FR 79192, 65 FR 82086, 65 FR 83158). In addition, at the time we listed *Labordia triflora* and *Melicope munroi,* on September 3, 1999, we determined that the designation of critical habitat was prudent for these two taxa from Molokai (64 FR 48307).

No change is made here to the prudency determination for *Pritchardia munroi,* published in the December 29, 2000, proposal and hereby incorporated by reference (65 FR 83158). Since publication of the listing rule for *Pritchardia munroi,* we received information on the commercial trade in palms conducted through the internet (Grant Canterbury, USFWS, *in litt.* 2000). Several nurseries advertise and sell seedlings and young plants, including 13 species of Hawaiian *Pritchardia.* Seven of these species are federally protected, including *Pritchardia munroi.* In light of this information, we believe that designation of critical habitat would likely increase the threat from vandalism or collection to this species of *Pritchardia* on Molokai. Given the considerations described in the December 29, 2000, proposal, we determined that the benefits of designating critical habitat designation did not outweigh the potential increased threats from vandalism or collection, and, therefore, that designation of critical habitat for *Pritchardia munroi* was not prudent. During the public comment periods for the December 29, 2000, proposal one commenter suggested that critical habitat should be designated for this species of palm if the units are of adequate ecological size or because the habitat is too inaccessible and remote for vandals. However, given the considerations described in the December 29, 2000, proposal regarding instances of vandalism, collection, and commercial trade of this species no change is made here to the earlier prudency determination for *Pritchardia munroi* and it is hereby incorporated by reference (65 FR 83158).

In the December 29, 2000, proposal we did not determine prudency nor propose designation of critical habitat for 10 species that no longer occur on Molokai but are reported from one or more other islands. We determined that critical habitat was prudent for nine of these species (*Bonamia menziesii, Cyperus trachysanthos, Diplazium molokaiense, Flueggea neowawraea, Hibiscus brackenridgei, Isodencrion pyrifolium, Phyllostegia mollis, Pteris lidgatei,* and *Solanum incompletum*) in other proposed rules published on November 2, 2000 (Kauai and Niihau), December 18, 2000 (Maui and Kahoolawe), December 27, 2000 (Lanai), and January 28, 2002 (Kauai and Niihau reproposal). No change is made to these prudency determinations for these nine species in this proposal and they are hereby incorporated by reference (65 FR 66808, 65 FR 79192, 65 FR 82086, 67 FR 3940).

To determine whether critical habitat would be prudent for *Eugenia koolaeuensis,* a species for which a prudency determination has not been made previously, and that no longer occurs on Molokai but is reported from one other island (Oahu), we analyzed the potential threats and benefits for this species in accordance with the court orders. This plant was listed as endangered species under the Endangered Species Act of 1973, as amended (Act) in 1996. At that time, we determined that designation of critical habitat for *Eugenia koolauensis* was not prudent because designation would increase the degree of threat to the species and/or would not benefit the plant. We examined the evidence available for this species and have not, at this time, found specific evidence of taking, vandalism, collection, or trade of these species or of similar species. Consequently, while we remain concerned that these activities could potentially threaten *Eugenia koolauensis* in the future, consistent with applicable regulations (50 CFR 424.12(a)(1)(i)) and the court's discussion of these regulations, we do not find that this species is currently threatened by taking or other human activity, which would be exacerbated by the designation of critical habitat. In the absence of finding that critical habitat would increase threats to a species, if there are any benefits to critical habitat designation, then a prudent finding is warranted. The potential benefits include: (1) Triggering section 7 consultation in new areas where it would not otherwise occur because, for example, it is or has become unoccupied or the occupancy is in question; (2) focusing conservation activities on the most essential areas; (3) providing educational benefits to State or county governments or private entities; and (4) preventing people from causing inadvertent harm to the species. In the case of *Eugenia koolauensis* there would be some benefits to critical habitat. The primary regulatory effect of critical habitat is the section 7 requirement that Federal agencies refrain from taking any action that destroys or adversely affects critical habitat. *Eugenia koolauensis* is reported from Federal lands or lands that are administered by a Federal agency on Oahu (the U.S. Army's Schofield Barracks Military Reservation and Kawailoa Training Area) where actions are subject to section 7 consultation, as well as on State and private lands. Although currently there may be limited Federal activities on these State and private lands, there could be Federal actions affecting these lands in the future. While a critical habitat designation for habitat currently occupied by *Eugenia koolauensis* would not likely change the section 7 consultation outcome, since an action that destroys or adversely modifies such critical habitat would also be likely to result in jeopardy to the species, there may be instances where section 7 consultation would be triggered only if

critical habitat were designated, such as on Molokai. There may also be some educational or informational benefits to the designation of critical habitat. Educational benefits include the notification of landowner(s), land managers, and the general public of the importance of protecting the habitat of this species and dissemination of information regarding its essential habitat requirements. Therefore, we propose that designation of critical habitat is prudent for *Eugenia koolauensis.*

B. Methods

As required by the Act (section 4(b)(2)) and regulations at 50 CFR 424.12, we used the best scientific data available to determine areas that are essential to conserve *Adenophorus periens, Alectryon macrococcus, Bidens wiebkei, Brighamia rockii, Canavalia molokaiensis, Centaurium sebaeoides, Clermontia oblongifolia* ssp. *brevipes, Ctenitis squamigera, Cyanea dunbarii, Cyanea mannii, Cyanea grimesiana* ssp. *grimesiana, Cyanea procera, Diellia erecta, Diplazium molokaiense, Eugenia koolauensis, Flueggea neowawraea, Hedyotis mannii, Hesperomannia arborescens, Hibiscus arnottianus* ssp. *immaculatus, Hibiscus brackenridgei, Ischaemum byrone, Isodendrion pyrifolium, Labordia triflora, Lysimachia maxima, Mariscus fauriei, Marsilea villosa, Melicope mucronulata, Melicope reflexa, Neraudia sericea, Peucedanum sandwicense, Phyllostegia mannii, Phyllostegia mollis, Plantago princeps, Platanthera holochila, Pteris lidgatei, Schiedea lydgatei, Schiedea nuttallii, Schiedea sarmentosa, Sesbania tomentosa, Silene alexandri, Silene lanceolata, Spermolepis hawaiiensis, Stenogyne bifida, Tetramolopium rockii, Vigna o-wahuensis,* and *Zanthoxylum hawaiiense*. This information included the known locations, site-specific species information from the HINHP database and our own rare plant database; species information from the CPC's rare plant monitoring database housed at the University of Hawaii's Lyon Arboretum; island-wide GIS coverages (*e.g.* vegetation, soils, annual rainfall, elevation contours, land ownership); the final listing rules for these 50 species; the December 29, 2000, proposal; information received during the public comment periods and the public hearing; recent biological surveys and reports; our recovery plans for these species; information received in response to outreach materials and requests for species and management information we sent to all landowners, land managers, and interested parties on the island of Molokai; discussions with botanical experts; and recommendations from the HPPRCC (see also the discussion below) (Service 1995a, 1995b, 1996a, 1996b, 1996c, 1997, 1998a, 1998b, 1998c; 1999; HPPRCC 1998; HINHP Database 2001, CPC *in litt.* 1999; 65 FR 83158; J. Lau, *in litt.* 2001; J. Lau *et al., in litt.* 2001).

In 1994, the HPPRCC initiated an effort to identify and map habitat it believed to be important for the recovery of 282 endangered and threatened Hawaiian plant species. The HPPRCC identified these areas on most of the islands in the Hawaiian chain, and in 1999, we published them in our *Recovery Plan for the Multi-Island Plants* (Service 1999a). The HPPRCC expects there will be subsequent efforts to further refine the locations of important habitat areas and that new survey information or research may also lead to additional refinement of identifying and mapping of habitat important for the recovery of these species.

The HPPRCC identified essential habitat areas for all listed, proposed, and candidate plants and evaluated species of concern to determine if essential habitat areas would provide for their habitat needs. However, the HPPRCC's mapping of habitat is distinct from the regulatory designation of critical habitat as defined by the Act. More data has been collected since the recommendations made by the HPPRCC in 1998. Some of the area that was identified by the HPPRCC as inadequately surveyed has now been surveyed in some way. New location data for many species has been gathered. Also, the HPPRCC identified areas as essential based on species clusters (areas that included listed species as well as candidate species, and species of concern) while we have only delineated areas that are essential for the conservation of the 46 listed species at issue. As a result, the proposed critical habitat designations in this proposed rule include not only some habitat that was identified as essential in the 1998 recommendation but also habitat that was not identified as essential in those recommendations.

C. Primary Constituent Elements

In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12, in determining which areas to propose as critical habitat, we are required to base critical habitat determinations on the best scientific and commercial data available and to consider those physical and biological features (primary constituent elements) that are essential to the conservation of the species and that may require special management considerations or protection. Such requirements include, but are not limited to, space for individual and population growth, and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, or rearing of offspring, germination, or seed dispersal; and habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

As described in the discussions for each of the 46 species (*Adenophorus periens, Alectryon macrococcus, Bidens wiebkei, Brighamia rockii, Canavalia molokaiensis, Centaurium sebaeoides, Clermontia oblongifolia* ssp. *brevipes, Ctenitis squamigera, Cyanea dunbarii, Cyanea grimesiana* ssp. *grimesiana, Cyanea mannii, Cyanea procera, Diellia erecta, Diplazium molokaiense, Eugenia koolauensis, Flueggea neowawraea, Hedyotis mannii, Hesperomannia arborescens, Hibiscus arnottianus* ssp. *immaculatus, Hibiscus brackenridgei, Ischaemum byrone, Isodendrion pyrifolium, Labordia triflora, Lysimachia maxima, Mariscus fauriei, Marsilea villosa, Melicope mucronulata, Melicope reflexa, Neraudia sericea, Peucedanum sandwicense, Phyllostegia mannii, Phyllostegia mollis, Plantago princeps, Platanthera holochila, Pteris lidgatei, Schiedea lydgatei, Schiedea nuttallii, Schiedea sarmentosa, Sesbania tomentosa, Silene alexandri, Silene lanceolata, Spermolepis hawaiiensis, Stenogyne bifida, Tetramolopium rockii, Vigna o-wahuensis, and Zanthoxylum hawaiiense*) for which we are proposing critical habitat, we are proposing to define the primary constituent elements on the basis of the habitat features of the areas in which the plant species are reported from, as described by the type of plant community, associated native plant species, locale information (*e.g.,* steep rocky cliffs, talus slopes, stream banks), and elevation. The habitat features provide the ecological components required by the plant. The type of plant community and associated native plant species indicates specific microclimate conditions, retention and availability of water in the soil, soil microorganism community, and nutrient cycling and availability. The locale indicates information on soil type, elevation, rainfall regime, and temperature. Elevation indicates information on daily and seasonal temperature and sun intensity. Therefore, the descriptions of the

physical elements of the locations of each of these species, including habitat type, plant communities associated with the species, location, and elevation, as described in the **SUPPLEMENTARY INFORMATION:** *Discussion of the Plant Taxa* section above, constitute the primary constituent elements for these species on the island of Molokai.

We are unable to identify the primary constituent elements for *Bonamia menziesii, Cyperus trachysanthos, Melicope munroi,* and *Solanum incompletum,* which no longer occur on the island of Molokai, because information on these features for these species on Molokai is not available at this time. Therefore, we were not able to identify the specific areas outside the geographic areas occupied by these species at the time of their listing (unoccupied habitat) that are essential for the conservation of *Bonamia menziesii, Cyperus trachysanthos, Melicope munroi,* and *Solanum incompletum* on the island of Molokai.

All areas proposed as critical habitat are within the historical range of one or more of the 46 species at issue and contain one or more of these physical or biological features (primary constituent elements) essential for the conservation of one or more of the species.

D. Criteria Used To Identify Critical Habitat

In the December 29, 2000, proposal we defined the primary constituent elements based on the general habitat features of the areas in which the plants currently occur such as the type of plant community the plants are growing in, their physical location (*e.g.*, steep rocky cliffs, talus slopes, stream banks), and elevation. The areas we proposed to designate as critical habitat provided some or all of the habitat components essential for the conservation of the 46 plant species. Specific details regarding the delineation of the proposed critical habitat units were given in the December 29, 2000, proposal (65 FR 83158). In that proposal we did not include potentially suitable unoccupied habitat that is important to the recovery of the 46 species due to our limited knowledge of the historical range (the geographical area outside the area presently occupied by the species) and our lack of more detailed information on the specific physical or biological features essential for the conservation of the species.

However, following publication of the December 29, 2000 (65 FR 83158) proposal we received new information regarding the physical and biological features that are considered essential for the conservation of many of these 46 species and information on potentially suitable habitat within the historical range for many of these species, such as locale information, elevational range, vegetation type, and associated species. Based on a review of this new biological information and public comments received following publication of the other three proposals to designate critical habitat for Hawaiian plants on Kauai and Niihau (65 FR 66808), Maui and Kahoolawe (65 FR 79192), and Lanai (65 FR 82086), we have reevaluated the manner in which we delineated proposed critical habitat. In addition, we met with members of the HPPRCC, and State, Federal, and private entities to discuss criteria and methods to delineate critical habitat units for these Hawaiian plants.

The lack of detailed scientific data on the life history of these plant species makes it impossible for us to develop a robust quantitative model (*e.g.*, population viability analysis (NRC 1995)) to identify the optimal number, size, and location of critical habitat units to achieve recovery (Beissinger and Westphal 1998; Burgman *et al.* 2001; Ginzburg *et al.* 1990; Karieva and Wennergren 1995; Menges 1990; Murphy *et al.* 1990; Taylor 1995). However, at this time, and consistent with the listing of these species and their recovery plans, the best available information leads us to conclude that the current size and distribution of the extant populations are not sufficient to expect a reasonable probability of long-term survival and recovery of these plant species. Therefore, we used available information, including expert scientific opinion to identify potentially suitable habitat within the known historic range of each species.

We considered several factors in the selection and proposal of specific boundaries for critical habitat for these 46 species. For each of these species, the overall recovery strategy outlined in the approved recovery plans includes the following components: (1) Stabilization of existing wild populations, (2) protection and management of habitat, (3) enhancement of existing small populations and reestablishment of new populations within historic range, and (4) research on species' biology and ecology (Service 1995a, 1995b, 1996a, 1996b, 1996c, 1997, 1998a, 1998b, 1998c; 1999, 2001). Thus, the long-term recovery of these species is dependent upon the protection of existing population sites and potentially suitable unoccupied habitat within historic range.

The overall recovery goal stated in the recovery plans for each of these species includes the establishment of 8 to 10 populations with a minimum of 100 mature individuals per population for long-lived perennials, 300 individuals per population for short-lived perennials, and 500 mature individuals per population for annuals. There are some specific exceptions to this general recovery goal of 8 to10 populations for multi-island species (see discussion below on *Marsilea villosa*) and the proposed critical habitat designations reflect this exception for this species. To be considered recovered each population of a species endemic to the island of Molokai should occur on the island to which it is endemic, and likewise the populations of a multi-island species should be distributed among the islands of its known historic range (Service 1995a, 1995b, 1996a, 1996b, 1996c, 1997, 1998a, 1998b, 1998c; 1999, 2001). A population, for the purposes of this discussion and as defined in the recovery plans for these species, is defined as a unit containing 100, 300, or 500 individuals, depending on whether the species is a long-lived perennial, short-lived perennial, or annual, in which the individuals could be regularly cross-pollinated and are influenced by the same small-scale areas (such as landslides).

Marsilea villosa, a short-lived perennial aquatic fern, was historically known from six populations on three different islands: Molokai, Oahu, and Niihau. This species is now extant only on Oahu and Molokai. Delisting objectives for this species include protection and stabilization of at least six (rather than 8 to 10) geographically distinct, self-sustaining populations (either three on Oahu and three on Molokai or three on Oahu, two on Molokai, and one on Niihau), stable or increasing population sizes, no active management needed, and self-maintenance of each population through two successive floods resulting in sexual reproduction. Delisting objectives for *Marsilea villosa* do not include a specific number of mature individuals per population because this a clonal species (it is extremely difficult to distinguish between individuals in clonal plant species) (Service 1996c).

By adopting the specific recovery objectives enumerated above, the adverse effects of genetic inbreeding and random environmental events and catastrophes, such as landslides, hurricanes, or tsunamis, that could destroy a large percentage of the species at any one time may be reduced (Menges 1990, Podolsky 2001). These recovery objectives were initially developed by the HPPRCC and are found in all of the recovery plans for these species. While they are expected

to be further refined as more information on the population biology of each species becomes available, the justification for these objectives is found in the current conservation biology literature addressing the conservation of rare and endangered plants and animals (Beissinger and Westphal 1998; Burgman *et al.* 2001; Falk *et al.* 1996; Ginzburg *et al.* 1990; Hendrix and Kyhl 2000; Karieva and Wennergren 1995; Luijten *et al.* 2000; Meffe and Carroll 1996; Podolsky 2000; Menges 1990; Murphy *et al.* 1990; Quintana-Ascencio and Menges 1996; Taylor 1995; Tear *et al.* 1995; Wolf and Harrison 2001). The overall goal of recovery in the short-term is a successful population that can carry on basic life history processes, such as establishment, reproduction, and dispersal, at a level where the probability of extinction is low. In the long-term, the species and its populations should be at a reduced risk of extinction and be adaptable to environmental change through evolution and migration.

The long-term objectives, as reviewed by Pavlik (1996), require from 50 to 2,500 individuals per population, based largely on research and theoretical modeling on endangered animals, since much less research has been done on endangered plants. Many aspects of species life history are typically considered to determine guidelines for species interim stability and recovery, including longevity, breeding system, growth form, fecundity, ramet (a plant that is an independent member of a clone) production, survivorship, seed duration, environmental variation, and successional stage of the habitat. Hawaiian species are poorly studied, and the only one of the afore-mentioned characteristics that can be uniformly applied to all species is longevity (*i.e.*, long-lived perennial, short-lived perennial, and annual). In general, long-lived woody perennial species would be expected to be viable at population levels of 50 to 250 individuals per population, while short-lived perennial species would be viable at population levels of 1,500 to 2,500 individuals or more per population. These population numbers were refined for Hawaiian plant species by the HPPRCC (1994) due to the restricted distribution of suitable habitat typical of Hawaiian plants and the likelihood of smaller genetic diversity of several species that evolved from one single introduction. For recovery of Hawaiian plants, the HPPRCC recommended a general recovery guideline of 100 mature individuals per population for long-lived perennial species, 300 individuals per population for short-lived perennial species, and 500 individuals per population for annual species.

The HPPRCC also recommended the conservation and establishment of 8 to 10 populations to address the numerous risks to the long-term survival and conservation of Hawaiian plant species. However, as explained above, the recovery goal for *Marsilea villosa* is six populations, rather than 8 to 10 populations. Delisting objectives for *Marsilea villosa* do not include specific numbers of mature individuals per population. Although absent the detailed information inherent to the types of PVA models described above (Burgman *et al.* 2001), this approach employs two widely recognized and scientifically accepted goals for promoting viable populations of listed species—(1) creation or maintenance of multiple populations so that a single or series of catastrophic events cannot destroy the entire listed species (Luijten *et al.* 2000; Menges 1990; Quintana-Ascencio and Menges 1996); and (2) increasing the size of each population in the respective critical habitat units to a level where the threats of genetic, demographic, and normal environmental uncertainties are diminished (Hendrix and Kyhl 2000; Luijten *et al.* 2000; Meffe and Carroll 1996; Podolsky 2000; Service 1997; Tear *et al.* 1995; Wolf and Harrison 2001). In general, the larger the number of populations and the larger the size of each population, the lower the probability of extinction (Raup 1991; Meffe and Carroll 1996). This basic conservation principle of redundancy applies to Hawaiian plant species. By maintaining 8 to 10 viable populations in the several proposed critical habitat units, the threats represented by a fluctuating environment are alleviated and the species has a greater likelihood of achieving long-term survival and conservation. Conversely, loss of one or more of the plant populations within any critical habitat unit could result in an increase in the risk that the entire listed species may not survive and recover.

Due to the reduced size of suitable habitat areas for these Hawaiian plant species, they are now more susceptible to the variations and weather fluctuations affecting quality and quantity of available habitat, as well as direct pressure from hundreds of species of non-native plants and animals. Establishing and conserving 8 to 10 viable plant populations on one or more island(s) within the historic range of the species will provide each species with a reasonable expectation of persistence and eventual recovery, even with the high potential that one or more of these populations will be eliminated by normal or random adverse events, such as hurricanes which occurred in 1982 and 1992 on Kauai, fires, and alien plant invasions (HPPRCC 1994; Luijten *et al.* 2000; Mangel and Tier 1994; Pimm *et al.* 1998; Stacey and Taper 1992). We conclude that designation of adequate suitable habitat for 8 to 10 populations as critical habitat is essential to give most species a reasonable likelihood of long-term survival and recovery, based on currently available information.

In summary, the long-term survival and recovery requires the designation of critical habitat units on one or more of the Hawaiian islands with suitable habitat for 8 to 10 populations of most plant species. For *Marsilea villosa* however, the recovery goal is at least six geographically distinct, self-sustaining populations, rather than 8 to 10 populations. Some of this habitat is currently not known to be occupied by these species. To recover the species, it will be necessary to conserve suitable habitat in these unoccupied units, which in turn will allow for the establishment of additional populations through natural recruitment or managed reintroductions. Establishment of these additional populations will increase the likelihood that the species will survive and recover in the face of normal and stochastic events (*e.g.*, hurricanes, fire, and non-native species introductions) (Pimm *et al.* 1998; Stacey and Taper 1992; Mangel and Tier 1994).

In this proposal, we have defined the primary constituent elements based on the general habitat features of the areas in which the plants are reported from such as the type of plant community, the associated native plant species, the physical location (*e.g.*, steep rocky cliffs, talus slopes, streambanks), and elevation. The areas we are proposing to designate as critical habitat provide some or all of the habitat components essential for the conservation of the 46 plant species.

We used the following considerations in delineating proposed critical habitat units:

(1) We focused on designating units representative of the known current and historical geographic and elevational range of each species;

(2) Proposed critical habitat units would allow for expansion of existing wild populations and reestablishment of wild populations within historic range, as recommended by the recovery plans for each species; and

(3) Critical habitat boundaries were delineated in such a way that areas with overlapping occupied or suitable

unoccupied habitat could be depicted clearly (multi-species units).

We began by creating rough units for each species by screen digitizing polygons (map units) using ArcView (ESRI), a computer GIS program. The polygons were created by overlaying current and historic plant location points onto digital topographic maps of each of the islands.

The resulting shape files (delineating historic elevational range and potential, suitable habitat) were then evaluated. Elevation ranges were further refined and land areas identified as not suitable for a particular species (*i.e.*, not containing the primary constituent elements) were avoided. The resulting shape files for each species then were considered to define all suitable habitat on the island, including occupied and unoccupied habitat.

These shape files of suitable habitat were further evaluated. Several factors were then used to delineate the proposed critical habitat units from these land areas. We reviewed the recovery objectives as described above and in recovery plans for each of the species to determine if the number of populations and population size requirements needed for conservation would be available within the critical habitat units identified as containing the appropriate primary constituent elements for each species. For multi-island species multiple populations of each taxon were identified on islands where they now occur or occurred historically. Because of the need to propose critical habitat on an island by island basis for multi-island species we evaluated the historical distribution of each multi-island species throughout Hawaii, to the best of our ability. We expect to refine proposed areas for these multi-island species once all the proposed rules for the Hawaiian Islands are published. This refinement will be based on an evaluation on what is essential to the species on these islands throughout its historical distribution. Of the areas identified as potentially suitable habitat, only those areas within the least-disturbed suitable habitat and that were determined were proposed as critical habitat. A population for this purpose is defined as a discrete aggregation of individuals located a sufficient distance from a neighboring aggregation such that the two are not affected by the same small-scale events and are not believed to be consistently cross-pollinated. In the absence of more specific information indicating the appropriate distance to assure limited cross-pollination, we are using a distance of 1,000 m (3,281 ft) based on our review of current literature on gene flow (Barret and Kohn 1991; Fenster and Dudash 1994; Havens 1998; M.H. Schierup and F.B. Christiansen 1996).

Using the above criteria, we delineated the proposed critical habitat for each species. When species units overlapped, we combined units for ease of mapping. Such critical habitat units encompass a number of plant communities. Using satellite imagery and parcel data we then eliminated areas that did not contain the appropriate vegetation, associated native plant species, or elevations such as cultivated agriculture fields, housing developments or other areas that are unlikely to contribute to the conservation of one or more of the 46 plant species. Geographic features (ridge lines, valleys, streams, coastlines, etc.) or man-made features (roads or obvious land use) that created an obvious boundary for a unit were used as unit area boundaries. We also used watershed delineations to dissect very large proposed critical habitat units in order to simplify the unit mapping and their descriptions.

Within the critical habitat boundaries, section 7 consultation is necessary and adverse modification generally could occur only if the primary constituent elements are affected. Therefore, not all activities within critical habitat would trigger an adverse modification conclusion. In defining critical habitat boundaries, we made an effort to avoid developed areas such as towns and other similar lands, that are unlikely to contribute to the conservation of the 46 species. However, the minimum mapping unit that we used to approximate our delineation of critical habitat for these species did not allow us to exclude all such developed areas. In addition, existing features and structures within the boundaries of the mapped unit, such as buildings, roads, aqueducts, telecommunications equipment, radars, telemetry antennas, radars, missile launch sites, arboreta and gardens, heiau (indigenous places of worship or shrines), airports, other paved areas, and other rural residential landscaped areas do not contain one or more of the primary constituent elements and would be excluded under the terms of this proposed regulation. Federal actions limited to those areas would not trigger a section 7 consultation unless they affect the species and/or primary constituent elements in adjacent critical habitat.

In summary, for the Molokai species we utilized the approved recovery plan guidance to identify appropriately sized land units containing suitable occupied and unoccupied habitat. Based on the best available information, we believe these areas constitute the habitat necessary on Molokai to provide for the conservation of these 46 species.

E. Managed Lands

Currently occupied and historically known sites containing one or more of the primary constituent elements considered essential to the conservation of these 46 plant species were examined to determine if additional special management considerations or protection are required above those currently provided. We reviewed all available management information on these plants at these sites, including published reports and surveys; annual performance and progress reports; management plans; grants; memoranda of understanding and cooperative agreements; DOFAW planning documents; internal letters and memos; biological assessments and environmental impact statements; and section 7 consultations. Additionally, each public (*i.e.*, any county, state, or Federal government office holdings) and private landowner on Molokai with a known occurrence of one of the 46 species was contacted by mail. We reviewed all biological information received during the public comment period, in response to our landowner mailing and open house held in Kaunakakai, Molokai on March 15, 2000. When clarification was required on the information provided to us, we followed up with a telephone contact. Because of the large amount of land on the island of Molokai under State of Hawaii jurisdiction, we met with staff from Molokai's DOFAW office to discuss their current management for the plants on their lands. In addition, we reviewed new biological information and public comments received during the public comment periods and at the public hearing.

Pursuant to the definition of critical habitat in section 3 of the Act, the primary constituent elements as found in any area so designated must also require ''special management considerations or protections.'' Adequate special management or protection is provided by a legally operative plan that addresses the maintenance and improvement of the essential elements and provides for the long-term conservation of the species. We consider a plan adequate when it: (1) Provides a conservation benefit to the species (*i.e.*, the plan must maintain or provide for an increase in the species' population or the enhancement or restoration of its habitat within the area covered by the plan); (2) provides assurances that the management plan will be implemented (*i.e.*, those

responsible for implementing the plan are capable of accomplishing the objectives, have an implementation schedule and/or have adequate funding for the management plan); and, (3) provides assurances that the conservation plan will be effective (*i.e.*, it identifies biological goals, has provisions for reporting progress, and is of a duration sufficient to implement the plan and achieves the plan's goals and objectives). If an area is covered by a plan that meets these objectives, it does not constitute critical habitat as defined by the Act because the primary constituent elements found there are not in need of special management.

In determining and weighing the relative significance of the threats that would need to be addressed in management plans or agreements, we considered the following:

(1) The factors that led to the listing of the species, as described in the final rules for listing each of the species. Effects of clearing and burning for agricultural purposes and of invasive non-native plant and animal species have contributed to the decline of nearly all endangered and threatened plants in Hawaii (Smith 1985; Howarth 1985, Stone 1985; Wagner *et al.* 1985; Scott *et al.* 1986; Cuddihy and Stone 1990; Vitousek 1992; Service 1995a, 1995b, 1996a, 1996b, 1996c, 1997, 1998a, 1998b, 1998c; 1999; Loope 1998).

Current threats to these species include non-native grass and shrub-carried wildfire; browsing, digging, rooting, and trampling from feral ungulates (including goats, deer, and pigs); direct and indirect effects of non-native plant invasions, including alteration of habitat structure and microclimate; and disruption of pollination and gene-flow processes by adverse effects of mosquito-borne avian disease on forest-bird pollinators; direct competition between native and non-native insect pollinators for food; and predation of native insect pollinators by non-native hymenopteran insects (ants). In addition, physiological processes such as reproduction and establishment continue to be stifled by fruit and flower eating pests such as non-native arthropods, mollusks, and rats; and photosynthesis and water transport that are affected by non-native insects, pathogens and diseases. Many of these factors interact with one another, thereby compounding effects. Such interactions include non-native plant invasions altering wildfire regimes; feral ungulates vectoring weeds and disturbing vegetation and soils thereby facilitating dispersal and establishment of non-native plants; and numerous non-native insects feeding on native plants, thereby increasing their vulnerability and exposure to pathogens and disease (Howarth 1985; Smith 1985; Scott *et al.* 1986; Cuddihy and Stone 1990; Mack 1992; D'Antonio and Vitousek 1992; Tunison *et al.* 1992; Service 1994, 1995, 1996, 1997, 1998a, 1998b, 1998c, 1999; Bruegmann *et al.* 2001).

(2) The recommendations from the HPPRCC in their 1998 report to the US (''Habitat Essential to the Recovery of Hawaiian Plants''). As summarized in this report, recovery goals for endangered Hawaiian plant species cannot be achieved without the effective control of non-native species threats, wildfire, and land use changes.

(3) The management actions needed for assurance of survival and ultimate recovery of Hawaii's endangered plants. These actions are described in our recovery plans for these 46 species (Service 1995a, 1995b, 1996a, 1996b, 1996c, 1997, 1998a, 1998b, 1998c; 1999, 2001), in the 1998 HPPRCC report to the Service (HPPRCC 1998), and in various other documents and publications relating to plant conservation in Hawaii (Mueller-Dombois 1985; Smith 1985; Stone 1985; Cuddihy and Stone 1990; Stone *et al.* 1992). In addition to monitoring the plant populations, these actions include, but are not limited to: (1) Feral ungulate control; (2) nonnative plant control; (3) rodent control; (4) invertebrate pest control; (5) fire management; (6) maintenance of genetic material of the endangered and threatened plants species; (7) propagation, reintroduction, and/or augmentation of existing populations into areas deemed essential for the recovery of these species; (8) ongoing management of the wild, outplanted, and augmented populations; and (9) habitat management and restoration in areas deemed essential for the recovery of these species.

In general, taking all of the above recommended management actions into account, the following management actions are ranked in order of importance (Service 1995a, 1995b, 1996a, 1996b, 1996c, 1997, 1998a, 1998b, 1998c; 1999, 2001). It should be noted, however, that, on a case-by-case basis, some of these actions may rise to a higher level of importance for a particular species or area, depending on the biological and physical requirements of the species and the location(s) of the individual plants: feral ungulate control; wildfire management; non-native plant control; rodent control; invertebrate pest control; maintenance of genetic material of the endangered and threatened plant species; propagation, reintroduction, and/or augmentation of existing populations into areas deemed essential for the recovery of the species; ongoing management of the wild, outplanted, and augmented populations; maintenance of natural pollinators and pollinating systems, when known; habitat management and restoration in areas deemed essential for the recovery of the species; monitoring of the wild, outplanted, and augmented populations; rare plant surveys; and control of human activities/access.

As shown in Table 3, the proposed critical habitat designations for 46 species of plants are found on Federal, State, and private lands on the island of Molokai. Information received in response to our public notices; letters to the landowners; open house; meetings with Maui County DOFAW staff; the December 29, 2000, proposal; public comment periods; and the March 21, 2001 public hearing, and information in our files, indicated that on-going conservation management actions for these plants is variable, see below. Some landowners reported that they are not conducting conservation management actions on their lands while others provided information on various activities such as fencing, weeding, ungulate control, hunting, control of human access, scientific research, fire control, and propagation and/or planting of native plants. Without management plans and assurances that the plans will be implemented, we are unable to find that the land in question does not require special management or protection.

Federal Lands

The Sikes Act Improvements Act of 1997 (Sikes Act) requires each military installation that includes land and water suitable for the conservation and management of natural resources to complete, by November 17, 2001, an Integrated Natural Resources Management Plan (INRMP). An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found there. Each INRMP includes an assessment of the ecological needs on the installation, including needs to provide for the conservation of listed species; a statement of goals and priorities; a detailed description of management actions to be implemented to provide for these ecological needs; and a monitoring and adaptive management plan. We consult with the military on the development and implementation of INRMPs for installations with listed species. We believe that bases that have completed and approved INRMPs that address the

needs of the species generally do not meet the definition of critical habitat discussed above, because they require no additional special management or protection. Therefore, we do not include these areas in critical habitat designations if they meet the following three criteria: (1) A current INRMP must be complete and provide a conservation benefit to the species; (2) the plan must provide assurances that the conservation management strategies will be implemented; and (3) the plan must provide assurances that the conservation management strategies will be effective, by providing for periodic monitoring and revisions as necessary. If all of these criteria are met, then the lands covered under the plan would not meet the definition of critical habitat.

The Hawaii Army National Guard maintains an armory in Kaunakakai town. No rare or endangered plants occur on the site and no critical habitat is proposed for this site (Service 1999b).

Four species (*Canavalia molokaiensis*, *Centaurium sebaeiodes*, *Peucedanum sandwicense*, *Tetramolopium rockii*) are reported from Kalaupapa National Historical Park, Molokai (GDSI 2000; HINHP Database 2000). This national historical park, which is found on state-owned land, is managed by the National Park Service under a cooperative agreement between the State of Hawaii and the National Park Service (Gary Barbano, National Park Service, pers. comm. 2000). Although the National Park Service conducts some conservation management actions on these lands and provides access to others who are conducting such activities, there are no comprehensive management plans for the long-term conservation of endangered and threatened plants on these lands and no assurances that management actions will be implemented. Therefore, we can not at this time find that management on this land under Federal jurisdiction is adequate to preclude a proposed designation of critical habitat.

Private Lands

Twenty-three species (*Adenophorous periens*, *Alectryon macrococcus*, *Brighamia rockii*, *Canavalia molokaiensis*, *Clermontia oblongifolia* ssp. *brevipes*, *Ctenitis squamigera*, *Cyanea mannii*, *Cyanea procera*, *Diellia erecta*, *Hedyotis mannii*, *Lysimachia maxima*, *Marsilea villosa*, *Melicope mucronulata*, *Peucedanum sandwicense*, *Phyllostegia mannii*, *Plantago princeps*, *Platanthera holochila*, *Schiedea nuttallii*, *Schiedea sarmentosa*, *Stenogyne bifida*, *Tetramolopium rockii*, *Vigna o-wahuense*, *Zanthoxylum hawaiiense*) are reported from The Nature Conservancy's Moomomi, Kamakou, and Pelekunu Preserves which are located on the northwest coast (Moomomi) and in the East Molokai mountains (Kamakou and Pelekunu) (GDSI 2000; HINHP database 2000; The Nature Conservancy of Hawaii (TNCH) 1993, 1994a, 1994b, 1997, 1999a, 1999b, 1999c). Two of the preserves (Moomomi and Pelekunu) are owned by TNCH while Kamakou was established by a grant of perpetual conservation easement from the private landowner to TNCH. All three preserves are included in the state's Natural Area Partnership (NAP) program which provides matching funds for the management of private lands that have been permanently dedicated to conservation (TNCH 1993, 1994a, 1994b, 1997, 1999a, 1999b, 1999c).

Under the NAP program, the State of Hawaii provides matching funds on a two-for-one basis for management of private lands dedicated to conservation. In order to qualify for this program, the land must be dedicated in perpetuity through transfer of fee title or a conservation easement to the State or a cooperating entity. The land must be managed by the cooperating entity or a qualified landowner according to a detailed management plan approved by the Board of Land and Natural Resources. Once approved, the 6-year partnership agreement between the State and the managing entity is automatically renewed each year so that there is always six years remaining in the term, although the management plan is updated and funding amounts are reauthorized by the board at least every six years. By April 1 of any year the managing partner may notify the state that it does not intend to renew the agreement; however, in such case the partnership agreement remains in effect for the balance of the existing six year term, and the conservation easement remains in full effect in perpetuity. The conservation easement may be revoked by the landowner only if State funding is terminated without the concurrence of the landowner and cooperating entity. Prior to terminating funding, the State must conduct one or more public hearings. The NAP program is funded through real estate conveyance taxes which are placed in a Natural Area Reserve Fund. Participants in the NAP program must provide annual reports to the Department of Land and Natural Resources (DLNR) and DLNR makes annual inspections of the work in the reserve areas. *See* Haw. Rev. Stat. §§ 195–1–195–11; Hawaii Administrative Rules § 13–210.

Management programs within the preserves are documented in long-range management plans and yearly operational plans. These plans detail management measures that protect, restore, and enhance the rare plants and their habitats within the preserves and in adjacent areas (TNCH 1993, 1994a, 1994b, 1997, 1999a, 1999b, 1999c). These management measures address factors which led to the listing of the 23 species including control of non-native species of ungulates, rodents, weeds, and fire. In addition, habitat restoration and monitoring are also included in these plans.

Kamakou Preserve

The primary management goals within Kamakou Preserve are to (1) prevent degradation of native forest by reducing feral ungulate damage; (2) improve or maintain the integrity of native ecosystems in selected areas of the preserve by reducing the effects of non-native plants; and (3) suppress wildfires.

Specific management actions to address feral ungulate impacts include the construction of fences, including strategic fencing (fences placed in proximity to natural barriers such as cliffs); staff hunting; and implementation of organized hunting through the Molokai Hunters Working Group. By monitoring ungulate activity within the preserve, the staff are able to direct hunters to problem areas, thereby increasing hunting success. If increased hunting pressure does not reduce feral ungulate activity in the preserve, the preserve staff will work with the hunting group to identify and implement alternative methods (TNCH 1994, 1999).

The nonnative plant control program within Kamakou Preserve focuses on habitat modifying nonnative plants (weeds) and prioritizes them according to the degree of threat to native ecosystems. A weed priority list has been compiled for the preserve, and control and monitoring of the highest priority species are ongoing. Weeds are controlled manually, chemically, or a through a combination of both. Preventative measures (prevention protocol) are required by all (volunteers, riders to the Preserve and hiking participants) who enter the Preserve. This protocol includes such things as brushing footgear before entering the Preserve to remove seeds of nonnative plants. In addition, the staff are actively promoting awareness of alien plants in Hawaii and their impacts to native ecosystems in the local communities on Molokai through public education at

schools, fairs, and displays at the airport.

Wildfire presuppression and response plans are coordinated with the Maui County Fire Department and the DOFAW Maui District Forester. The Kamakou Wildfire Management Plan is reviewed annually with the fire department and updated as necessary (TNCH 1994, 1999). In the event of fires in areas bordering the preserve staff from Kamakou assist with fire suppression in concert with DOFAW staff.

Natural resource monitoring and research address the need to track the biological and physical resources of the preserve and evaluate changes in these resources to guide management programs. Vegetation is monitored throughout the preserve to document long term ecological changes; rare plant species are monitored to assess population status; and, following fires on the boundaries or within the preserve, burned areas are assessed for ingress of weeds and recovery of native plants. In addition, the preserve staff provide logistical support to scientists and others who are conducting research within the preserve.

In addition, TNCH, DOFAW, the Service, and other Federal agencies including the National Park Service, and neighboring landowners of East Molokai's watershed areas have formed a partnership (East Molokai Watershed Partnership) through a memorandum of understanding to ensure the protection of over 22,000 acres on the island. While the partnership is still in its infancy, the members have agreed, in principle, to participate in cooperative management activities within the East Molokai watershed because they believe that effective management is best achieved through the coordinated actions of all major landowners in the watershed.

Moomomi Preserve

The primary management goals within Moomomi Preserve are to (1) prevent degradation of natural communities by reducing feral ungulate damage; and (2) improve or maintain the integrity of native ecosystems in selected areas of the preserve by reducing the effects of nonnative plants (TNCH 1999).

Specific management actions to address feral ungulate impacts include the construction of a perimeter fence to keep out livestock and an agreement with the neighboring landowner, Molokai Ranch, in which they will remove livestock within 48 hours of ingress. Analysis of the monitoring data collected within the axis deer exclosure will guide future management strategies (TNCH 1999).

As with the Kamakou Preserve, the nonnative plant control program within Moomomi Preserve focuses on habitat modifying nonnative plants (weeds) and prioritizes them according to the degree of threat to native ecosystems. A weed priority list has been compiled for the preserve, and control and monitoring of the highest priority species are ongoing. Weeds are controlled manually, chemically, or a through a combination of both. Preventative measures (prevention protocol) are required by all (volunteers, riders to the Preserve and hiking participants) who enter the Preserve. This protocol includes such things as brushing footgear before entering the Preserve to remove seeds of nonnative plants. In addition, the staff are actively promoting awareness of alien plants in Hawaii and their impacts to native ecosystems in the local communities on Molokai through public education at schools, fairs, and displays at the airport (TNCH 1999).

Natural resource monitoring and research address the need to track the biological and physical resources of the preserve and evaluate changes in these resources to guide management programs. Vegetation is monitored throughout the preserve to document long term ecological changes; rare plant species are monitored to assess population status. In addition, the preserve staff provide logistical support to scientists and others who are conducting research within the preserve (TNCH 1999).

Pelekunu Preserve

The primary management goals within Pelekunu Preserve are to (1) prevent degradation of native forest by reducing feral ungulate damage; and (2) improve or maintain the integrity of native ecosystems in selected areas of the preserve by reducing the effects of non-native plants.

Specific management actions to address feral ungulate impacts include staff hunting; implementation of organized hunting through the Molokai Hunters Working Group; and quarterly transect and aerial monitoring of ungulate activity. By monitoring ungulate activity within the preserve, the staff are able to direct hunters to problem areas, thereby increasing hunting success. If increased hunting pressure does not reduce feral ungulate activity in the preserve, the preserve staff work with the hunting group to identify and implement alternative methods (TNCH 1999).

As with the other two preserves on Molokai, the nonnative plant control program within Pelekunu Preserve focuses on habitat modifying nonnative plants (weeds) and prioritizes them according to the degree of threat to native ecosystems. A weed priority list has been compiled for the preserve, and control and monitoring of the highest priority species are ongoing. Weeds are controlled manually, chemically, or a through a combination of both. Preventative measures (prevention protocol) are required by all (volunteers, riders to the Preserve and hiking participants) who enter the Preserve. This protocol includes such things as brushing footgear before entering the Preserve to remove seeds of nonnative plants. In addition, the staff are actively promoting awareness of alien plants in Hawaii and their impacts to native ecosystems in the local communities on Molokai through public education at schools, fairs, and displays at the airport.

Natural resource monitoring and research address the need to track the biological and physical resources of the preserve and evaluate changes in these resources to guide management programs. Vegetation is monitored throughout the preserve to document long term ecological changes; and rare plant species are monitored to assess population status. In addition, the preserve staff provide logistical support to scientists and others who are conducting research within the preserve.

Because these plants and their habitats within the preserves receive long-term protection and management these lands are not in need of special management considerations or protection. Therefore, we have determined that the private lands within Moomomi Preserve, Kamakou Preserve, and Pelekunu Preserve do not meet the definition of critical habitat in the Act, and we are not proposing designation of these lands as critical habitat. Should the status of any of these reserves change, for example by non-renewal of a partnership agreement or termination of NAP funding, we will reconsider whether it meets the definition of critical habitat, and if so, we may propose to amend critical habitat to include the preserve at that time (50 CFR 424.12(g)). Critical habitat, therefore, is not proposed for *Adenophorous periens*, *Alectryon macrococcus*, *Brighamia rockii*, *Canavalia molokaiensis*, *Clermontia oblongifolia* ssp. *brevipes*, *Ctenitis squamigera*, *Cyanea mannii*, *Cyanea procera*, *Diellia erecta*, *Hedyotis mannii*, *Lysimachia maxima*, *Marsilea villosa*, *Melicope mucronulata*, *Peucedanum sandwicense*, *Phyllostegia mannii*,

Plantago princeps, *Platanthera holochila*, *Schiedea nuttallii*, *Schiedea sarmentosa*, *Stenogyne bifida*, *Tetramolopium rockii*, *Vigna o-wahuense*, *Zanthoxylum hawaiiense* on Kamakou, Moomomi, and Pelekunu preserves. However, critical habitat is proposed for these species on other areas on Molokai.

We believe that Moomomi Preserve, Kamakou Preserve, and Pelekunu Preserve are the only potential critical habitat areas on Molokai at this time that do not require special management considerations or protection. However, we are specifically soliciting comments on the appropriateness of this approach. If we receive information during the public comment period that any of the lands within the proposed designations are actively managed to promote the conservation and recovery of the 46 listed species at issue in this proposed designation, in accordance with long term conservation management plans or agreements, and there are assurances that the proposed management actions will be implemented and effective, we can consider this information when making a final determination of critical habitat. We are also soliciting comments on whether future development and approval of conservation measures (e.g., Conservation Agreements, Safe Harbor Agreements) should trigger revision of designated critical habitat to exclude such lands and, if so, by what mechanism.

The proposed critical habitat areas described below constitute our best assessment of the physical and biological features needed for the conservation of the 46 plant species, and the special management needs of these species, and are based on the best scientific and commercial information available and described above. We put forward this proposal acknowledging that we have incomplete information regarding many of the primary biological and physical requirements for these species. However, both the Act and the relevant court orders require us to proceed with designation at this time based on the best information available. As new information accrues, we may reevaluate which areas warrant critical habitat designation. We anticipate that comments received through the public review process and from any public hearings, if requested, will provide us with additional information to use in our decision-making process and in assessing the potential impacts of designating critical habitat for one or more of these species.

The approximate areas of proposed critical habitat by landownership or jurisdiction are shown in Table 5.

TABLE 5.—APPROXIMATE PROPOSED CRITICAL HABITAT AREAS BY UNIT AND LAND OWNERSHIP OR JURISDICTION, MAUI COUNTY, HAWAII[1]

Unit name	State/local	Private	Federal	Total
Molokai A1	88 ha (217 ac)	384 ha (950 ac)		472 ha (1,167 ac)
Molokai A2	1,325 ha (3,274 ac)	199 ha (492 ac)	8 ha (20 ac)	1,532 ha (3,786 ac)
Molokai B1	1,988 ha (4,914 ac)	189 ha (468 ac)	1 ha (2 ac)	2,179 ha (5,384 ac)
Molokai B2	20 ha (50 ac)			20 ha (50 ac)
Molokai C	2,726 ha (6,737 ac)	1,781 ha (4,400 ac)		4,507 ha (11,138 ac)
Molokai D		466 ha (1,153 ac)		466 ha (1,153 ac)
Molokai E1	4 ha (11 ac)	123 ha (304 ac)		127 ha (315 ac)
Molokai E2	19 ha (47 ac)	313 ha (774 ac)		332 ha (821 ac)
Molokai F	1,795 ha (4,435 ac)	3,162 ha (7,813 ac)		4,956 ha (12,247 ac)
Molokai G	1,187 ha (2,932 ac)	1,836 ha (4,538 ac)		3,023 ha (7,471 ac)
Grand Total	9,152 ha (22,617 ac)	8,453 ha (20,892 ac)	9 ha (22 ac)	17,614 ha (43,532 ac)

[1] Area differences due to digital mapping discrepancies between TMK data (GDSI 2000) and USGS coastline, or difference due to rounding.

Proposed critical habitat includes habitat for these 46 species under private, State, and Federal jurisdiction (owned and leased lands), with Federal lands including State lands managed by the National Park Service. Lands proposed as critical habitat have been divided into 10 units (Molokai A1 through Molokai G). A brief description of each unit is presented below.

Descriptions of Critical Habitat Units

Molokai A1

The proposed unit Molokai A1 provides occupied habitat for three species: *Centaurium sebaeoides*, *Marsilea villosa*, and *Tetramolopium rockii*. It is proposed for designation because it contains the physical and biological features that are considered essential for their conservation on Molokai, and provides habitat to support one or more of the 8 to 10 populations and 300 mature individuals per population for *Tetramolopium rockii*, or 500 mature individuals per population for *Centaurium sebaeoides*; or provides habitat to support one or more of the 6 populations for *Marsilea villosa*, throughout their known historical range considered by the recovery plans to be necessary for the conservation of each species (see the discussion of conservation requirements in Section D, and in the table for Molokai A1).

The unit contains a total of 472 ha (1,167 ac) on State and privately owned lands. It lies mostly in Kaa watershed with a portion in the west in the Papohaku watershed and in the east in the Moomomi watershed. The natural features of this unit include Anapuka (cape), Kaa (summit), Kaa Gulch, Kealapupuakiha (beach), Keonehanau (cape), Mokio Point, Pueoao (cliff), and Waiakanapo (cape).

Key for Molokai A1–G

*Not all suitable habitat is proposed to be designated, only those areas essential for the conservation of the species.

1. This unit is needed to meet the recovery plan objectives of 8 to 10 viable populations (self perpetuating and sustaining for at least 5 years) with 100 to 500 mature, reproducing individuals per species throughout its historical range as specified in the recovery plans.

2. Island endemic.

3. Multi-island species with current locations on other islands.

4. Multi-island species with no current locations on other islands.

5. Current locations do not necessarily represent viable populations with the required number of mature individuals.

6. Several current locations may be affected by one naturally occurring, catastrophic event.

7. Species with variable habitat requirements, usually over wide areas. Wide ranging species require more space per individual over more land area to provide needed primary constituent elements to maintain healthy population size.

8. Not all currently occupied habitat was determined to be essential to the recovery of the species.

9. Life history, long-lived perennial—100 mature, reproducing individuals per population.

10. Life history, short-lived perennial—300 mature, reproducing individuals per population.

11. Life history, annual—500 mature, reproducing individuals per population.

12. Narrow endemic, the species probably never naturally occurred in more than a single or a few populations.

13. Species has extremely restricted, specific habitat requirements.

14. Hybridization is possible so distinct populations of related species should not overlap, requiring more land area.

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Molokai A1

Species	1. 8–10 pop. guidelines.	2. Island endemic.	3. Multi-island/current other islands.	4. Multi-island/no current other islands.	5. Non-viable populations.	6. Several occ. vulnerable to destruction.	7. Species with variable habitats.	8. Not all occupied habitat needed.	9. Long-lived perennial–100/pop.	10. Short-lived perennial–300/pop.	11. Annual–500/pop.	12. Narrow endemic.	13. Restricted habitat requirements.	14. Hybridization is possible.	Notes
Centaurium sebaeoides	X*		X		X	X					X		X**		*Species is wide ranging.‡ **Volcanic or clay soils or cliffs in arid coastal areas.
Marsilea villosa			X		X	X	X	X					X**		*Not enough suitable habit for 8 to 10 populations at this time. **Minimally shaded or open areas in shallow depressions in clay soil, or lithified sand dunes overlaid with alluvial clay or vernal pools.
Tetramolopium rockii	X	X			X	X				X			X*		*Hardened calcareous sand dunes or ash-covered basalt in the coastal spray zone.

Molokai A2

The proposed unit Molokai A2 provides occupied habitat for three species: *Centaurium sebaeoides*, *Sesbania tomentosa*, and *Tetramolopium rockii*. It is proposed for designation because it contains the physical and biological features that are considered essential for their conservation on Molokai, and provides habitat to support one or more of the 8 to 10 populations for each species and 300 mature individuals per population for *Sesbania tomentosa*, and *Tetramolopium rockii*, or 500 mature individuals per population for *Centaurium sebaeoides* throughout their known historical range considered by the recovery plans to be necessary for the conservation of each species (see the discussion of conservation requirements in Section D, and in the table for Molokai A2).

This unit contains a total of 1,532 ha (3,786 ac) on Federal, State, and privately owned lands. It contains Moomomi watershed in the west, Waihanau watershed in the east and Maneopapa watershed in the center. It contains portions of Kalaupapa National Historical (National Historical Park) and Molokai Forest Reserve (State Forest Reserve). The natural features include: Anahaki Gulch, Anianikeha (cape), Hinanaulua (cape), Kahinaakalani (cape), Kakaaukuu Gulch, Kaluanui (cape), Kapale Gulch, Kapuahiapele (cape), Kauhako Crater, Kiikolu (summit), Kukuiokanaloa (cliff), Manalo Gulch, Maneopapa Gulch, Mimino Gulch, Paualaia Point (cape), Pohakunui (summit), Puu Kapele, and Puu Uao.

Molokai A2

Species	1. 8–10 pop. guidelines.	2. Island endemic.	3. Multi-island/current other islands.	4. Multi-island/no current other islands.	5. Non-viable populations.	6. Several occ. vulnerable to destruction.	7. Species with variable habitats.	8. Not all occupied habitat needed.	9. Long-lived perennial–100/pop.	10. Short-lived perennial–300/pop.	11. Annual–500/pop.	12. Narrow endemic.	13. Restricted habitat requirements.	14. Hybridization is possible.	Notes
Centaurium sebaeoides	X *		X		X	X					X		X**		*Species is wide ranging.‡ **Volcanic or clay soils or cliffs in arid coastal areas.
Sesbania tomentosa	X *		X		X	X	X	X		X					*Species is wide ranging.‡
Tetramolopium rockii	X	X			X	X				X			X*		*Hardened calcareous sand dunes or ash-covered basalt in the coastal spray zone.

Molokai B1

The proposed unit Molokai B1 provides occupied habitat for 18 species: *Adenophorus periens*, *Brighamia rockii*, *Centaurium sebaeoides*, *Clermontia oblongifolia* ssp. *brevipes*, *Cyanea dunbarii*, *Cyanea grimesiana* ssp. *grimesiana*, *Cyanea procera*, *Hedyotis mannii*, *Hibiscus arnottianus* ssp. *immaculatus*, *Ischaemum byrone*, *Lysimachia maxima*, *Peucedanum sandwicense*, *Phyllostegia mannii*, *Platanthera holochila*, *Plantago princeps*, *Schiedea nuttallii*, *Stenogyne bifida*, and *Tetramolopium rockii.* It is proposed for designation because it contains the physical and biological features that are considered essential for their conservation on Molokai, and provides habitat to support one or more of the 8 to 10 populations for each species and 100 mature individuals per population for *Brighamia rockii* and *Hibiscus arnottianus* ssp. *immaculatus*, or 300 mature individuals per population for *Adenophorus periens*, *Clermontia oblongifolia* ssp. *brevipes*, *Cyanea dunbarii*, *Cyanea grimesiana* ssp. *grimesiana*, *Cyanea procera*, *Hedyotis mannii*, *Ischaemum byrone*, *Lysimachia maxima*, *Peucedanum sandwicense*, *Phyllostegia mannii*, *Platanthera holochila*, *Plantago princeps*, *Schiedea nuttallii*, *Stenogyne bifida*, and *Tetramolopium rockii*, or 500 mature individuals per population for *Centaurium sebaeoides* throughout their known historical range (see the discussion of conservation requirements in Section D, and in the table for Molokai B1).

This unit contains a total of 2,179 ha (5,384 ac) on Federal, State, and privately owned lands. It is bordered on the west by the Waialeia watershed, east by Waikolu and Waiohookalo watershed and includes portions of the Anapuhi and Wainene watersheds. This unit contains portions of Kalaupapa National Historical (National Historical Park), Molokai Forest Reserve (State Forest Reserve), and Puu Alii Natural Area Reserve (State Natural Area Reserve). The geographic features include: Lae Hoolehua (cape), Kaala (cape), Kalahuapueo (summit), Kaluahauoni (summit), Kaupikiawa (cape), Kukaiwaa Point, Leinaopapio Point, Moaula Ridge, Ohialele (summit), Papapaiki (cape), Puu Kaeo, Puu Kauwa, and Waimanu Falls.

Molokai B1

Species	1. 8–10 pop. guidelines.	2. Island endemic.	3. Multi-island/current other islands.	4. Multi-island/no current other islands.	5. Non-viable populations.	6. Several occ. vulnerable to destruction.	7. Species with variable habitats.	8. Not all occupied habitat needed.	9. Long-lived perennial–100/pop.	10. Short-lived perennial–300/pop.	11. Annual–500/pop.	12. Narrow endemic.	13. Restricted habitat requirements.	14. Hybridization is possible.	Notes
Adenophorus periens	X*		X		X	X				X			X**		*Species is wide ranging.‡ **Epiphyte usually growing on Metrosideros polymorpha trunks, found in Metrosideros polymorpha/Cibotium glaucum lowland wet forest and cloud forests in well-developed, closed

															canopy providing deep shade and high humidity
Brighamia rockii	X			X	X	X			X				X*		*Rock crevices on steep basalt sea cliffs, often within the spray zone in coastal dry or mesic forest.
Centaurium sebaeoides	X*		X		X	X					X		X**		*Species is wide ranging.‡ **Volcanic or clay soils or cliffs in arid coastal areas.
Clermontia oblongifolia ssp. brevipes	X	X			X	X		X		X			X*		*Shallow soil on gulch slopes.
Cyanea dunbarii	X	X			X	X				X			X*		*Streambanks on moderate to steep slopes in mesic to wet.
Cyanea grimesiana ssp. grimesiana	X*		X		X	X	X			X					*Species is wide ranging.‡
Cyanea procera	X	X			X	X	X			X					
Hedyotis mannii	X		X		X	X				X			X*		*Dark, narrow, rocky gulch walls.
Hibiscus arnottianus ssp. immaculatus	X*	X			X	X	X		X						*Species is wide ranging.‡
Ischaemum byrone	X*		X		X	X	X			X					*Species is wide ranging.‡
Lysimachia maxima	X	X			X	X	X								
Peucedanum sandwicense	X*		X		X	X	X	X		X					*Species is wide ranging.‡

Phyllostegia mannii	X			X	X**					X			X*		*Shaded sites in sometimes foggy and windswept, wet, open, Metrosideros polymorpha dominated forests. **Extirpated in wild (genetic material available)
Plantago princeps	X		X		X	X				X			X*		*Steep slopes, wet rock walls, streambanks, or bases of waterfalls.
Platanthera holochila	X		X		X	X				X			X*		*Bogs.
Schiedea nuttallii	X		X		X	X	X		X						
Stenogyne bifida	X	X			X	X	X	X		X					
Tetramolopium rockii	X	X			X	X				X			X*		*Hardened calcareous sand dunes or ash-covered basalt in the coastal spray zone.

Molokai B2

The proposed unit Molokai B2 provides occupied habitat for one species: *Peucedanum sandwicense.* It is proposed for designation because it contains the physical and biological features that are considered essential for its conservation on Molokai, and provides habitat to support one or more of the 8 to 10 populations and 300 mature individuals per population for *Peucedanum sandwicense* throughout its known historical range considered by the recovery plan to be necessary for the conservation of this species.

This unit also provides unoccupied habitat for three species: *Brighamia rockii*, *Ischaemum byrone*, and *Tetramolopium rockii.* Designation of this unit is essential to the conservation of these species because it contains the physical and biological features that are considered essential for their conservation on Molokai, and provides habitat to support one or more additional populations necessary to meet the recovery objectives of 8 to 10 populations for each species and 100 mature individuals per population for *Brighamia rockii*, or 300 mature individuals per population for *Ischaemum byrone* and *Tetramolopium rockii*, throughout their known historical range (see the discussion of conservation requirements in Section D, and in the table for Molokai B2).

This unit contains a total of 20 ha (50 ac) on State owned land. It contains all of the State's Mokapu Bird Sanctuary. The natural feature of this unit is Mokapu Island.

Molokai B2

Species	1. 8–10 pop. guidelines.	2. Island endemic.	3. Multi-island/current other islands.	4. Multi-island/no current other islands.	5. Non-viable populations.	6. Several occ. vulnerable to destruction.	7. Species with variable habitats.	8. Not all occupied habitat needed.	9. Long-lived perennial–100/pop.	10. Short-lived perennial–300/pop.	11. Annual–500/pop.	12. Narrow endemic.	13. Restricted habitat requirements.	14. Hybridization is possible.	Notes
Brighamia rockii	X			X	X	X			X				X *		*Rock crevices on steep basalt sea cliffs, often within the spray zone in coastal dry or mesic forest.
Ischaemum byrone	X*		X		X	X	X			X					*Species is wide ranging.‡
Peucedanum sandwicense	X*		X		X	X	X	X		X					*Species is wide ranging.‡
Tetramolopium rockii	X	X			X	X				X			X		*Hardened calcareous sand dunes or ash-covered basalt in the coastal spray zone.

Molokai C

The proposed unit Molokai E provides occupied habitat for 13 species: *Adenophorus periens*, *Brighamia rockii*, *Centaurium sebaeoides*, *Clermontia oblongifolia* ssp. *brevipes*, *Cyanea grimesiana* ssp. *grimesiana*, *Hesperomannia arborescens*, *Hibiscus arnottianus* ssp. *immaculatus*, *Ischaemum byrone*, *Lysimachia maxima*, *Melicope reflexa*, *Peucedanum sandwicense*, *Phyllostegia mannii*, and *Pteris lidgatei.* It is proposed for designation because it contains the physical and biological features that are considered essential for their conservation on Molokai, and provides habitat to support one or more of the 8 to 10 populations for each species and 100 mature individuals per population for *Brighamia rockii*, *Hesperomannia arborescens*, *Hibiscus arnottianus* ssp. *immaculatus*, and *Melicope reflexa*, or 300 mature individuals per population for *Adenophorus periens*, *Clermontia oblongifolia* ssp. *brevipes*, *Cyanea grimesiana* ssp. *grimesiana*, *Ischaemum byrone*, *Lysimachia maxima*, *Peucedanum sandwicense*, *Phyllostegia mannii*, and *Pteris lidgatei*, or 500 mature individuals per population for *Centaurium sebaeoides*, throughout their known historical range.

This unit also provides unoccupied habitat for one species: *Diplazium molokaiense.* Designation of this unit is essential to the conservation of this species because it contains the physical and biological features that are considered essential for its conservation on Molokai, and provides habitat to support one or more additional populations necessary to meet the recovery objectives of 8 to 10 populations and 300 mature individuals per population, throughout its known historical range (see the discussion of conservation requirements in Section D, and in the table for Molokai C).

The unit contains a total of 4,507 ha (11,138 ac) on State and privately owned lands. It contains all of Haloku, Kahiwa, Kalaemilo, Oloupena, Puukaoku, and Wailele watersheds and portions of Halawa, Honouliwai, Kainalu, Kamalo, Kawainui, Pelekunu, Waiahookalo, Waialua, Wailau, and Waipu watersheds. It contains portions of Olokui Natural Area Reserve and Molokai Forest Reserve. The natural features include: Ananoio (beach), Halekou (cape), Haloku Falls, Kahiwa Falls, Kahiwa Gulch, Kapea Stream, Kaunupahu (summit), Keahiakalio (summit), Kikipua Point, Kuapuuiki (spring), Kukuinui Ridge, Lepau Point, Malahini Cave, Milo Point, Naehu (summit), Olokui (summit), Oloupena (beach), Oloupena Falls, Pakui (summit), Papalaua Falls, Pohakuloa (summit), Pohakuulaula (summit), Puu Ohelo, Puuau, Puukaoku Falls, Puukaoku Point, Waiahookalo Gulch, Wailele Falls, Waiokala (cape), and Waipu (beach).

Molokai C

Species	1. 8–10 pop. guidelines.	2. Island endemic.	3. Multi-island/current other islands.	4. Multi-island/no current other islands.	5. Non-viable populations.	6. Several occ. vulnerable to destruction.	7. Species with variable habitats.	8. Not all occupied habitat needed.	9. Long-lived perennial–100/pop.	10. Short-lived perennial–300/pop.	11. Annual–500/pop.	12. Narrow endemic.	13. Restricted habitat requirements.	14. Hybridization is possible.	Notes
Adenophorus periens	X*		X		X	X				X			X**		*Species is wide ranging.‡ **Epiphyte usually growing on Metrosideros polymorpha trunks, found in Metrosideros polymorpha/Cibotium glaucum lowland wet forest and cloud forests in

															well-developed, closed canopy providing deep shade and high humidity.
Brighamia rockii	X			X	X	X			X				X*		*Rock crevices on steep basalt sea cliffs, often within the spray zone in coastal dry or mesic forest.
Centaurium sebaeoides	X*		X		X	X					X		X**		*Species is wide ranging.‡ **Volcanic or clay soils or cliffs in arid coastal areas.
Clermontia oblongifolia ssp. brevipes	X	X			X	X		X		X			X*		*Shallow soil on gulch slopes.
Cyanea grimesiana ssp. grimesiana	X*		X		X	X	X			X					*Species is wide ranging.‡
Diplazium molokaiense	X*		X**		X	X	X			X					*Species is wide ranging.‡ **Historical on Molokai
Hesperomannia arborescens	X*		X		X	X	X		X						*Species is wide

															ranging.‡
Hibiscus arnottianus ssp. immaculatus	X*	X			X	X	X		X						*Species is wide ranging.‡
Ischaemum byrone	X*		X		X	X	X			X					*Species is wide ranging.‡
Lysimachia maxima	X	X			X	X	X								
Melicope reflexa	X*	X			X	X	X		X						*Species is wide ranging.‡
Peucedanum sandwicense	X*		X		X	X	X	X		X					*Species is wide ranging.‡
Phyllostegia mannii	X			X	X**					X			X*		*Shaded sites in sometimes foggy and windswept, wet, open, Metrosideros polymorpha dominated forests. **Extirpated in wild (genetic material available)
Pteris lidgatei	X*		X**		X**					X			X***		*Species is wide ranging.‡ **Historical on Molokai ***Wet cliff faces, streambanks, and sides of waterfalls.

Molokai D

The proposed unit Molokai D provides occupied habitat for four species: *Bidens wiebkei*, *Centaurium sebaeoides*, *Ischaemum byrone*, and *Peucedanum sandwicense*. It is proposed for designation because it contains the physical and biological features that are considered essential for their conservation on Molokai, and provides habitat to support one or more of the 8 to 10 populations for each species and 300 mature individuals per population for *Bidens wiebkei*, *Ischaemum byrone*, and *Peucedanum sandwicense*, or 500 mature individuals per population for *Centaurium sebaeoides*, throughout their known historical range (see the discussion of conservation requirements in Section D, and in the table for Molokai D).

The unit contains a total of 466 ha (1,153 ac) on privately owned land. It is bordered by Kawainui watershed in the west, Halawa watershed in the east and contains a portion of the Pipiwai watershed. The natural features in this unit include: Apuuiki Gulch, Hakaaano (summit), Halawaiki Gulch, Hinalenale Point, Kahaakea Gulch, Kaonihu (cape), Kepuna Gulch, Kuinanaho Gulch, Lamaloa Gulch, Lamaloa Head (summit), Lelemako Gulch, Pipiwai Gulch, and Waialana Gulch.

Molokai D

Species	1. 8–10 pop. guidelines.	2. Island endemic.	3. Multi-island/current other islands.	4. Multi-island/no current other islands.	5. Non-viable populations.	6. Several occ. vulnerable to destruction.	7. Species with variable habitats.	8. Not all occupied habitat needed.	9. Long-lived perennial–100/pop.	10. Short-lived perennial–300/pop.	11. Annual–500/pop.	12. Narrow endemic.	13. Restricted habitat requirements.	14. Hybridization is possible.	Notes
Bidens wiebkei	X	X			X	X	X	X		X					
Centaurium sebaeoides	X*		X		X	X					X		X**		*Species is wide ranging.‡ **Volcanic or clay soils or cliffs in arid coastal areas.
Ischaemum byrone	X*		X		X	X	X			X					*Species is wide ranging.‡
Peucedanum sandwicense	X*		X		X	X	X	X		X					*Species is wide ranging.‡

Molokai E1

The proposed unit Molokai E1 provides occupied habitat for one species: *Bidens wiebkei.* It is proposed for designation because it contains the physical and biological features that are considered essential for its conservation on Molokai, and provides habitat to support one or more of the 8 to 10 populations and 300 mature individuals per population for *Bidens wiebkei* throughout its known historical range (see the discussion of conservation requirements in Section D, and in the table for Molokai E1).

This unit cluster contains a total of 127 ha (315 ac) on State and privately owned lands. It is bordered in the west by Halawa watershed and in the east by Papio watershed. The natural features of this unit cluster include: Alanuipuhipaka Ridge, Koalii (summit), Papio Gulch, and Puu Hoku o.

Molokai E1

Species	1. 8–10 pop. guidelines.	2. Island endemic.	3. Multi-island/current other islands.	4. Multi-island/no current other islands.	5. Non-viable populations.	6. Several occ. vulnerable to destruction.	7. Species with variable habitats.	8. Not all occupied habitat needed.	9. Long-lived perennial–100/pop.	10. Short-lived perennial–300/pop.	11. Annual–500/pop.	12. Narrow endemic.	13. Restricted habitat requirements.	14. Hybridization is possible.	Notes
Bidens wiebkei	X	X			X	X	X	X		X					

Molokai E2

The proposed unit Molokai E2 provides occupied habitat for one species: *Bidens wiebkei.* It is proposed for designation because it contains the physical and biological features that are considered essential for its conservation on Molokai, and provides habitat to support one or more of the 8 to 10 populations and 300 mature individuals per population for *Bidens wiebkei* throughout its known historical range (see the discussion of conservation requirements in Section D, and in the table for Molokai E2).

The unit contains a total of 332 ha (821 ac) on State and privately owned lands. It is bordered in the north by Honowewe watershed and in the south by Pohakupili watershed. The natural features include: Kukumamalu Gulch, Pohakupili Gulch, Puu Nananana, and Waialapai Gulch.

Molokai E2

Species	1. 8–10 pop. guidelines.	2. Island endemic.	3. Multi-island/current other islands.	4. Multi-island/no current other islands.	5. Non-viable populations.	6. Several occ. vulnerable to destruction.	7. Species with variable habitats.	8. Not all occupied habitat needed.	9. Long-lived perennial–100/pop.	10. Short-lived perennial–300/pop.	11. Annual–500/pop.	12. Narrow endemic.	13. Restricted habitat requirements.	14. Hybridization is possible.	Notes
Bidens wiebkei	X	X			X	X	X	X		X					

Molokai F

The proposed unit Molokai F provides occupied habitat for 30 species: *Adenophorus periens*, *Alectryon macrococcus*, *Bidens wiebkei*, *Canavalia molokaiensis*, *Clermontia oblongifolia* ssp. *brevipes*, *Ctenitis squamigera*, *Cyanea dunbarii*, *Cyanea grimesiana* ssp. *grimesiana*, *Cyanea mannii*, *Cyanea procera*, *Diellia erecta*, *Hedyotis mannii*, *Labordia triflora*, *Lysimachia maxima*, *Mariscus faurei*, *Melicope mucronulata*, *Melicope reflexa*, *Neraudia sericea*, *Phyllostegia mannii*, *Platanthera holochila*, *Plantago princeps*, *Schiedea lydgatei*, *Schiedea nuttallii*, *Schiedea sarmentosa*, *Sesbania tomentosa*, *Silene lanceolata*, *Spermolepis hawaiiensis*, *Stenogyne bifida*, *Vigna o-wahuensis*, and *Zanthoxylum hawaiiense*. It is proposed for designation because it contains the physical and biological features that are considered essential for their conservation on Molokai, and provides habitat to support one or more of the 8 to 10 populations for each species and 100 mature individuals per population for *Alectryon macrococcus*, *Labordia triflora*, *Melicope mucronulata*, *Melicope reflexa*, and *Zanthoxylum hawaiiense*, or 300 mature individuals per population for *Adenophorus periens*, *Bidens wiebkei*, *Canavalia molokaiensis*, *Clermontia oblongifolia* ssp. *brevipes*, *Ctenitis squamigera*, *Cyanea dunbarii*, *Cyanea grimesiana* ssp. *grimesiana*, *Cyanea mannii*, *Cyanea procera*, *Diellia erecta*, *Hedyotis mannii*, *Lysimachia maxima*, *Mariscus faurei*, *Neraudia sericea*, *Phyllostegia mannii*, *Platanthera holochila*, *Plantago princeps*, *Schiedea lydgatei*, *Schiedea nuttallii*, *Schiedea sarmentosa*, *Sesbania tomentosa*, *Silene lanceolata*, *Stenogyne bifida*, and *Vigna o-wahuensis*, or 500 mature individuals per population for *Spermolepis hawaiiensis*, throughout their known historical range considered by the recovery plans to be necessary for the conservation of each species.

This unit also provides unoccupied habitat for four species: *Eugenia koolauensis*, *Flueggea noewawraea*, *Phyllostegia mollis*, and *Silene alexandri*. Designation of this unit is essential to the conservation of these species because it contains the physical and biological features that are considered essential for their conservation on Molokai, and provides habitat to support one or more additional populations necessary to meet the recovery objectives of 8 to 10 populations for each species and 100 mature individuals per population for *Eugenia koolauensis* and *Flueggea noewawraea*, or 300 mature individuals per population for *Silene alexandri* and *Phyllostegia mollis*, throughout their known historical range (see the discussion of conservation requirements in Section D, and in the table for Molokai F).

The unit contains a total of 4,956 ha (12,247 ac) on State and privately owned lands. It bordered in the west by Manawainui watershed and in the east by Mapulehu watershed and contains portions of the Kahananui, Kalamaula, Kaluaaha, Kamalo, Kamiloloa, Kaunakakai, Kawela, Ohia, Pelekunu, Waialeia, Waihanau, Waikolu, Wailau, and Wawaia watersheds. This unit contains portions of Kalaupapa National Historical (National Historical Park) and Molokai Forest Reserve (State Forest Reserve). The natural features include: Kaholoapele (summit), Kalapa Konomanu (ridge), Kalapamoa Ridge, Kaluaolohe (summit), Kapuna Spring, Kaulahuki (summit), Kaulolo (summit), Keanakoholua Ridge, Kikiakala (summit), Kuana Ridge, Lae o Kapuna (ridge), Lapakohana (summit), Lehuula (summit), Makalihua (summit), Maunahui (summit), Maunaoluolu (summit), Na Puu Kulua (summit), Ooa (summit), Pelekunu Gulch, Pohakuloa (summit), Puu Haha, Puu Makaliilii, Puu o Wahaula, Uapa (summit), and Waihii (spring).

Molokai F

Species	1. 8–10 pop. guidelines.	2. Island endemic.	3. Multi-island/current other islands.	4. Multi-island/no current other islands.	5. Non-viable populations.	6. Several occ. vulnerable to destruction.	7. Species with variable habitats.	8. Not all occupied habitat needed.	9. Long-lived perennial–100/pop.	10. Short-lived perennial–300/pop.	11. Annual–500/pop.	12. Narrow endemic.	13. Restricted habitat requirements.	14. Hybridization is possible.	Notes
Adenophorus periens	X*		X		X	X				X			X**		*Species is wide ranging.‡ **Epiphyte usually growing on Metrosideros polymorpha trunks, found in Metrosideros polymorpha/Cibotium glaucum lowland wet forest and cloud forests in well-developed, closed

															canopy providing deep shade and high humidity.
Alectryon macrococcus	x*		X		X	X	X	X	X						*Species is wide ranging.‡
Bidens wiebkei	X	X			X	X	X	X		X					
Canavalia molokaiensis	X	X			X	X	X	X		X					
Clermontia oblongifolia ssp. brevipes	X	X			X	X		X		X			X*		*Shallow soil on gulch slopes.
Ctenitis squamigera			X		X	X	X			X					
Cyanea dunbarii	X	X			X	X				X			X*		*Streambanks on moderate to steep slopes in mesic to wet.
Cyanea grimesiana ssp. grimesiana	X*		X		X	X	X			X					*Species is wide ranging.‡
Cyanea mannii	X	X			X	X	X			X					
Cyanea procera	X	X			X	X	X			X					
Diellia erecta	X*		X		X		X	X		X					*Species is wide ranging.‡
Eugenia koolauensis	X*		X**		X**		X		X						*Species is wide ranging.‡ **Historical on Molokai
Flueggea neowawraea	X*		X**		X**		X		X						*Species is wide ranging.‡ **Historical on Molokai
Hedyotis mannii	X		X		X	X				X			X*		*Dark, narrow, rocky gulch walls.
Labordia triflora	X*	X			X	X	X		X						*Species is wide ranging.‡
Lysimachia maxima	X	X			X	X	X								
Mariscus fauriei	X*		X		X	X	X			X					*Species is wide ranging.‡
Melicope mucronulata	X		X		X	X			X				X*		*Steep, west- or north-facing, lowland

															slopes in dry to mesic forests.
Melicope reflexa	X*	X			X	X	X		X						*Species is wide ranging.‡
Neraudia sericea	X		X		X	X	X	X		X					
Phyllostegia mannii	X			X	X**					X			X*		*Shaded sites in sometimes foggy and windswept, wet, open, Metrosideros polymorpha dominated forests. **Extirpated in wild (genetic material available)
Phyllostegia mollis	X		X*		X*		X			X					*Historical on Molokai.
Plantago princeps	X		X		X	X				X			X*		*Steep slopes, wet rock walls, streambanks, or bases of waterfalls.
Platanthera holochila	X		X		X	X				X			X*		*Bogs.
Schiedea lydgatei	X*	X			X	X	X			X					*Not enough suitable habitat for 8 to 10 populations at this time.
Schiedea nuttallii	X		X		X	X	X		X						
Schiedea sarmentosa	X*	X			X	X	X			X					*Not enough suitable habitat for 8 to 10

															populations at this time.
Sesbania tomentosa	X*		X		X	X	X	X		X					*Species is wide ranging.‡
Silene alexandri	X*	X			X	X	X			X					*Not enough suitable habitat for 8 to 10 populations at this time.
Silene lanceolata	X		X		X	X				X			X*		*Cliff faces and ledges of gullies in dry or mesic shrubland.
Spermolepis hawaiiensis	X*		X		X	X	X				X				*Species is wide ranging.‡
Stenogyne bifida	X	X			X	X	X	X		X					
Vigna o-wahuensis	X*		X		X	X	X	X		X					*Species is wide ranging.‡
Zanthoxylum hawaiiense	X*		X		X		X	X	X						*Species is wide ranging.‡

Molokai G

The proposed unit Molokai G provides occupied habitat for two species: *Mariscus faurei* and *Sesbania tomentosa.* It is proposed for designation because it contains the physical and biological features that are considered essential for their conservation on Molokai, and provides habitat to support one or more of the 8 to 10 populations for each species and 300 mature individuals per population, throughout their known historical range considered by the recovery plans to be necessary for the conservation of each species.

This unit also provides unoccupied habitat for two species: *Hibiscus brackenridgei* and *Isodendrion pyrifolium.* Designation of this unit is essential to the conservation of these species because it contains the physical and biological features that are considered essential for their conservation on Molokai, and provides habitat to support one or more additional populations necessary to meet the recovery objectives of 8 to 10 populations for each species and 300 mature individuals per population, throughout their known historical range (see the discussion of conservation requirements in Section D, and in the table for Molokai G).

The unit contains a total of 3,023 ha (7,471 ac) on State and privately owned lands. It is bordered on the west by Kaunakakai watershed and in the east by Wawaia watershed and includes portions of Kamalo, Kamiloloa and Kawela watersheds. This unit contains all of the Kamiloloa Plant Sanctuary. The natural features include: Ekahanui (summit), Kapuaokoolau Gulch, Kau Gulch, Kukuiokahoalii (summit), Lepelepe (summit), Makakiloia (summit), North Fork Kaunakakai Gulch, Puu Papai, and South Fork Kaunakakai Gulch.

Molokai G

Species	1. 8–10 pop. guidelines.	2. Island endemic.	3. Multi-island/current other islands.	4. Multi-island/no current other islands.	5. Non-viable populations.	6. Several occ. vulnerable to destruction.	7. Species with variable habitats.	8. Not all occupied habitat needed.	9. Long-lived perennial–100/pop.	10. Short-lived perennial–300/pop.	11. Annual–500/pop.	12. Narrow endemic.	13. Restricted habitat requirements.	14. Hybridization is possible.	Notes
Hibiscus brackenridgei	X*		X**		X**		X			X					*Species is wide ranging.‡ **Historical on Molokai
Isodendrion pyrifolium	X		X*		X*					X					*Historical on Molokai
Mariscus fauriei	X*		X		X	X	X			X					*Species is wide ranging.‡
Sesbania tomentosa	X*		X		X	X	X	X		X					*Species is wide ranging.‡

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a) of the Act requires Federal agencies, including the Service, to ensure that actions they fund, authorize, or carry out do not destroy or adversely modify critical habitat. Destruction or adverse modification occurs when a Federal action directly or indirectly alters critical habitat to the extent that the action appreciably diminishes the value of critical habitat for the conservation of the species. Individuals, organizations, States, local governments, and other non-Federal entities are affected by the designation of critical habitat only if their actions occur on Federal lands, require a Federal permit, license, or other authorization, or involve Federal funding.

Section 7(a) of the Act requires Federal agencies, including the Service, to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is designated or proposed. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act requires Federal agencies to confer with us on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. Conference reports provide conservation recommendations to assist the agency in eliminating conflicts that may be caused by the proposed action. The conservation recommendations in a conference report are advisory.

We may issue a formal conference report, if requested by the Federal action agency. Formal conference reports include an opinion that is prepared according to 50 CFR 402.14, as if the species was listed or critical habitat was designated. We may adopt the formal conference report as the biological opinion when the species is listed or critical habitat is designated, if no substantial new information or changes in the action alter the content of the opinion (see 50 CFR 402.10(d)).

If a species is listed or critical habitat is designated, section 7(a)(2) of the Act requires Federal agencies to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. Through this consultation, the Federal action agency would ensure that the permitted actions do not destroy or adversely modify critical habitat.

If we issue a biological opinion concluding that a project is likely to result in the destruction or adverse modification of critical habitat, we would also provide reasonable and prudent alternatives to the project, if any are identifiable. Reasonable and prudent alternatives are defined at 50 CFR 402.02 as alternative actions identified during consultation that can be implemented in a manner consistent with the intended purpose of the action, that are consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that the Director believes would avoid destruction or adverse modification of critical habitat. Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions under certain circumstances, including instances where critical habitat is subsequently designated and the Federal agency has retained discretionary involvement, or control has been retained or is authorized by law. Consequently, some Federal agencies may request reinitiation of consultation or conferencing with us on actions for which formal consultation has been completed if those actions may affect designated critical habitat or adversely modify or destroy proposed critical habitat.

Activities on Federal lands that may affect critical habitat of one or more of the 46 plant species will require section 7 consultation. Activities on private or State lands requiring a permit from a Federal agency, such as a permit from the U.S. Army Corps of Engineers (Corps) under section 404 of the Clean Water Act (33 U.S.C. 1344 *et seq.*), or a section 10(a)(1)(B) permit from us, or some other Federal action, including funding (*e.g.* from the Federal Highway Administration, Federal Aviation Administration (FAA), Federal Emergency Management Agency (FEMA), permits from the Department of Housing and Urban Development, activities funded by the EPA, Department of Energy, or any other Federal agency; regulation of airport improvement activities by the FAA; and construction of communication sites licensed by the Federal Communication Commission will also continue to be subject to the section 7 consultation process. Federal actions not affecting critical habitat and actions on non-Federal lands that are not federally funded, authorized, or permitted do not require section 7 consultation.

Section 4(b)(8) of the Act requires us to briefly describe and evaluate in any proposed or final regulation that designates critical habitat those activities involving a Federal action that may adversely modify such habitat or that may be affected by such designation. We note that such activities may also jeopardize the continued existence of the species.

Activities that, when carried out, funded, or authorized by a Federal agency, may directly or indirectly adversely affect critical habitat include, but are not limited to:

(1) Activities that appreciably degrade or destroy the primary constituent elements including, but not limited to: Overgrazing; maintenance of feral ungulates; clearing or cutting of native live trees and shrubs, whether by burning or mechanical, chemical, or other means (*e.g.*, woodcutting, bulldozing, construction, road building, mining, herbicide application); introducing or enabling the spread of non-native species; and taking actions that pose a risk of fire.

(2) Activities that alter watershed characteristics in ways that would appreciably reduce groundwater recharge or alter natural, dynamic wetland or other vegetative communities. Such activities may include water diversion or impoundment, excess groundwater pumping, manipulation of vegetation such as timber harvesting, residential and commercial development, and grazing of livestock or horses that degrades watershed values.

(3) Rural residential construction that includes concrete pads for foundations and the installation of septic systems in wetlands where a permit under section 404 of the Clean Water Act would be required by the Corps.

(4) Recreational activities that appreciably degrade vegetation.

(5) Mining of sand or other minerals.

(6) Introducing or encouraging the spread of non-native plant species into critical habitat units.

(7) Importation of non-native species for research, agriculture, and aquaculture, and the release of biological control agents that would have unanticipated effects on the primary constituent elements of designated critical habitat.

If you have questions regarding whether specific activities will likely

constitute adverse modification of critical habitat, contact the Field Supervisor, Pacific Islands Ecological Services Field Office (see **ADDRESSES** section). Requests for copies of the regulations on listed plants and animals, and inquiries about prohibitions and permits may be addressed to the U.S. Fish and Wildlife Service, Branch of Endangered Species/Permits, 911 N.E. 11th Ave., Portland, OR 97232–4181 (telephone 503/231–2063; facsimile 503/231–6243).

Relationship to Habitat Conservation Plans and Other Planning Efforts

Currently, there are no HCPs that include any of the plant species discussed in this proposal as covered species. In the event that future HCPs covering any of the discussed plant species are developed within the boundaries of designated critical habitat, we will work with applicants to encourage them to provide for protection and management of habitat areas essential to the conservation of the species. This could be accomplished by either directing development and habitat modification to nonessential areas, or appropriately modifying activities within essential habitat areas so that such activities will not adversely modify the primary constituent elements. The HCP development process would provide an opportunity for more intensive data collection and analysis regarding the use of particular areas by these plant species.

Economic and Other Relevant Impacts

Section 4(b)(2) of the Act requires us to designate critical habitat on the basis of the best scientific and commercial information available and to consider economic and other relevant impacts of designating a particular area as critical habitat. We may exclude areas from critical habitat upon a determination that the benefits of such exclusions outweigh the benefits of specifying such areas as critical habitat. However, we cannot exclude such areas from critical habitat when such exclusion will result in the extinction of the species concerned. We will conduct an analysis of the impacts of designating these areas as critical habitat and in accordance with recent decisions in the *N.M. Cattlegrowers Ass'n* v. *U.S. Fish and Wildlife Serv.*, 248 F.3d 1277 (10th Cir. 2001) prior to a final determination. The economic analysis will include detailed information on the baseline costs and benefits of the critical habitat designation regardless of whether the costs are coextensive with listing, where such estimates are available. This information on the baseline will allow a fuller appreciation of the economic impacts associated with critical habitat designation. When completed, we will announce the availability of the draft economic analysis with a notice in the **Federal Register**, and we will open a public comment period on the draft economic analysis and re-open the comment period on the proposed rule at that time.

We will utilize the final economic analysis, and take into consideration all comments and information regarding economic or other impacts submitted during the public comment period and the public hearing, to make final critical habitat designations. We may exclude areas from critical habitat upon a determination that the benefits of such exclusions outweigh the benefits of specifying such areas as part of critical habitat; however, we cannot exclude areas from critical habitat when such exclusion will result in the extinction of the species.

Public Comments Solicited

It is our intent that any final action resulting from this proposal be as accurate and as effective as possible. Therefore, we solicit comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry or any other interested party concerning this proposed rule.

We invite comments from the public that provide information on whether lands within proposed critical habitat are currently being managed to address conservation needs of these listed plants. As stated earlier in this revised proposed rule, if we receive information that any of the areas proposed as critical habitat are adequately managed, we may delete such areas from the final rule, because they would not meet the definition in section 3(5)(A)(i) of the Act. In determining adequacy of management, we must find that the management effort is sufficiently certain to be implemented and effective so as to contribute to the elimination or adequate reduction of relevant threats to the species.

We are soliciting comment in this revised proposed rule on whether current land management plans or practices applied within areas proposed as critical habitat adequately address the threat to these listed species.

We are aware that the State of Hawaii and private landowners are considering the development and implementation of land management plans or agreements that may promote the conservation and recovery of endangered and threatened plant species on the island of Molokai. We are soliciting comments in this proposed rule on whether current land management plans or practices applied within the areas proposed as critical habitat provide for the conservation of the species by adequately addressing the threats. We are also soliciting comments on whether future development and approval of conservation measures (*e.g.*, HCPs, Conservation Agreements, Safe Harbor Agreements) should be excluded from critical habitat and if so, by what mechanism.

In addition, we are seeking comments on the following:

(1) The reasons why critical habitat for any of these species is prudent or not prudent as provided by section 4 of the Act and 50 CFR 424.12(a)(1), including those species for which prudency determinations have been published in previous proposed rules and which have been incorporated by reference;

(2) The reasons why any particular area should or should not be designated as critical habitat for any of these species, as critical habitat is defined by section 3 of the Act (16 U.S.C. 1532 (5));

(3) Specific information on the amount, distribution, and quality of habitat for the 46 species, and what habitat is essential to the conservation of the species and why;

(4) Land use practices and current or planned activities in the subject areas and their possible impacts on proposed critical habitat;

(5) Any economic or other impacts resulting from the proposed designations of critical habitat, including any impacts on small entities or families, and

(6) Economic and other potential values associated with designating critical habitat for the above plant species such as those derived from non-consumptive uses (*e.g.*, hiking, camping, birding, enhanced watershed protection, increased soil retention, ''existence values,'' and reductions in administrative costs); and

(7) The methodology we might use, under section 4(b)(2) of the Act, in determining if the benefits of excluding an area from critical habitat outweigh the benefits of specifying the area as critical habitat.

Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their home address, which we will honor to the extent allowable by law. There also may be circumstances in which we would withhold a respondent's identity, as allowable by law. If you wish us to withhold your name and/or address, you must state this request prominently at the

beginning of your comment. However, we will not consider anonymous comments. To the extent consistent with applicable law, we will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address (see **ADDRESSES** section).

The comment period closes on June 4, 2002. Written comments should be submitted to the Service Office listed in the **ADDRESSES** section. We are seeking comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested parties concerning the proposed rule. For additional information on public hearings see the **DATES** section.

Peer Review

In accordance with our policy published on July 1, 1994 (59 FR 34270), we will seek the expert opinions of at least three appropriate and independent specialists regarding this proposed rule. The purpose of such review is to ensure listing and critical habitat decisions are based on scientifically sound data, assumptions, and analyses. We will send copies of this proposed rule to these peer reviewers immediately following publication in the **Federal Register**. We will invite the peer reviewers to comment, during the public comment period, on the specific assumptions and conclusions regarding the proposed designations of critical habitat.

We will consider all comments and data received during the 60-day comment period on this revised proposed rule during preparation of a final rulemaking. Accordingly, the final decision may differ from this proposal.

Clarity of the Rule

Executive Order 12866 requires each agency to write regulations and notices that are easy to understand. We invite your comments on how to make this proposed rule easier to understand including answers to questions such as the following: (1) Are the requirements in the proposed rule clearly stated? (2) Does the proposed rule contain technical language or jargon that interferes with the clarity? (3) Does the format of the proposed rule (grouping and order of sections, use of headings, paragraphing, etc.) aid or reduce its clarity? (4) Is the description of the proposed rule in the **SUPPLEMENTARY INFORMATION** section of the preamble helpful in understanding the document? (5) What else could we do to make the proposed rule easier to understand?

Send a copy of any comments that concern how we could make this notice easier to understand to: Office of Regulatory Affairs, Department of the Interior, Room 7229, 1849 C Street, NW, Washington, DC 20240.

Taxonomic Changes

At the time we listed *Cyanea grimesiana* ssp. *grimesiana*, *Hibiscus brackenridgei*, and *Phyllostegia mollis* we followed the taxonomic treatments in Wagner *et al.* (1990), the widely used and accepted *Manual of the Flowering Plants of Hawaii*. Subsequent to the final listing we became aware of new taxonomic treatments of these species. Due to the court-ordered deadlines we are required to publish this proposal to designate critical habitat on Molokai before we can prepare and publish a notice of taxonomic changes for these three species. We propose to publish a taxonomic change notice for these three species after we have published the final critical habitat designations on Molokai. At that time we will evaluate the critical habitat designations on Molokai for these three species in light of any changes that may result from taxonomic changes in each species' current and historical range and primary constituent elements.

Required Determinations

Regulatory Planning and Review

In accordance with Executive Order 12866, this document is a significant rule and was reviewed by the Office of Management and Budget (OMB) in accordance with the four criteria discussed below. We are preparing a draft economic analysis of this proposed action, which will be available for public comment, to determine the economic consequences of designating the specific areas identified as critical habitat. The availability of the draft economic analysis will be announced in the **Federal Register** so that it is available for public review and comments.

(a) While we will prepare an economic analysis to assist us in considering whether areas should be excluded pursuant to section 4 of the Act, we do not believe this rule will have an annual economic effect of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State or local governments or communities. Therefore, at this time, we do not believe a cost benefit and economic analysis pursuant to Executive Order 12866 is required. We will revisit this if the economic analysis indicates greater impacts than currently anticipated.

The dates for which the 46 plant species were listed as threatened or endangered can be found in Table 4(b). Consequently, and as needed, we will conduct formal and informal section 7 consultations with other Federal agencies to ensure that their actions will not jeopardize the continued existence of these species. Under the Act, critical habitat may not be adversely modified by a Federal agency action. Critical habitat does not impose any restrictions on non-Federal persons unless they are conducting activities funded or otherwise sponsored, authorized, or permitted by a Federal agency (see Table 6).

TABLE 6.—IMPACTS OF CRITICAL HABITAT DESIGNATION FOR 46 PLANTS FROM THE ISLAND OF MOLOKAI

Categories of activities	Activities potentially affected by species listing only	Additional activities potentially affected by critical habitat designation. [1]
Federal Activities Potentially Affected [2].	Activities conducted by the Army Corps of Engineers, Department of Transportation, Department of Defense, Department of Agriculture, Environmental Protection Agency, Federal Emergency Management Agency, Federal Aviation Administration, Federal Communications Commission, Department of Interior activities that require a Federal action (permit, authorization, or funding) and may remove or destroy habitat for these plants by mechanical, chemical, or other means (*e.g.*, overgrazing, clearing, cutting native live trees and shrubs, water diversion, impoundment, groundwater pumping, road building, mining, herbicide application, recreational use etc.) or appreciably decrease habitat value or quality through indirect effects (*e.g.*, edge effects, invasion of exotic plants or animals, fragmentation of habitat).	These same activities carried out by Federal Agencies in designated areas where section 7 consultations would not have occurred but for the critical habitat designation.
Private or other non-Federal Activities Potentially Affected [3].	Activities that require a Federal action (permit, authorization, or funding) and may remove or destroy habitat for these plants by mechanical, chemical, or other means (*e.g.*, overgrazing, clearing, cutting native live trees and shrubs, water diversion, impoundment, groundwater pumping, road building, mining, herbicide application, recreational use etc.) or appreciably decrease habitat value or quality through indirect effects (*e.g.*, edge effects, invasion of exotic plants or animals, fragmentation of habitat).	These same activities carried out by Federal Agencies in designated areas where section 7 consultations would not have occurred but for the critical habitat designation.

[1] This column represents activities potentially affected by the critical habitat designation in addition to those activities potentially affected by listing the species.
[2] Activities initiated by a Federal agency.
[3] Activities initiated by a private or other non-Federal entity that may need Federal authorization or funding.

Section 7 of the Act requires Federal agencies to ensure that they do not jeopardize the continued existence of these species. Based on our experience with these species and their needs, we conclude that most Federal or federally-authorized action that could potentially cause an adverse modification of the proposed critical habitat would currently be considered as ''jeopardy'' under the Act in areas occupied by the species because consultation would already be required due to the presence of the listed species, and the duty to avoid adverse modification of critical habitat would not trigger additional regulatory impacts beyond the duty to avoid jeopardizing the species. Accordingly, we do not expect the designation of currently occupied areas as critical habitat to have any additional incremental impacts on what actions may or may not be conducted by Federal agencies or non-Federal persons that receive Federal authorization or funding.

The designation of areas as critical habitat where section 7 consultations would not have occurred but for the critical habitat designation (that is, in areas currently unoccupied by the these listed species), may have impacts that are not attributable to the species listing on what actions may or may not be conducted by Federal agencies or non-Federal persons who receive Federal authorization or funding. We will evaluate any impact through our economic analysis (under section 4 of the Act; see Economic Analysis section of this rule). Non-Federal persons who do not have a Federal nexus with of their actions are not restricted by the designation of critical habitat.

(b) We do not expect this rule to create inconsistencies with other agencies' actions. As discussed above, Federal agencies have been required to ensure that their actions not jeopardize the continued existence of the 46 plant species since their listing between 1991 and 1999. For the reasons discussed above, the prohibition against adverse modification of critical habitat would not be expected to impose few, if any, additional restrictions to those that currently exist in the proposed critical habitat on currently occupied lands. However, we will evaluate any impact of designating areas where section 7 consultations would not have occurred but for the critical habitat designation through our economic analysis. Because of the potential for impacts on other Federal agency activities, we will continue to review this proposed action for any inconsistencies with other Federal agency actions.

(c) We do not expect this proposed rule, if made final, to significantly affect entitlements, grants, user fees, loan programs, or the rights and obligations of their recipients. Federal agencies are currently required to ensure that their activities do not jeopardize the continued existence of a listed species, and, as discussed above, we do not anticipate that the adverse modification prohibition, resulting from critical habitat designation will have any incremental effects in areas of occupied habitat on any Federal entitlement, grant, or loan program. We will evaluate any impact of designating areas where section 7 consultation would not have occurred but for the critical habitat designation through our economic analysis.

(d) OMB has determined that this rule may raise novel legal or policy issues and, as a result, this rule has undergone OMB review.

Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*)

Under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Act (SBREFA) of 1996), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (*i.e.*, small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. SBREFA amended the Regulatory Flexibility Act (RFA) to require Federal

agencies to provide a statement of the factual basis for certifying that the rule will not have a significant economic effect on a substantial number of small entities. SBREFA also amended the RFA to require a certification statement. In today's rule, we are certifying that the rule will not have a significant effect on a substantial number of small entities. However, should our economic analysis provide a contrary indication, we will revisit this determination at that time. The following discussion explains our rationale.

According to the Small Business Administration, small entities include small organizations, such as independent non-profit organizations, and small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents, as well as small businesses. Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than $5 million in annual sales, general and heavy construction businesses with less than $27.5 million in annual business, special trade contractors doing less than $11.5 million in annual business, and agricultural businesses with annual sales less than $750,000. To determine if potential economic impacts to these small entities are significant, we consider the types of activities that might trigger regulatory impacts under this rule as well as the types of project modifications that may result. In general, the term significant economic impact is meant to apply to a typical small business firm's business operations.

To determine if the rule would affect a substantial number of small entities, we consider the number of small entities affected within particular types of economic activities (e.g., housing development, grazing, oil and gas production, timber harvesting, etc.). We apply the ''substantial number'' test individually to each industry to determine if certification is appropriate. In estimating the numbers of small entities potentially affected, we also consider whether their activities have any Federal involvement; some kinds of activities are unlikely to have any Federal involvement and so will not be affected by critical habitat designation.

Designation of critical habitat only affects activities conducted, funded, or permitted by Federal agencies; non-Federal activities are not affected by the designation. In areas where the species is present, Federal agencies are already required to consult with us under section 7 of the Act on activities that they fund, permit, or implement that may affect *Adenophorus periens, Alectryon macrococcus, Bidens wiebkei, Brighamia rockii, Canavalia molokaiensis, Centaurium sebaeoides, Clermontia oblongifolia* ssp. *brevipes, Ctenitis squamigera, Cyanea dunbarii, Cyanea grimesiana* ssp. *grimesiana, Cyanea mannii, Cyanea procera, Diellia erecta, Diplazium molokaiense, Eugenia koolauensis, Flueggea neowawraea, Hedyotis mannii, Hesperomannia arborescens, Hibiscus arnottianus* ssp. *immaculatus, Hibiscus brackenridgei, Ischaemum byrone, Isodendrion pyrifolium, Labordia triflora, Lysimachia maxima, Mariscus fauriei, Marsilea villosa, Melicope mucronulata, Melicope reflexa, Neraudia sericea, Peucedanum sandwicense, Phyllostegia mannii, Phyllostegia mollis, Plantago princeps, Platanthera holochila, Schiedea lydgatei, Schiedea nuttallii, Schiedea sarmentosa, Sesbania tomentosa, Silene alexandri, Silene lanceolata, Spermolepis hawaiiensis, Stenogyne bifida, Tetramolopium rockii, Vigna o-wahuensis,* and *Zanthoxylum hawaiiense*. If these critical habitat designations are finalized, Federal agencies must also consult with us if their activities may affect designated critical habitat. However, in areas where the species is present, we do not believe this will result in any additional regulatory burden on Federal agencies or their applicants because consultation would already be required due to the presence of the listed species, and the duty to avoid adverse modification of critical habitat would not trigger additional regulatory impacts beyond the duty to avoid jeopardizing the species.

Even if the duty to avoid adverse modification does not trigger additional regulatory impacts in areas where the species is present, designation of critical habitat could result in an additional economic burden on small entities due to the requirement to reinitiate consultation for ongoing Federal activities. However, since these 46 plant species were listed (between 1991 and 1999), on the island of Molokai we have conducted 19 informal consultations and no formal consultations, in addition to consultations on Federal grants to State wildlife programs, which do not affect small entities. Six informal consultations were conducted on behalf of private individuals or consulting firms, requesting species lists for different locations on Molokai. None of the 46 species were reported from these locations. Five informal consultations were conducted on behalf of NRCS requesting species lists or regarding revegetation or habitat restoration projects at different locations on Molokai. None of the 46 species were reported from these locations. Two informal consultations were conducted on behalf of the State of Hawaii and Maui Co. regarding proposed landfill projects. None of the 46 species were reported from these locations. One informal consultation was conducted on behalf of the U.S. Army Corps of Engineers regarding a stream restoration project. None of the 46 species were reported from the project area. One informal consultation was conducted on behalf of the Federal Communications Commission regarding an antenna cell site in Kaunakakai. None of the 46 species were reported from the project area. One informal consultation was conducted on behalf of a private consulting firm requesting a species list for a proposed project regarding a VHF direction finder in Mauna Loa. Three of the 46 species, *Cyperus trachysanthos, Eugenia koolauensis,* and *Sesbania tomentosa*, were reported from the project area. One informal consultation was conducted with the U.S. Department of the Navy regarding a proposed Marine Corps training area on privately-owned leased land in west Molokai. Four of the 46 species, *Centaurium sebaeoides, Marsilea villosa, Sesbania tomentosa, Tetramolopium rockii* were reported from the project area. One informal consultation was conducted on behalf of a private non-profit organization requesting a species list for Kamalo and Kapualei ahupuaa. Three of the 46 species, *Cyanea mannii, Cyanea procera,* and *Labordia triflora* were reported from this area. One informal consultation was conducted with the U.S. Army Corps of Engineers regarding unexploded ordinance removal activities at Papohaku Rangelands Bombing Range and Punakua Land Target Area. None of the 46 species were reported from the project area.

Seven of the informal consultations may have concerned small entities (the private individuals, consulting firms, or the non-profit organization). However, we do not believe this is a substantial number of small entities (see earlier discussion on substantial number). One or more of the 46 Molokai species were reported from 3 of the 7 project areas. However, none of these 3 proposed projects affected the Molokai species. We have determined that the State of Hawaii and Maui Co. are not small entities. The U.S. Army Corps of Engineers, NRCS, Federal Communications Commission, and the

U.S. Department of the Navy are not small entities. For the 12 informal consultations with the State of Hawaii, Maui Co., and Federal agencies we concurred with the State of Hawaii, Maui Co., and each Federal agency's determination that the project, as proposed, was not likely to adversely affect listed species. Although four of the NRCS projects are ongoing, they do not directly affect nor concern small entities, so the requirement to reinitiate consultation for ongoing projects will not affect a substantial number of small entities on Molokai.

In areas where the species is clearly not present, designation of critical habitat could trigger additional review of Federal activities under section 7 of the Act, that would otherwise not be required. We are aware of relatively few activities in the proposed critical habitat areas for these 46 plants that have Federal involvement, and thus, would require consultation or reinitiation of already completed consultations for on-going projects. As mentioned above, only three of the 19 informal consultations completed under section 7 involved any of the species. As a result, we can not easily identify future consultations that may be due to the listing of the species or the increment of additional consultations that may be required by this critical habitat designation. Therefore, for the purposes of this review and certification under the Regulatory Flexibility Act, we are assuming that any future consultations in the area proposed as critical habitat will be due to the critical habitat designations.

On Molokai, 47 percent of the designations are on private lands, 53 percent of the designations are on State lands, and less than one percent of the designations are on Federal lands. Nearly all of the land within the critical habitat units will have limited suitability for development, land uses, and activities because of the remote locations, lack of access, and rugged terrain of these lands. Approximately 46 percent of this land is within the State Conservation District where State land-use controls severely limit development and most activities. Approximately 53 percent of this land is within the State Agricultural District where only activities such as crops, livestock, grazing, and accessory structures and farmhouses are allowed. Less than one percent is within the State Urban District. On non-Federal lands, activities that lack Federal involvement would not be affected by the critical habitat designations. Activities of an economic nature that are likely to occur on non-Federal lands in the area encompassed by these proposed designations consist of improvements in communications and tracking facilities; ranching; road improvements; recreational use such as hiking, camping, picnicking, game hunting, fishing; botanical gardens; and, crop farming. With the exception of communications and tracking facilities improvements by the Federal Aviation Administration or the Federal Communications Commission, these activities are unlikely to have Federal involvement. On lands that are in agricultural production, the types of activities that might trigger a consultation include irrigation ditch system projects that may require section 404 authorizations from the Corps, and watershed management and restoration projects sponsored by NRCS. However the NRCS restoration projects typically are voluntary, and the irrigation ditch system projects within lands that are in agricultural production are rare and may affect only a small percentage of the small entities within these proposed critical habitat designations.

Lands that are within the State Urban District are located within undeveloped coastal areas. The types of activities that might trigger a consultation include shoreline restoration or modification projects that may require section 404 authorizations from the Corps or FEMA, housing or resort development that may require permits from the Department of Housing and Urban Development, and activities funded or authorized by the EPA. However, we are not aware of a significant number of future activities that would require Federal permitting or authorization in these coastal areas. Therefore, we conclude that the proposed rule would not affect a substantial number of small entities. We are not aware of any commercial activities on the Federal lands included in these proposed critical habitat designations.

Even if a substantial number of small entities were affected by the consultation requirements of the Act, which we believe would be highly unlikely, and based on our experience with section 7 consultations for all listed species, virtually all projects—including those that, in their initial proposed form, would result in jeopardy or adverse modification determinations in section 7 consultations—can be implemented successfully with, at most, the adoption of reasonable and prudent alternatives. Furthermore, these measures must be economically feasible, consistent with the intended purpose of the action, and within the scope of authority of the Federal agency involved in the consultation (see 50 CFR 404.2, definition of reasonable and prudent alternative). Therefore, such measures are not likely to result in a significant economic impact to a substantial number of small entities.

As required under section 4(b)(2) of the Act, we will conduct an analysis of the potential economic impacts of this proposed critical habitat designation, and will make that analysis available for public review and comment before finalizing these designations. However, court deadlines require us to publish this proposed rule before the economic analysis can be completed.

In summary, we have considered whether this proposed rule would result in a significant economic effect on a substantial number of small entities. It would not affect a substantial number of small entities. Approximately 53 percent of the lands proposed as critical habitat are on State of Hawaii lands. The State of Hawaii is not a small entity. Approximately 47 percent of the lands proposed as critical habitat are on private lands. Many of these parcels are located in areas where likely future land uses are not expected to result in Federal involvement or section 7 consultations. As discussed earlier, most of the private and State parcels within the proposed designation are currently being used for recreational and agricultural purposes and, therefore, are not likely to require any Federal authorization. In the remaining areas, section 7 application, the only trigger for regulatory impact under this rule, would be limited to a subset of the area proposed. The most likely future section 7 consultations resulting from this rule would be for informal consultations on federally funded land and water conservation projects, species-specific surveys and research projects, and watershed management and restoration projects sponsored by NRCS. These consultations would likely occur on only a subset of the total number of parcels and therefore not likely to affect a substantial number of small entities. This rule would result in project modifications only when proposed Federal activities would destroy or adversely modify critical habitat. While this may occur, it is not expected frequently enough to affect a substantial number of small entities. Even when it does occur, we do not expect it to result in a significant economic impact, as the measures included in reasonable and prudent alternatives must be economically feasible and consistent with the proposed action. Therefore, we are certifying that the proposed designation of critical habitat for the following species: *Adenophorus periens, Alectryon macrococcus, Bidens wiebkei,*

Brighamia rockii, Canavalia molokaiensis, Centaurium sebaeoides, Clermontia oblongifolia ssp. brevipes, Ctenitis squamigera, Cyanea dunbarii, Cyanea grimesiana ssp. grimesiana, Cyanea mannii, Cyanea procera, Diellia erecta, Diplazium molokaiense, Eugenia koolauensis, Flueggea neowawraea, Hedyotis mannii, Hesperomannia arborescens, Hibiscus arnottianus ssp. immaculatus, Hibiscus brackenridgei, Ischaemum byrone, Isodendrion pyrifolium, Labordia triflora, Lysimachia maxima, Mariscus fauriei, Marsilea villosa, Melicope mucronulata, Melicope reflexa, Neraudia sericea, Peucedanum sandwicense, Phyllostegia mannii, Phyllostegia mollis, Plantago princeps, Platanthera holochila, Schiedea lydgatei, Schiedea nuttallii, Schiedea sarmentosa, Sesbania tomentosa, Silene alexandri, Silene lanceolata, Spermolepis hawaiiensis, Stenogyne bifida, Tetramolopium rockii, Vigna o-wahuensis, and *Zanthoxylum hawaiiense* will not have a significant economic impact on a substantial number of small entities, and an initial regulatory flexibility analysis is not required. However, should the economic analysis of this rule indicate otherwise, we will revisit this determination.

Executive Order 13211

On May 18, 2001, the President issued Executive Order 13211, on regulations that significantly affect energy supply, distribution, and use. Executive Order 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. Although this rule is a significant regulatory action under Executive Order 12866, it is not expected to significantly affect energy supplies, distribution, or use. Therefore, this action is not a significant energy action and no Statement of Energy Effects is required.

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*):

(a) We believe this rule, as proposed, will not ''significantly or uniquely'' affect small governments. A Small Government Agency Plan is not required. Small governments will not be affected unless they propose an action requiring Federal funds, permits or other authorizations. Any such activities will require that the Federal agency ensure that the action will not adversely modify or destroy designated critical habitat. However, as previously discussed, these actions are currently subject to equivalent restrictions through the listing protections of the species, and no further restrictions are anticipated to result from critical habitat designation of occupied areas. In our economic analysis, we will evaluate any impact of designating areas where section 7 consultations would not have occurred but for the critical habitat designation.

(b) This rule, as proposed, will not produce a Federal mandate on State or local governments or the private sector of $100 million or greater in any year, that is, it is not a ''significant regulatory action'' under the Unfunded Mandates Reform Act. The designation of critical habitat imposes no obligations on State or local governments.

Takings

In accordance with Executive Order 12630 (''Government Actions and Interference with Constitutionally Protected Private Property Rights''), we have analyzed the potential takings implications of designating critical habitat for the 46 species from Molokai in a preliminary takings implication assessment. The takings implications assessment concludes that this proposed rule does not pose significant takings implications. Once the revised economic analysis is completed for this proposed rule, we will review and revise this preliminary assessment as warranted.

Federalism

In accordance with Executive Order 13132, the proposed rule does not have significant Federalism effects. A Federalism assessment is not required. In keeping with Department of Interior policy, we requested information from appropriate State agencies in Hawaii. The designation of critical habitat in areas currently occupied by one or more of the 46 plant species imposes no additional restrictions to those currently in place, and, therefore, has little incremental impact on State and local governments and their activities. The designation of critical habitat in unoccupied areas may require section 7 consultation on non Federal lands (where a Federal nexus occurs) that might otherwise not have occurred. However, there will be little additional impact on State and local governments and their activities because all of the proposed critical habitat areas are occupied by at least one species. The designations may have some benefit to these governments in that the areas essential to the conservation of these species are more clearly defined, and the primary constituent elements of the habitat necessary to the survival of the species are specifically identified. While this definition and identification does not alter where and what federally sponsored activities may occur, it may assist these local governments in long range planning, rather than waiting for case-by-case section 7 consultation to occur.

Civil Justice Reform

In accordance with Executive Order 12988, the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and does meet the requirements of sections 3(a) and 3(b)(2) of the Order. We are proposing to designate critical habitat in accordance with the provisions of the Endangered Species Act. The rule uses standard property descriptions and identifies the primary constituent elements within the designated areas to assist the public in understanding the habitat needs of the 46 plant species.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act. This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number.

National Environmental Policy Act

We have determined we do not need to prepare an Environmental Assessment and/or an Environmental Impact Statement as defined by the National Environmental Policy Act of 1969 in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act, as amended. We published a notice outlining our reason for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This proposed determination does not constitute a major Federal action significantly affecting the quality of the human environment.

Government-to-Government Relationship with Tribes

In accordance with the President's memorandum of April 29, 1994, ''Government-to-Government Relations with Native American Tribal Governments'' (59 FR 22951) E.O. 13175 and 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. We have determined that there are

no tribal lands essential for the conservation of these 46 plant species. Therefore, designation of critical habitat for these 46 species has not been proposed on Tribal lands.

References Cited

A complete list of all references cited in this proposed rule is available upon request from the Pacific Islands Office (see **ADDRESSES** section).

Authors

The primary authors of this notice are Michelle Stephens, Christa Russell, Gregory Koob and Marigold Zoll (see **ADDRESSES** section).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation.

Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500; unless otherwise noted.

2. In § 17.12(h) revise the entries for *Alectryon macrococcus, Bidens wiebkei, Brighamia rockii, Canavalia molokaiensis, Centaurium sebaeoides, Clermontia oblongifolia ssp. brevipes, Cyanea dunbarii, Cyanea grimesiana ssp. grimesiana, Cyanea mannii, Cyanea procera, Eugenia koolauensis, Flueggea neowawraea, Hedyotis mannii, Hesperomannia arborescens, Hibiscus arnottianus ssp. immaculatus, Hibiscus brackenridgei, Ischaemum byrone, Isodendrion pyrifolium, Labordia triflora, Lysimachia maxima, Mariscus fauriei, Melicope mucronulata, Melicope reflexa, Neraudia sericea, Peucedanum sandwicense, Phyllostegia mannii, Phyllostegia mollis, Plantago princeps, Platanthera holochila, Schiedea lydgatei, Schiedea nuttallii, Schiedea sarmentosa, Sesbania tomentosa, Silene alexandri, Silene lanceolata, Spermolepis hawaiiensis, Stenogyne bifida, Tetramolopium rockii, Vigna o-wahuensis,* and *Zanthoxylum hawaiiense* under ''FLOWERING PLANTS'' and *Adenophorus periens, Ctenitis squamigera, Diellia erecta, Diplazium molokaiense, Marsilea villosa,* and *Pteris lidgatei* under ''FERNS AND ALLIES'' to read as follows:

§ 17.12 Endangered and threatened plants.

* * * * *

(h) * * *

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
FLOWERING PLANTS							
*	*	*	*	*	*		*
Alectryon macrococcus	Mahoe	U.S.A. (HI)	Sapindaceae	E	467	17.96(a)	NA
*	*	*	*	*	*		*
Bidens wiebkei	Ko oko olau	U.S.A. (HI)	Asteraceae	E	480	17.96(a)	NA
*	*	*	*	*	*		*
Brighamia rockii	Pua ala	U.S.A. (HI)	Campanulaceae	E	480	17.96(a)	NA
*	*	*	*	*	*		*
Canavalia molokaiensis	Awikiwiki	U.S.A. (HI)	Fabaceae	E	480	17.96(a)	NA
*	*	*	*	*	*		*
Centaurium sebaeoides	Awiwi	U.S.A. (HI)	Gentianaceae	E	448	17.96(a)	NA
*	*	*	*	*	*		*
Clermontia oblongifolia ssp. brevipes.	Oha wai	U.S.A. (HI)	Campanulaceae	E	480	17.96(a)	NA
*	*	*	*	*	*		*
Cyanea dunbarii	Haha	U.S.A. (HI)	Campanulaceae	E	594	17.96(a)	NA
*	*	*	*	*	*		*
Cyanea grimesiana ssp. *grimesiana.*	Haha	U.S.A. (HI)	Campanulaceae	E	592	17.96(a)	NA
*	*	*	*	*	*		*
Cyanea mannii	Haha	U.S.A. (HI)	Campanulaceae	E	480	17.96(a)	NA
*	*	*	*	*	*		*
Cyanea procera	Haha	U.S.A. (HI)	Campanulaceae	E	480	17.96(a)	NA
*	*	*	*	*	*		*
Eugenia koolauensis	Nioi	U.S.A. (HI)	Myrtaceae	E	536	17.96(a)	NA
*	*	*	*	*	*		*
Flueggea neowawraea	Mehamehame	U.S.A. (HI)	Euphorbiaceae	E	559	17.96(a)	NA
*	*	*	*	*	*		*
Hedyotis mannii	Pilo	U.S.A. (HI)	Rubiaceae	E	480	17.96(a)	NA

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
*	*	*	*	*	*		*
Hesperomannia arborescens.	None	U.S.A. (HI)	Asteraceae	E	536	17.96(a)	NA
*	*	*	*	*	*		*
Hibiscus arnottianus ssp. immaculatus.	Koki o ke oke o	U.S.A. (HI)	Malvaceae	E	480	17.96(a)	NA
*	*	*	*	*	*		*
Hibiscus brackenridgei	Ma o hau hele	U.S.A. (HI)	Malvaceae	E	559	17.96(a)	NA
*	*	*	*	*	*		*
Ischaemum byrone	Hilo ischaemum	U.S.A. (HI)	Poaceae	E	532	17.96(a)	NA
*	*	*	*	*	*		*
Isodendrion pyrifolium	Wahine noho kula	U.S.A. (HI)	Violaceae	E	532	17.96(a)	NA
*	*	*	*	*	*		*
Labordia triflora	Kamakahala	U.S.A. (HI)	Loganiaceae	E	666	17.96(a)	NA
*	*	*	*	*	*		*
Lysimachia maxima	None	U.S.A. (HI)	Primulaceae	E	594	17.96(a)	NA
*	*	*	*	*	*		*
Mariscus fauriei	None	U.S.A. (HI)	Cyperaceae	E	532	17.96(a)	NA
*	*	*	*	*	*		*
Melicope (=Pelea) mucronulata.	Alani	U.S.A. (HI)	Rutaceae	E	467	17.96(a)	NA
*	*	*	*	*	*		*
Melicope reflexa	Alani	U.S.A. (HI)	Rutaceae	E	480	17.96(a)	NA
*	*	*	*	*	*		*
Neraudia sericea	None	U.S.A. (HI)	Urticaceae	E	559	17.96(a)	NA
*	*	*	*	*	*		*
Peucedanum sandwicense.	Makou	U.S.A. (HI)	Apiaceae	T	530	17.96(a)	NA
*	*	*	*	*	*		*
Phyllostegia mannii	None	U.S.A. (HI)	Lamiaceae	E	480	17.96(a)	NA
*	*	*	*	*	*		*
Phyllostegia mollis	None	U.S.A. (HI)	Lamiaceae	E	448	17.96(a)	NA
*	*	*	*	*	*		*
Plantago princeps	Laukahi kuahiwi	U.S.A. (HI)	Plantaginaceae	E	559	17.96(a)	
*	*	*	*	*	*		*
Platanthera holochila	None	U.S.A. (HI)	Orchidaceae	E	592	17.96(a)	NA
*	*	*	*	*	*		*
Schiedea lydgatei	None	U.S.A. (HI)	Caryophyllaceae	E	480	17.96(a)	NA
*	*	*	*	*	*		*
Schiedea nuttallii	None	U.S.A. (HI)	Caryophyllaceae	E	592	17.96(a)	NA
*	*	*	*	*	*		*
Schiedea sarmentosa	None	U.S.A. (HI)	Caryophyllaceae	E	594	17.96(a)	NA
*	*	*	*	*	*		*
Sesbania tomentosa	Ohai	U.S.A. (HI)	Fabaceae	E	559	17.96(a)	NA
*	*	*	*	*	*		*
Silene alexandri	None	U.S.A. (HI)	Caryophyllaceae	E	480	17.96(a)	NA
*	*	*	*	*	*		*
Silene lanceolata	None	U.S.A. (HI)	Caryophyllaceae	E	480	17.96(a)	NA
*	*	*	*	*	*		*
Spermolepis hawaiiensis.	None	U.S.A. (HI)	Apiaceae	E	559	17.96(a)	NA

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
*	*	*	*	*	*		*
Stenogyne bifida	None	U.S.A. (HI)	Lamiaceae	E	480	17.96(a)	NA
*	*	*	*	*	*		*
Tetramolopium rockii	None	U.S.A. (HI)	Asteraceae	T	480	17.96(a)	NA
*	*	*	*	*	*		*
Vigna o-wahuensis	None	U.S.A. (HI)	Fabaceae	E	559	17.96(a)	NA
*	*	*	*	*	*		*
Zanthoxylum hawaiiense.	Ae	U.S.A. (HI)	Rutaceae	E	532	17.96(a)	NA
*	*	*	*	*	*		*
Ferns and Allies.							
*	*	*	*	*	*		*
Adenophorus periens	Pendant kihi fern	U.S.A. (HI)	Grammitidaceae	E	559	17.96(a)	NA
*	*	*	*	*	*		*
Ctenitis squamigera	Pauoa	U.S.A. (HI)	Aspleniaceae	E	553	17.96(a)	NA
*	*	*	*	*	*		*
Diellia erecta	Asplenium-leaved diellia.	U.S.A. (HI)	Aspleniaceae	E	559	17.96(a)	NA
*	*	*	*	*	*		*
Diplazium molokaiense	None	U.S.A. (HI)	Aspleniaceae	E	553	17.96(a)	NA
*	*	*	*	*	*		*
Marsilea villosa	Ihi ihi	U.S.A. (HI)	Marsileaceae	E	474	17.96(a)	NA
*	*	*	*	*	*		*
Pteris lidgatei	None	U.S.A. (HI)	Adiantaceae	E	553	17.96(a)	NA

3. Section 17.96, as proposed to be amended at 65 FR 66865, November 7, 2000, 65 FR 79192 (December 18, 2000), 65 FR 82086 (December 27, 2000), 65 FR 83193 (December 29, 2000), 67 FR 4072 (January 28, 2002), and 67 FR 9806 (March 4, 2002) is proposed to be further amended as follows:

a. Revise paragraph (a)(1)(i)(F); and

b. Amend paragraph (a)(1)(ii) by revising the entries set forth below.

§ 17.96. Critical habitat-plants.

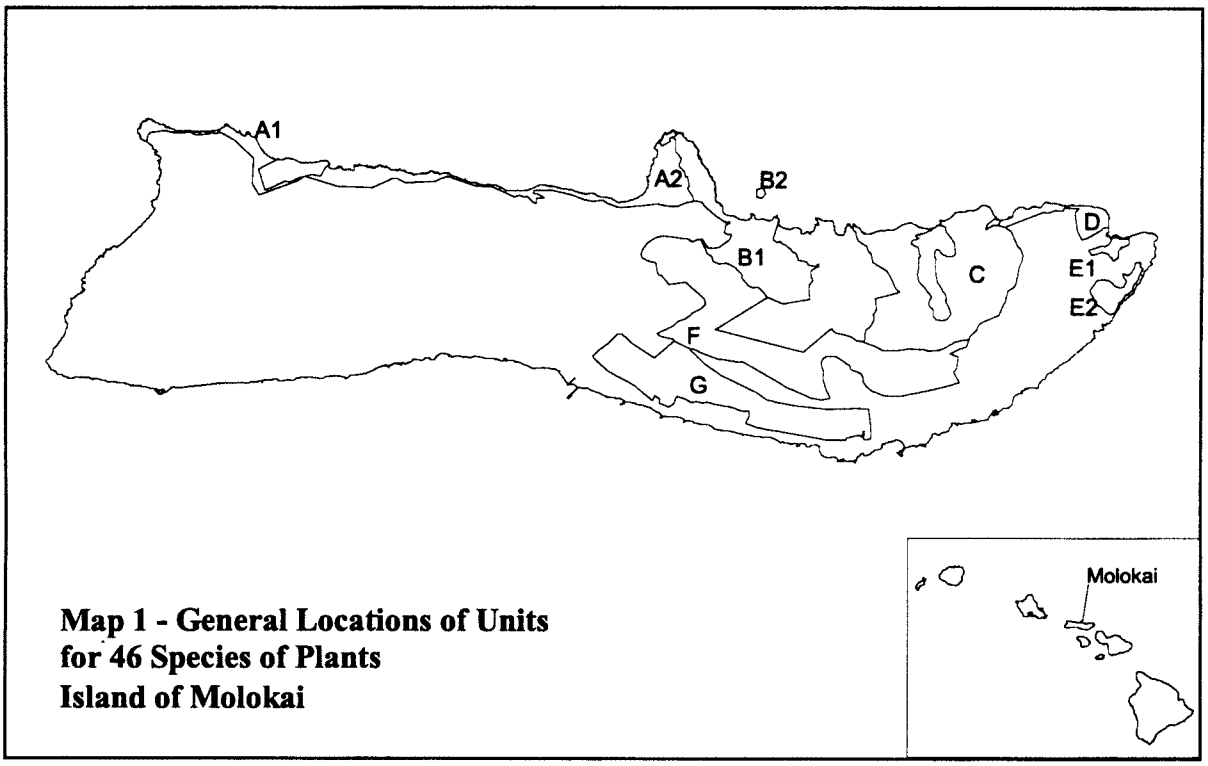
(a) * * *

(1) * * *

(i) * * *

(F) *Molokai.* Critical habitat units are described below. Coordinates are in UTM Zone 4 with units in meters using North American Datum of 1983 (NAD83). The following map shows the general locations of the 13 critical habitat units designated on the island of Molokai.

(*1*) **Note:** Map 1—Index map follows:

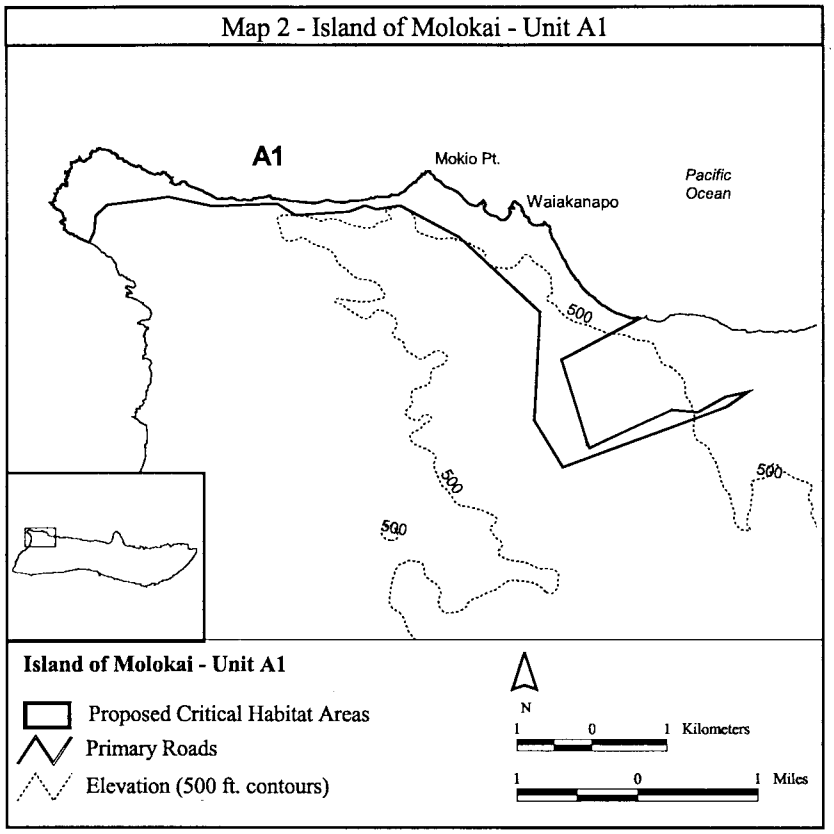


Map 1 - General Locations of Units for 46 Species of Plants Island of Molokai

(*2*) Molokai A1 (472 ha; 1,167 ac).

(*i*) Unit consists of 31 boundary points: 688438, 2345688; 688438, 2345687; 687387, 2345133; 687714, 2344094; 687727, 2344013; 687738, 2344018; 687757, 2343953; 688261, 2344188; 688417, 2344264; 688857, 2344469; 689205, 2344430; 689575, 2344638; 689625, 2344650; 689886, 2344711; 689597, 2344503; 687408, 2343701; 687025, 2344327; 687107, 2345767; 686024, 2346761; 685228, 2347181; 684916, 2347136; 684763, 2347181; 684553, 2347098; 683833, 2347057; 683585, 2347206; 682732, 2347174; 682133, 2347302; 681311, 2347200; 681158, 2347060; 681139, 2346831; 681070, 2346696. Coastline.

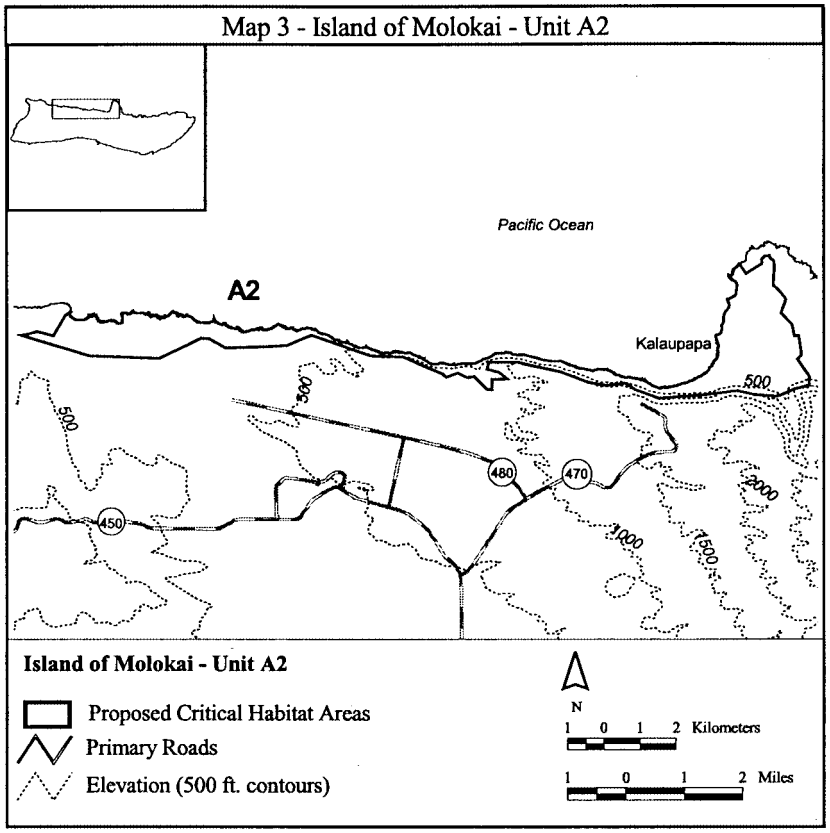
(*ii*) **Note:** Map 2 follows:



(*3*) Molokai A2 (1,532 ha; 3,786 ac).

(*i*) Unit consists of 67 boundary points: Coastline. 709818, 2346702; 709986, 2346425; 710425, 2346717; 710440, 2346732; 710410, 2346835; 710502, 2346914; 710629, 2346935; 710652, 2346855; 710743, 2346801; 710771, 2346649; 710741, 2346112; 710816, 2346035; 710901, 2345965; 711084, 2345719; 710942, 2345334; 711246, 2345024; 711320, 2344698; 711433, 2344723; 711521, 2344184; 711404, 2344064; 711579, 2343795; 711731, 2343589; 711742, 2343348; 711338, 2343250; 710861, 2343045; 710180, 2343096; 709754, 2343199; 708817, 2343079; 707590, 2342994; 706942, 2343233; 706670, 2343420; 706124, 2343352; 705647, 2343437; 704897, 2343727; 703705, 2343982; 702870, 2343982; 702801, 2343795; 703142, 2343727; 703381, 2343539; 702955, 2343522; 702955, 2343233; 702801, 2343250; 702461, 2343607; 702273, 2343573; 702005, 2343697; 701691, 2343588; 701604, 2343660; 701216, 2343818; 700521, 2344130; 699600, 2344164; 697977, 2344743; 697645, 2344608; 697645, 2344607; 697298, 2344461; 696763, 2344417; 695600, 2344389; 695149, 2344638; 694936, 2344650; 693773, 2344104; 691839, 2344164; 689970, 2344731; 690226, 2344791; 690393, 2344834; 690849, 2344723; 691180, 2345289; 691297, 2345352; 691318, 2345363. Coastline.

(*ii*) **Note:** Map 3 follows:



(*4*) Molokai B1 (2,179 ha; 5,384 ac).

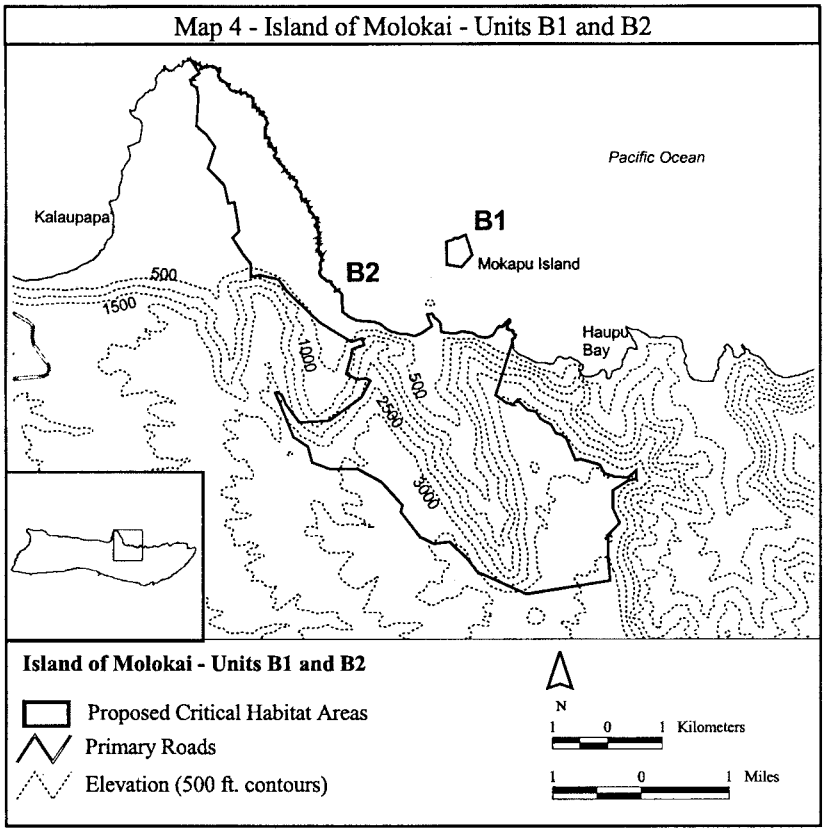
(*i*) Unit consists of 84 boundary points: Coastline.716528, 2342088; 716513, 2342093; 716226, 2341182; 716397, 2341056; 716537, 2341006; 716619, 2341102; 716803, 2340912; 716949, 2340883; 717034, 2340760; 717233, 2340650; 717327, 2340487; 717417, 2340471; 717512, 2340386; 717678, 2340008; 717794, 2340014; 718125, 2339916; 718212, 2339767; 718369, 2339712; 718630, 2339684; 718798, 2339820; 718794, 2339660; 718638, 2339632; 718369, 2339448; 718361, 2339127; 718483, 2338864; 718272, 2338643; 718273, 2338203; 718311, 2337817; 716789, 2337580; 715922, 2337961; 715899, 2337947; 715684, 2338235; 715378, 2338526; 715087, 2338495; 714833, 2338616; 714481, 2339069; 714512, 2339187; 714127, 2339612; 713679, 2339856; 713199, 2339840; 712861, 2339958; 712782, 2340249; 712515, 2340422; 712183, 2341226; 712235, 2341236; 712305, 2341201; 712382, 2341012; 712627, 2340692; 713168, 2340721; 713765, 2341147; 713925, 2341447; 713848, 2341497; 713700, 2341472; 713483, 2341578; 713558, 2341864; 713601, 2342024; 713813, 2342101; 713769, 2342222; 713587, 2342159; 712991, 2342517; 712412, 2343062; 712241, 2343301; 711901, 2343386; 711742, 2343348; 711731, 2343589; 711579, 2343795; 711404, 2344064; 711521, 2344184; 711433, 2344723; 711320, 2344698; 711246, 2345024; 710942, 2345334; 711084, 2345719; 710901, 2345965; 710816, 2346035; 710741, 2346112; 710771, 2346649; 710743, 2346801; 710652, 2346855; 710629, 2346935; 710689, 2346945; 710676, 2346982; 710797, 2347055; 710634, 2347301. Coastline.

(*ii*) **Note:** See Map 4.

(*5*) Molokai B2 (20 ha; 50 ac).

(*i*) Unit consists of eight boundary points: 715457, 2344070; 715501, 2344048; 715671, 2344107; 715793, 2343742; 715598, 2343524; 715331, 2343572; 715319, 2343985; 715442, 2344028.

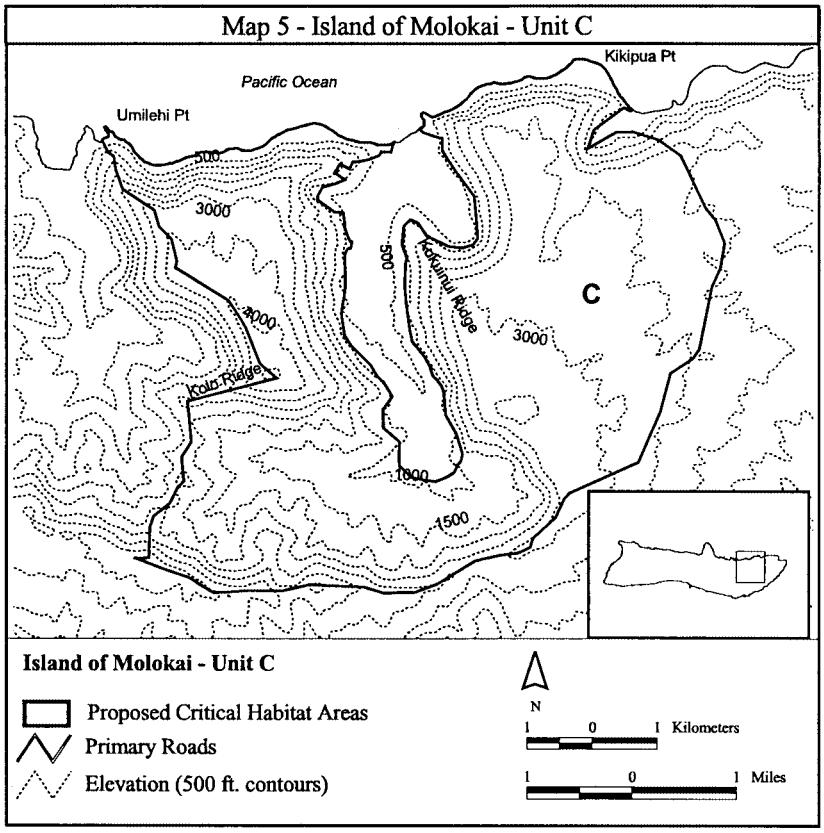
(*ii*) **Note:** Map 4 follows:



(*6*) Molokai C (4,507 ha; 11,138 ac).

(*i*) Unit consists of 157 boundary points: Coastline. 728836, 2342347; 728793, 2342324; 728701, 2342384; 728234, 2342042; 728140, 2341753; 728579, 2342005; 728821, 2342005; 728828, 2342014; 729232, 2341892; 729229, 2341891; 729581, 2341642; 729957, 2340844; 730108, 2340669; 730258, 2340309; 730192, 2339932; 730058, 2339648; 729867, 2338695; 729764, 2338541; 729427, 2338327; 729264, 2337734; 729121, 2337397; 728927, 2336948; 728099, 2336580; 727864, 2336478; 727783, 2336386; 727650, 2336110; 727313, 2335793; 727266, 2335651; 727089, 2335568; 726790, 2335537; 726421, 2335450; 725816, 2335090; 725477, 2334971; 725021, 2334963; 724706, 2335057; 723857, 2335089; 723448, 2335002; 722834, 2334995; 722386, 2334971; 721977, 2335215; 721613, 2335334; 721173, 2335498; 721206, 2335488; 721387, 2335499; 721410, 2335958; 721470, 2336127; 721713, 2336326; 721834, 2336568; 721929, 2336656; 721893, 2337028; 722037, 2337255; 721980, 2337890; 723352, 2338246; 723088, 2338481; 722865, 2339034; 722803, 2339144; 722612, 2339432; 721796, 2339934; 721815, 2340038; 721731, 2340378; 721548, 2340570; 721475, 2340813; 720996, 2341128; 720883, 2341439; 720856, 2341640; 720767, 2341699; 720682, 2341883; 720675, 2341873; 720675, 2341874; 720670, 2341873. Coastline. 725555, 2342048; 725162, 2341847; 725118, 2341694; 724963, 2341709; 724936, 2341648; 724766, 2341580; 724760, 2341583; 724671, 2341562; 724522, 2341550; 724473, 2341445; 724325, 2341519; 724244, 2341392; 724402, 2341280; 724240, 2341210; 724061, 2341168; 723989, 2341034; 723989, 2340961; 724000, 2340951; 724230, 2340796; 724234, 2340791; 724370, 2340778; 724401, 2340620; 724402, 2340548; 724436, 2340446; 724436, 2340432; 724485, 2340334; 724510, 2340333; 724495, 2340236; 724446, 2340219; 724406, 2340142; 724412, 2339620; 724349, 2339241; 724404, 2338894; 724498, 2338755; 724612, 2338641; 724801, 2338452; 724894, 2338294; 725031, 2338146; 725144, 2337958; 724994, 2337760; 725003, 2337479; 725257, 2337263; 725247, 2337009; 725252, 2336892; 725437, 2336718; 725686, 2336671; 725813, 2336660; 725935, 2336700; 726097, 2336793; 726155, 2336915; 726196, 2336961; 726225, 2337071; 726132, 2337378; 725964, 2337679; 725941, 2337986; 725950, 2337999; 725947, 2337998; 725906, 2338120; 725825, 2338218; 725767, 2338288; 725738, 2338380; 725744, 2338389; 725645, 2338566; 725448, 2338803; 725414, 2338989; 725356, 2339377; 725338, 2339603; 725338, 2339765; 725350, 2340002; 725368, 2340078; 725294, 2340274; 725320, 2340569; 725422, 2340671; 725546, 2340613; 725674, 2340421; 726007, 2340256; 726216, 2340230; 726381, 2340282; 726458, 2340381; 726442, 2340648; 726402, 2341022; 726123, 2341391; 725990, 2341595; 725911, 2341717; 725911, 2341908; 725856, 2341920; 725602, 2341999. Coastline.

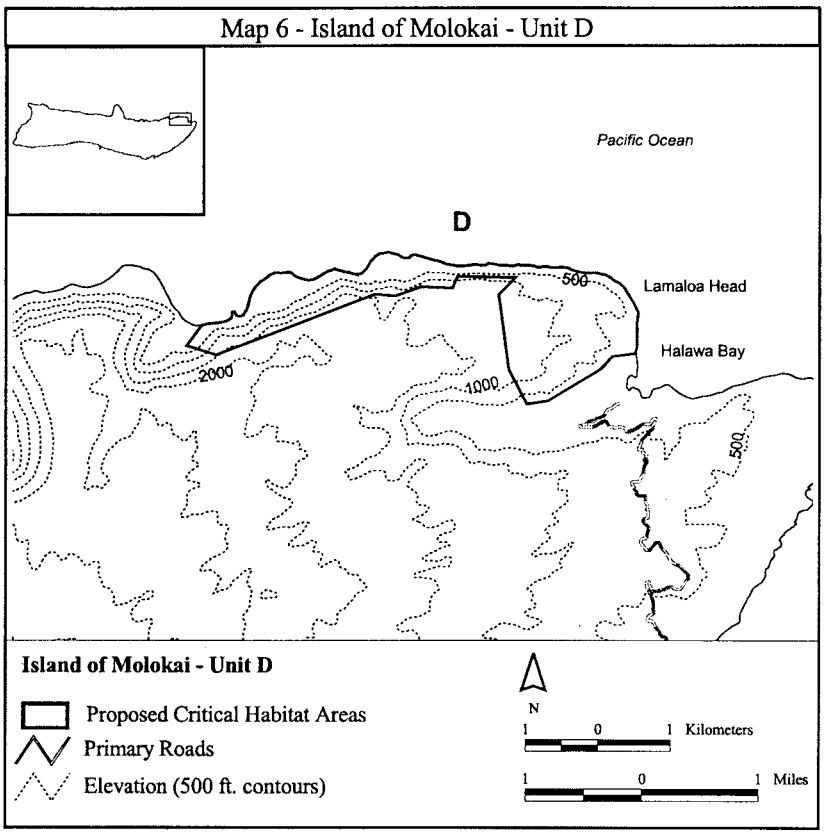
(*ii*) **Note:** Map 5 follows:



(*7*) Molokai D (466 ha; 1,153 ac).

(*i*) Unit consists of 16 boundary points: Coastline. 735073 2341908; 734741, 2341866; 734580, 2341689; 733836, 2341246; 733552, 2341204; 733301, 2341681; 733159, 2342717; 733392, 2342952; 732578, 2342966; 732511, 2342806; 732072, 2342828; 731709, 2342697; 731434, 2342730; 729232, 2341892; 728828, 2342014; 729038, 2342298. Coastline.

(*ii*) **Note:** Map 6 follows:



(*8*) Molokai E1 (127 ha; 315 ac).

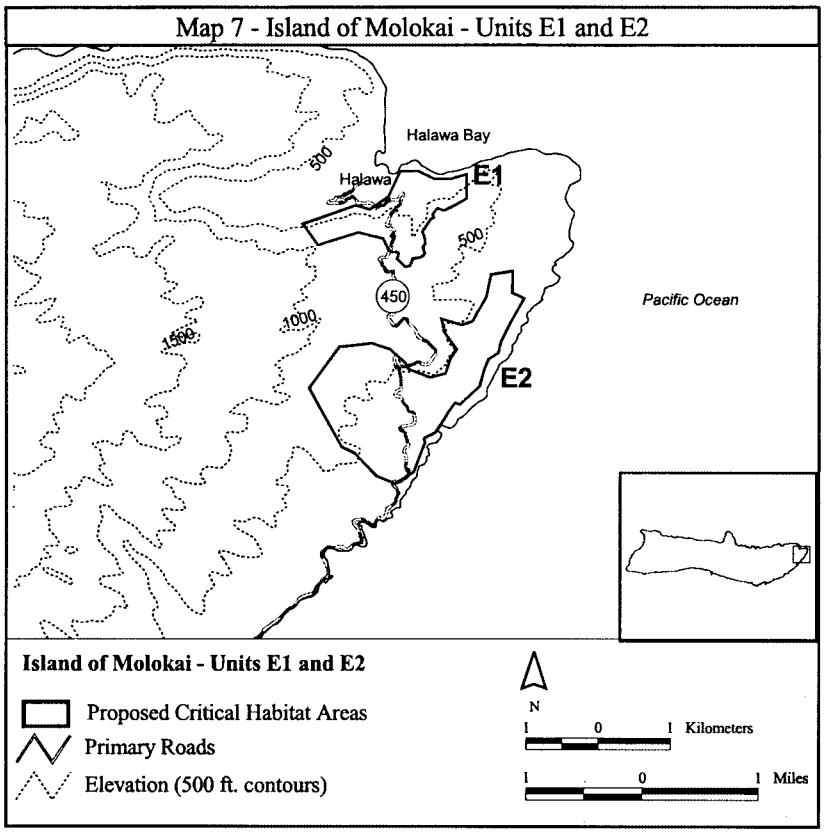
(*i*) Unit consists of 33 boundary points: 735124, 2340970; 735291, 2341321; 735533, 2341329; 735776, 2341212; 735985, 2341212; 736223, 2341276; 736217, 2340947; 736046, 2340843; 735903, 2340779; 735813, 2340810; 735746, 2340729; 735757, 2340674; 735719, 2340657; 735600, 2340485; 735633, 2340403; 735642, 2340318; 735606, 2340279; 735634, 2340180; 735595, 2340135; 735468, 2340113; 735433, 2340017; 735366, 2340000; 735249, 2340109; 735273, 2340184; 735238, 2340212; 735183, 2340197; 735123, 2340251; 735057, 2340393; 734706, 2340477; 734147, 2340302; 733937, 2340593; 734672, 2340853; 734864, 2340794.

(*ii*) **Note:** See Map 7.

(*9*) Molokai E2 (332 ha; 821 ac).

(*i*) Unit consists of 36 boundary points: 737018, 2339565; 736837, 2339239; 736704, 2338973; 736662, 2338813; 736529, 2338732; 736480, 2338614; 736406, 2338354; 736126, 2338105; 736061, 2338127; 735773, 2337713; 735626, 2337632; 735641, 2337576; 735482, 2337166; 735223, 2337008; 734973, 2337108; 734663, 2337426; 734479, 2337518; 734028, 2338329; 734446, 2338897; 734898, 2338947; 735157, 2338864; 735366, 2338680; 735416, 2338588; 735708, 2338479; 735926, 2338529; 736001, 2338747; 736086, 2338865; 735909, 2339098; 735869, 2339285; 736156, 2339195; 736303, 2339251; 736399, 2339426; 736498, 2339578; 736566, 2339891; 736863, 2339942; 736858, 2339643.

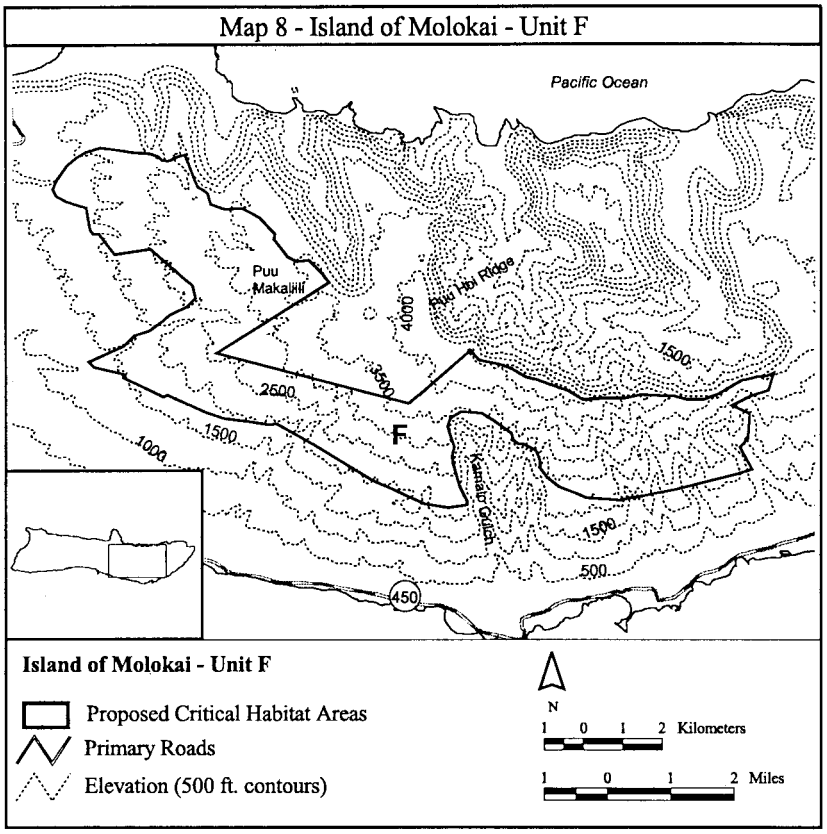
(*ii*) **Note:** Map 7 follows:



(*10*) Molokai F (4,956 ha; 12,247 ac).

(*i*) Unit consists of 119 boundary points: 719529, 2336227; 719749, 2335976; 720278, 2335860; 720611, 2335749; 720920, 2335559; 721062, 2335514; 721173, 2335498; 721613, 2335334; 721977, 2335215; 722386, 2334971; 722834, 2334995; 723448, 2335002; 723857, 2335089; 724706, 2335057; 725021, 2334963; 725477, 2334971; 725816, 2335090; 726421, 2335450; 726790, 2335537; 727089, 2335568; 727266, 2335651; 727119, 2335201; 726677, 2335067; 726193, 2334817; 726639, 2334616; 726590, 2333985; 726403, 2333749; 726710, 2333199; 726302, 2333066; 724790, 2332688; 723343, 2332405; 722490, 2332473; 721784, 2332745; 721475, 2332984; 721316, 2333218; 721301, 2333454; 721209, 2333676; 720882, 2333841; 720738, 2333846; 720618, 2333945; 720576, 2334111; 720187, 2334392; 719814, 2334623; 719289, 2334656; 719018, 2334503; 718951, 2334284; 719005, 2334080; 719118, 2333770; 719056, 2333517; 719084, 2333337; 719257, 2332763; 719461, 2332353; 719459, 2332351; 719461, 2332348; 719407, 2332277; 718953, 2332223; 718360, 2332310; 717555, 2332678; 717008, 2332914; 715529, 2333806; 714533, 2334360; 714364, 2334333; 713748, 2334435; 713234, 2334488; 712718, 2334659; 711743, 2335087; 711649, 2335040; 710674, 2335516; 710663, 2335614; 709878, 2335802; 709773, 2335899; 709777, 2335900; 709736, 2335937; 710640, 2336345; 710903, 2336608; 711297, 2336725; 711584, 2336948; 711801, 2337136; 712243, 2337338; 712475, 2337574; 712383, 2337889; 711308, 2338812; 710399, 2338678; 709997, 2339210; 709837, 2339210; 709774, 2339294; 709662, 2339882; 709442, 2339948; 709152, 2340035; 708894, 2340184; 708808, 2340350; 708897, 2340586; 709174, 2340969; 709417, 2341167; 709654, 2341312; 710027, 2341412; 710387, 2341374; 710869, 2341290; 711309, 2341265; 711520, 2341187; 711621, 2341088; 711786, 2341082; 712060, 2341201; 712183, 2341226; 712515, 2340422; 712782, 2340249; 712861, 2339958; 713199, 2339840; 713679, 2339856; 714127, 2339612; 714512, 2339187; 714481, 2339069; 714833, 2338616; 715087, 2338495; 715378, 2338526; 715684, 2338235; 715899, 2337947; 713011, 2336155; 717956, 2334877.

(*ii*) **Note:** Map 8 follows:



(*11*) Molokai G (3,023 ha; 7,471 ac).

(*i*) Unit consists of 69 boundary points: 711649, 2335040; 711611, 2335022; 712397, 2334261; 713207, 2333668; 715319, 2332627; 715872, 2332241; 716521, 2332067; 717676, 2331858; 719317, 2331700; 720853, 2331744; 721642, 2331732; 721727, 2330792; 721763, 2330136; 721733, 2330033; 721586, 2329994; 721364, 2330017; 721371, 2330503; 721317, 2330476; 721292, 2330130; 721257, 2330125; 721183, 2330223; 721149, 2330249; 720907, 2330227; 720761, 2330182; 720374, 2330071; 720374, 2329960; 719320, 2329977; 718175, 2330162; 716599, 2330458; 715341, 2330665; 715000, 2330799; 715001, 2330803; 714717, 2330899; 714919, 2331303; 714934, 2331460; 714904, 2331602; 714664, 2331565; 714343, 2331640; 714208, 2331730; 713826, 2331834; 712861, 2331999; 712585, 2332089; 712308, 2332021; 712001, 2332133; 711649, 2332066; 711328, 2332268; 710849, 2332433; 710670, 2332017; 710424, 2331821; 709872, 2332028; 709929, 2332261; 709630, 2332470; 709495, 2332193; 708686, 2332827; 708590, 2332949; 708133, 2333235; 707072, 2333778; 706205, 2334559; 706166, 2334682; 706446, 2334939; 707043, 2335392; 707518, 2335889; 707764, 2335906; 708287, 2335419; 709485, 2334639; 709485, 2334643; 709599, 2334575; 710676, 2335499; 710674, 2335516.

(*ii*) **Note:** Map 9 follows.

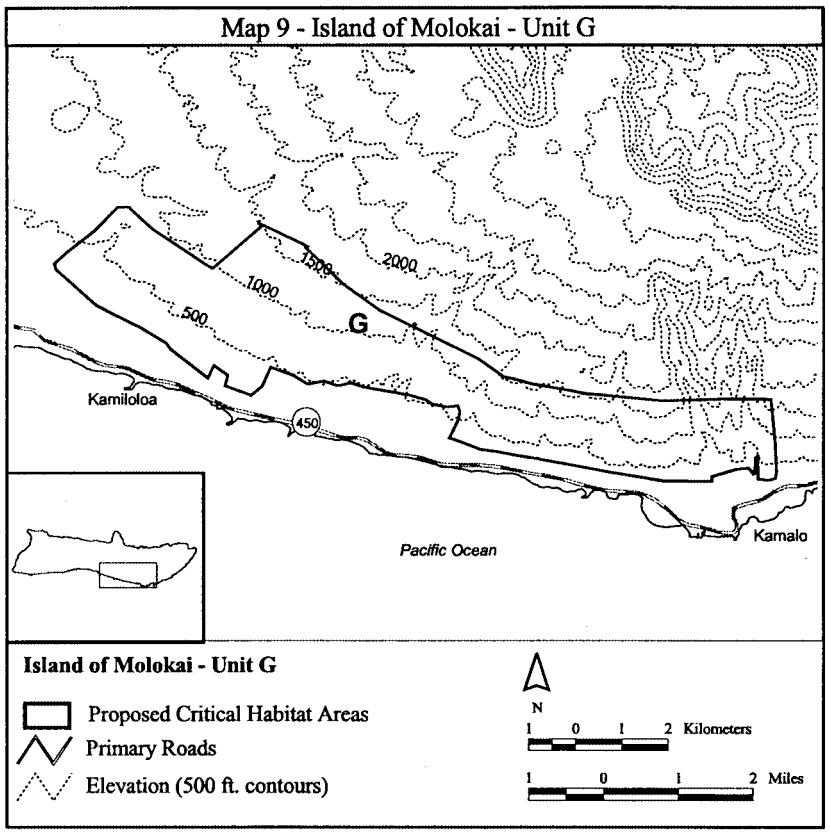


TABLE (A)(1)(I)(F).—PROTECTED SPECIES WITHIN EACH CRITICAL HABITAT UNIT FOR MOLOKAI

Unit name	Species occupied	Species unoccupied
Molokai A1	*Centaurium sebaeoides, Marsilea villosa, Tetramolopium rockii* .	
Molokai A2	*Centaurium sebaeoides, Sesbania tomentosa, Tetramolopium rockii* .	
Molokai B1	*Adenophorus periens, Brighamia rockii, Centaurium sebaeoides, Clermontia oblongifolia* ssp. *brevipes, Cyanea dunbarii, Cyanea grimesiana* ssp. *grimesiana, Cyanea procera, Hedyotis mannii, Hibiscus arnottianus* ssp. *immaculatus, Ischaemum byrone, Lysimachia maxima, Peucedanum sandwicense, Phyllostegia mannii, Plantago princeps, Platanthera holochila, Schiedea nuttallii, Stenogyne bifida, Tetramolopium rockii* .	
Molokai B2	*Peucedanum sandwicense*	*Brighamia rockii, Ischaemum byrone, Tetramolopium rockii.*
Molokai C	*Adenophorus periens, Brighamia rockii, Centaurium sebaeoides, Clermontia oblongifolia* ssp. *brevipes, Cyanea grimesiana* ssp. *grimesiana, Hesperomannia arborescens, Hibiscus arnottianus* ssp. *immaculatus, Ischaemum byrone, Lysimachia maxima, Melicope reflexa, Peucedanum sandwicense, Phyllostegia mannii, Pteris lidgatei* .	*Diplazium molokaiense.*
Molokai D	*Bidens wiebkei, Centaurium sebaeoides, Ischaemum byrone, Peucedanum sandwicense* .	
Molokai E1	*Bidens wiebkei* .	
Molokai E2	*Bidens wiebkei* .	
Molokai F	*Adenophorus periens, Alectryon macrococcus, Bidens wiebkei, Canavalia molokaiensis, Clermontia oblongifolia* ssp. *brevipes, Ctenitis squamigera, Cyanea dunbarii, Cyanea grimesiana* ssp. *grimesiana, Cyanea mannii, Cyanea procera, Diellia erecta, Hedyotis mannii, Labordia triflora, Lysimachia maxima, Mariscus faurei, Melicope mucronulata, Melicope reflexa, Neraudia sericea, Phyllostegia mannii, Plantago princeps, Platanthera holochila, Schiedea lydgatei, Schiedea nuttallii, Schiedea sarmentosa, Sesbania tomentosa, Silene lanceolata, Spermolepis hawaiiensis, Stenogyne bifida, Vigna o-wahuensis, Zanthoxylum hawaiiense* .	*Eugenia koolauensis, Flueggea noewawraea, Phyllostegia mollis, Silene alexandri*
Molokai G	Mariscus faurei, Sesbania tomentosa	*Hibiscus brackenridgei, Isodendrion pyrifolium.*

(ii) *Hawaiian plants—constituent elements.*

(A) *Flowering plants.*

Family Apiaceae: *Peucedanum sandwicense* (makou)

Molokai B1, B2, C, and D, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Peucedanum sandwicense* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Cliff habitats in brown soil and talus in *Chamaesyce celastroides* var. *amplectans-Chenopodium oahuense* coastal dry shrubland or *Diospyros sandwicensis* forest and containing one or more of the following associated native species: *Eragrostis* sp., *Santalum ellipticum, Pritchardia hillebrandii, Reynoldsia sandwicensis, Osteomeles anthyllidifolia, Scaevola sericea, Senna gaudichaudii, Pittosporum halophilum, Sida fallax, Plumbago zeylanica, Artemisia australis, Portulaca lutea, Lepidium bidentatum* var. *o-waihiense, Schiedea globosa, Lipochaeta integrifolia, Peperomia remyi, Plectranthus parviflorus, Dianella sandwicensis* or *Metrosideros polymorpha;* and

(*2*) Elevations between sea level and above 840 m (0 and 2,755 ft).

Family Apiaceae: *Spermolepis hawaiiensis* (NCN)

Molokai F, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Spermolepis hawaiiensis* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Ridge crests and gulch slopes in dry to mesic shrubland and containing one or more of the following associated native species: *Dodonea viscosa, Metrosideros polymopha,* or *Styphelia tameiameiae;* and

(*2*) Elevations between 432 and 972 m (1,416 and 3,188 ft).

Family Asteraceae: *Bidens wiebkii* (ko oko olau)

Molokai D, E1, E2, and F, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Bidens wiebkii* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Slopes in *Metrosideros polymorpha* dominated mesic shrublands or dry or mesic *Metrosideros polymorpha-Styphelia tameiameiae* lowland shrubland and containing one or more of the following associated native plant species: *Antidesma platyphyllum, Dodonea viscosa, Psydrax odoratum, Lysimachia* sp., *Nestegis sandwicensis, Phyllanthus distichus, Pisonia* sp., or *Scaevola gaudichaudii;* and

(*2*) elevations between 8 and 1,205 m (26 and 3,952 ft).

Family Asteraceae: *Hesperomannia arborescens* (NCN)

Molokai C, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Hesperomannia arborescens* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Slopes or ridges in wet *Metrosideros polymorpha-Dicranopteris linearis* lowland forest or mesic *Diospyros sandwicensis-Metrosideros polymorpha* lowland forest transition zones and containing one or more of the following associated native species: *Broussaisia arguta, Freycinetia arborea, Antidesma* sp., *Cibotium glaucum, Psychotria mauiensis, Elaphoglossum* sp., *Coprosma* sp., *Hedyotis* sp., *Cheirodendron* sp., *Smilax melastomifolia, Clermontia pallida, Thelypteris* sp., *Diplopterygium pinnatum, Ilex anomala, Myrsine* sp., *Urera glabra, Cyrtandra* sp., *Pipturus* sp., *Boehmeria grandis, Nestegis sandwicensis, Nephrolepis exaltata,* or *Wikstroemia* sp.; and

(*2*) Elevations between 175 and 959 m (574 and 3,145 ft).

Family Asteraceae: *Tetramolopium rockii* (NCN)

Molokai A1, A2 and B2, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Tetramolopium rockii* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Hardened calcareous sand dunes or ash-covered basalt in the coastal spray zone or coastal dry shrubland and grassland and containing one or more of the following associated native species: *Psydrax odoratum, Diospyros sandwicensis, Metrosideros polymorpha, Osteomeles anthyllidifolia, Scaevola* sp., *Fimbristylis cymosa, Heliotropium anomalum, Lipochaeta integrifolia, Sida fallax,* or *Sporobolus virginicus;* and

(*2*) Elevations between sea level and 199 m (0 and 653 ft).

Family Campanulaceae: *Brighamia rockii* (pua ala)

Molokai B1, B2, and C, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Brighamia rockii* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Rock crevices on steep basalt sea cliffs, often within the spray zone, in coastal dry or mesic forest, *Eragrostis variabilis* mixed coastal cliff communities, or shrubland, or *Pritchardia* sp. coastal mesic forest and containing one or more of the following associated native species: *Pritchardia hillebrandii, Chamaesyce celastroides* var. *amplectans, Wikstroemia uva-ursi, Carex wahuensis* ssp. *wahuensis, Mariscus phleoides* ssp. *phleoides, Eragrostis variabilis, Dianella sandwicensis, Cocculus trilobus, Phymatosorus scolopendria, Crytomium falcatum, Lepidium bidentatum* var. *o-waihiense, Pittosporum halophilum, Artemisia* sp., *Bidens* sp., *Schiedea globosa, Reynoldsia sandwicensis, Pandanus tectorius, Peucedanum sandwicensis, Hedyotis littoralis, Metrosideros polymorpha, Psydrax odoratum, Diospyros sandwicensis, Osteomeles anthyllidifolia, Tetramolopium cassia, Senna gaudichaudii, or Scaevola sericea;* and

(*2*) Elevations between sea level and 671 m (0 and 2,201 ft).

Family Campanulaceae: *Clermontia oblongifolia* ssp. *brevipes* (oha wai)

Molokai B1, C, and F, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Clermontia oblongifolia* ssp. *brevipes* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Shallow soil on gulch slopes in the wet *Metrosideros polymorpha*—dominated forests and containing one or more of the following associated native species include *Cheirodendron trigynum, Cibotium* spp., *Broussaisia argutus, Hedyotis terminalis,* or *Melicope* sp.; and

(*2*) Elevations between 776 and 1,508 m (2,545 and 4,946 ft).

Family Campanulaceae: *Cyanea dunbarii* (haha)

Molokai B1 and F, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Cyanea dunbarii* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Streambanks in mesic to wet *Dicranopteris linearis-Metrosideros polymorpha* lowland forest on moderate to steep slopes and containing one or more of the following associated native

species: *Diplazium sandwicianum, Charpentiera obovata, Perrottetia sandwicensis, Pipturus albidus, Clermontia kakeana, Cheirodendron trigynum,* or *Freycinetia arborea;* and

(*2*) Elevations between 191 and 1,248 m (626 and 4,093 ft).

Family Campanulaceae: *Cyanea grimesiana* ssp. *grimesiana* (haha)

Molokai B1, F and C, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Cyanea grimesiana* ssp. *grimesiana* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Mesic forest often dominated by *Metrosideros polymorpha* or *Metrosideros* polymorpha and *Acacia koa,* or cliffs, and containing one or more of the following associated native species: *Psychotria* sp., *Bobea* sp., *Antidesma* sp., *Syzygium sandwicensis, Xylosma* sp., *Cibotium* sp., *Doodia* sp., *Nephrolepis* sp., *Cyrtandra* sp., *Dicranopteris linearis,* or *Freycinetia arborea;* and

(*2*) Elevations between 93 and 1,354 m (305 and 4,441 ft).

Family Campanulaceae: *Cyanea mannii* (haha)

Molokai F, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Cyanea mannii* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Sides of deep gulches in *Metrosideros polymorpha*-dominated montane mesic forests and containing one or more of the following associated native species: *Wiskstroemia* sp., *Dicranopteris linearis,* or *Vaccinium* sp.; and

(*2*) Elevations between 191 and 1,248 m (626 and 4,093 ft).

Family Campanulaceae: *Cyanea procera* (haha)

Molokai B1 and F, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Cyanea procera* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Walls of steep gulches in wet *Metrosideros polymorpha*-dominated lowland mixed forests and containing one or more of the following associated native species: *Asplenium* spp., *Brousaissia arguta, Coprosma ochracea, Cyanea* spp., *Cyrtandra macrocalyx, Dicranopteris linearis, Pipturus albidus, Pisonia* spp., *Scaevola procera,* or *Touchardia latifolia;* and

(*2*) Elevations between 277 and 1,248 m (909 to 4,093 ft).

Family Caryophyllaceae: *Schiedea lydgatei* (NCN)

Molokai F, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Schiedea lydgatei* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Ridges in dry to mesic grassland, shrubland, or forest with scattered native trees and containing one or more of the following associated native species: *Dodonaea viscosa, Metrosideros polymorpha, Styphelia tameiameiae,* or *Dicranopteris linearis;* and

(*2*) Elevations between 458 and 1,047 m (1,502 and 3,434 ft).

Family Caryophyllaceae: *Schiedea nuttallii* (NCN)

Molokai B1 and F, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Schiedea nuttallii* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Streamside grottos in wet *Metrosideros polymorpha/ Cheirodendron trigynum* forest and containing one or more of the following associated native species: *Asplenium lobulatum, Asplenium macraei, Thelypteris sandwicensis, Vandenboschia davallioides, Cyrtandra hawaiiensis,* or *Asplenium unilaterale;* and

(*2*) Elevations between 677 and 1,423 m (2,220 and 4,667 ft).

Family Caryophyllaceae: *Schiedea sarmentosa* (NCN)

Molokai F, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Schiedea sarmentosa* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Slopes in *Metrosideros polymorpha/Dodonaea viscosa* lowland dry or mesic shrubland or dry to mesic forest dominated by *Metrosideros polymorpha* and/or *Diospyros sandwicensis* and containing one or more of the following associated native species: *Styphelia tameiameiae, Chenopodium oahuensis, Alyxia oliviformis, Pleomele auwahiensis, Bidens menziesii, Carex meyenii, Lipochaeta rockii, Nestegis sandwicensis, Nothocestrum latifolium, Sida fallax, Sophora chrysophylla,* or *Chamaesyce* sp.; and

(*2*) Elevations between 316 and 1,072 m (1,036 and 3,516 ft).

Family Caryophyllaceae: *Silene alexandri* (NCN)

Molokai F, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Silene alexandri* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Moderate to steep slopes or cliffs in dry forest and containing one or more of the following associated native species: *Dodonaea viscosa*, *Styphelia tameiameiae*, *Bidens menziesii*, *Schiedea* spp., *Carex wahuensis*, or *Diospyros sandwicensis*; and

(*2*) Elevations between 316 and 1,073 m (1,036 and 3,519 ft).

Family Caryophyllaceae: *Silene lanceolata* (NCN)

Molokai F, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Silene lanceolata* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Gulch slopes, ridge tops, and cliffs in dry to mesic shrubland and containing one or more of the following associated native species: *Metrosideros polymorpha*, *Bidens menziesii*, *Schiedea* spp., *Carex wahuensis*, *Diospyros sandwicensis*, *Dodonea viscosa*, *Styphelia tameiameiae*, or *Dubautia linearis*; and

(*2*) Elevations between 581 and 1,043 m (1,905 and 3,421 ft).

Family Cyperaceae: *Mariscus faurei* (NCN)

Molokai F and G, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Mariscus faurei* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) *Diospyros sandwicensis*-dominated lowland dry forests, and containing one or more of the following associated native species: *Psydrax odoratum*, *Peperomia* sp., or *Rauvolfia sandwicensis*; and

(*2*) Elevations between 436 and 1,120 m (1,430 and 3,673 ft).

Family Euphorbiaceae: *Flueggea neowawraea* (mehamehame)

Molokai F, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Flueggea neowawraea* on Molokai. Within this unit the

currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Gulches in mesic forest; and

(*2*) Elevations between 450 and 840 m (1,476 and 2,755 ft).

Family Fabaceae: *Canavalia molokaiensis* (awikiwiki)

Molokai F, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Canavalia molokaiensis* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Exposed sites, both dry and mesic, on steep slopes in *Metrosideros polymorpha-Dodonea viscosa* lowland shrubland or mesic shrublands and containing one or more of the following associated native species: *Artemesia* sp., *Chamaesyce* sp., *Coprosma* sp., *Styphelia tameiameiae*, or *Wikstroemia* sp.; and

(*2*) Elevations between 271 and 1,140 m (889 and 3,739 ft).

Family Fabaceae: *Sesbania tomentosa* (ohai)

Molokai A2, F, and G, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Sesbania tomentosa* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) *Scaevola sericea* coastal dry shrubland on windswept slopes, sea cliffs and weathered basaltic slopes and containing one or more of the following associated native species: *Lipochaeta integrifolia*, *Jacquemontia sandwicensis*, *Sida fallax*, or *Dodonea viscosa*; and

(*2*) Elevations between sea level and 516 m (0 and 1,692 ft).

Family Fabaceae: *Vigna o-wahuensis* (NCN)

Molokai F, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Vigna o-wahuensis* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Dry to mesic grassland and shrubland and containing one or more of the following associated native species: *Chenopodium oahuense*, *Cyperus laevigatus*, *Eragrostis variabilis*, *Heteropogon contortus*, *Ipomoea* sp., *Scaevola sericea*, *Sida fallax*, *Vitex rotundifolia*, *Dodonea viscosa*, or *Styphelia tameiameiae*; and

(*2*) Elevations between 516 and 1,041 m (1,692 and 3,414 ft).

Family Gentianaceae: *Centaurium sebaeoides* (awiwi)

Molokai A1, A2, B1, C, and D, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Centaurium sebaeoides* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Volcanic or clay soils or cliffs in arid coastal areas and containing one or more of the following associated native species: *Chamaesyce celastroides*, *Dodonea viscosa*, *Fimbristylis cymosa*, *Heteropogon contortus*, *Lipochaeta heterophylla*, *Lipochaeta integrifolia*, *Lycium sandwicense*, *Lysimachia mauritiana*, *Mariscus phleoides*, *Panicum fauriei*, *Panicum torridum*, *Scaevola sericea*, *Schiedea globosa*, *Sida fallax*, *Wikstroemia uva-ursi*, *Artemisia* sp., *Bidens* sp., *Jaquemontia ovalifolia*, or *Lipochaeta succulenta*; and

(*2*) Elevations between sea level and 409 m (0 and 1,341 ft).

Family Lamiaceae: *Phyllostegia mannii* (NCN)

Molokai B1, C, and F, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Phyllostegia mannii* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Shaded sites in foggy and windswept, wet, open, *Metrosideros polymorpha*-dominated montane forest with a native shrub and *Cibotium* sp. understory and containing one or more of the following associated native species: *Asplenium* sp., *Broussaisia arguta*, *Cheirodendron trigynum*, *Coprosma ochracea*, *Cyanea* sp., *Dicranopteris linearis*, *Hedyotis hillebrandii*, *Pipturus albidus*, *Pouteria sandwicensis*, *Psychotria* sp., *Touchardia latifolia*, *Vaccinium* sp., or *Wikstromia* sp.; and

(*2*) Elevations between 590 and 1508 m (1,935 and 4,946 ft).

Family Lamiaceae: *Phyllostegia mollis* (NCN)

Molokai F, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Phyllostegia mollis* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Mesic *Metrosideros polymorpha* forests; and

(*2*) Elevations between 551 and 1,216 m (1,807 and 3,988 ft).

Family Lamiaceae: *Stenogyne bifida* (NCN)

Molokai B1 and F, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Stenogyne bifida* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Gulch slopes in *Metrosideros polymorpha*-dominated montane mesic to wet forest and containing one or more of the following associated native species: *Cibotium* sp., *Hedyotis* sp., *Cyanea* sp., *Dicranopteris linearis*, *Dodonaea viscosa*, *Hedyotis hillebrandii*, *Pipturus albidus*, *Psychotria* sp., *Styphelia tameiameiae*, *Vaccinium* sp., *Wikstroemia* sp., *Cheirodendron trigynum*, *Broussaisia arguta*, or *Pouteria sandwicensis*; and

(*2*) Elevations between 336 and 1,300 m (1,102 and 4,264 ft).

Family Loganiaceae: *Labordia triflora* (kamakahala)

Molokai F, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Labordia triflora* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Gulch slopes in mixed mesic *Metrosideros polymorpha* forest and containing one or more of the following associated native species: *Pouteria sandwicensis*, *Sadleria cyatheoides*, *Nephrolepis exalta*, *Coprosma* sp., *Myrsine lessertiana*, or *Tetraplasandra hawaiensis*; and

(*2*) Elevations between 191 and 1,143 m (626 and 3,749 ft).

Family Malvaceae: *Hibiscus arnottianus* ssp. *immaculatus* (kokio ke okeo)

Molokai B1 and C, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Hibiscus arnottianus* ssp. *immaculatus* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Steep sea cliffs in mesic forests and containing one or more of the following associated native species: *Athyrium* spp., *Canthium odoratum*, *Cyanea grimesiana*, *Antidesma platyphyllum*, *Boehmeria grandis*, *Diospyros sandwicensis*, *Pipturis* spp., *Urera glabra*, or *Metrosideros polymorpha*; and

(*2*) Elevations between 8 and 1,014 m (26 and 3,326 ft).

Family Malvaceae: *Hibiscus brackenridgei* (Mau hao hele)

Molokai G, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Hibiscus brackenridgei* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Slopes in lowland dry forest and shrubland; and

(*2*) Elevations between 11 and 467 m (36 and 1,531 ft).

Family Myrtaceae: *Eugenia koolauensis* (Nioi)

Molokai F, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Eugenia koolauensis* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Rocky gulches or gentle slopes with deep soil and containing one or more of the following associated native species: *Nestegis sandwicensis*, *Nototrichium sandwicensis*, *Xylosma hawaiiense*, *Diospyros sandwicensis*, *Nesoluma polynesicum*, *Reynoldsia sandwicensis*, or *Erythrina sandwicensis*; and

(*2*) Elevations between 475 and 989 m (1,558 and 3,244 ft).

Family Orchidaceae: *Platanthera holochila* (NCN)

Molokai B1 and F, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Platanthera holochila* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Slightly sloping ridgetops in *Metrosideros polymorpha/ Cheirodendron trigynum* wet forest or *Metrosideros polymorpha* mixed montane bog and containing one or more of the following associated native species: *Cibotium* sp., *Oreobolus furcatus*, or *Styphelia tameiameiae*; and

(*2*) Elevations between 551 and 1,382 m (1,807 and 4,532 ft).

Family Plantaginaceae: *Plantago princeps* (Laukahi kuahiwi)

Molokai B1 and F, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Plantago princeps* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Streambanks in *Metrosideros polymorpha* lowland mesic forest and containing one or more of the following associated native species: *Coprosma* sp., *Wikstroemia oahuensis*, *Pipturus albidus*, *Dodonaea viscosa*, *Dryopteris unidentata*, or *Cyanea* sp.; and

(*2*) Elevations between 592 and 1,213 m (1,942 and 3,979 ft).

Family Poaceae: *Ischaemum byrone* (Hilo ischaemum)

Molokai B1, B2, C, and D, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Ischaemum byrone* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Coastal dry shrubland or *Artemisia* cliff communities, near the ocean, among rocks or on basalt cliffs or talus slopes and containing one or more of the following associated native species: *Bidens molokaiensis*, *Hedyotis littoralis*, *Lysimachia mauritiana*, *Fimbrystylis cymosa*, or *Pandanus tectorius*; and

(*2*) Elevations between sea level and 238 m (0 and 781 ft).

Family Primulaceae: *Lysimachia maxima* (NCN)

Molokai B1, C, and F, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Lysimachia maxima* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) *Metrosideros polymorpha*—*Dicranopteris linearis* montane wet forest and containing one or more of the following associated native species: *Psychotria* sp., *Vaccinium* sp., *Hedyotis* sp., *Dubautia* sp., or *Ilex anomala*; and

(*2*) Elevations between 446 and 1,324 m (1,463 and 4,343 ft).

Family Rubiaceae: *Hedyotis mannii* (pilo)

Molokai B1 and F, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Hedyotis mannii* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Dark, narrow, rocky gulch walls in mesic and wet forests and containing one or more of the following associated native species: *Pipturus* sp., *Cibotium* sp., *Cyanea* sp., *Scaevola* sp., or *Psychotria* sp.; and

(*2*) Elevations between 593 and 1,212 m (1,945 and 3,975 ft).

Family Rutaceae: *Melicope mucronulata* (alani)

Molokai F, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Melicope mucronulata* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Steep, west-or north-facing slopes in mesic *Diospyros sandwicensis/ Metrosideros polymorpha* forest, *Metrosideros polymorpha/Dodonea viscosa* shrubland, or *Metrosideros polymorpha/Styphelia tameiameiae* shrubland and containing one or more of the following associated native species: *Alyxia oliviformis, Nestegis sandwicensis*, *Coprosma foliosa*, *Psychotria mariniana*, *Pleomele auwahiensis*, *Osteomeles anthyllidifolia*, *Ochrosia compta*, *Myrsine lanaiensis*, *Alphitonia ponderosa*, *Pittosporum* sp., *Hedyotis terminalis*, *Melicope hawaiensis*, or *Phyllanthus* sp.; and

(*2*) Elevations between 199 and 1,143 m (653 and 3,749 ft).

Family Rutaceae: *Melicope reflexa* (alani)

Molokai C and F, identified in the legal descriptions in (a)(1)(iv)(F), constitute critical habitat for *Melicope reflexa* on Molokai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Wet *Metrosideros polymorpha*-dominated forest with native trees, such as *Cheirodendron* sp., and containing one or more of the following associated native species: *Cibotium* spp., *Dicranopteris linearis*, *Syzygium sandwicensis*, *Antidesma platyphyllum*, *Alyxia oliviformis*, *Cheirodendron trigynum*, or *Freycinetia arborea*; and

(*2*) Elevations between 319 and 1,508 m (1,046 and 4,946 ft).

Family Rutaceae: *Zanthoxylum hawaiiense* (ae)

Molokai F, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Zanthoxylum hawaiiense* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Gulch slopes in mesic *Metrosideros polymorpha* or *Diospyros sandwicensis* forest and containing one or more of the following associated native species: *Dodonaea viscosa*, *Styphelia tameiameiae*, *Pleomele auwahiensis*, *Nestegis sandwicensis*, *Alyxia oliviformis*, *Osteomeles anthyllidifolia*, *Psychotria* spp., or *Myrsine lanaiensis*; and

(*2*) Elevations between 754 and 1,084 m (2,473 and 3,555 ft).

Family Sapindaceae: *Alectryon macrococcus* var. *macrococcus* (mahoe)

Molokai F, identified in the legal description in (a)(1)(iv)(F), constitutes

critical habitat for *Alectryon macrococcus* var. *macrococcus* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Dry or talus slopes or gulches within dry or mesic lowland forest and containing one or more of the following associated native species: *Dodonaea viscosa*, *Nestegis sandwicensis*, *Nothocestrum* sp., *Pleomele* sp., *Psychotria* sp., *Streblus pendulina*, *Myrsine* sp., and *Lipochaeta* sp.; and

(*2*) Elevations between 534 and 1,120 m (1,751 and 3,674 ft).

Family Urticaceae: *Neraudia sericea* (NCN)

Molokai F, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Neraudia sericea* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Gulch slopes and gulch bottoms in lowland dry to mesic *Metrosideros polymorpha—Dodonaea viscosa—Styphelia tameiameiae* shrubland or forest and containing one or more of the following associated native species: *Pleomele auwahiensis*, *Alyxia olivifomis*, *Coprosma* sp., or *Hedyotis* sp.; and

(*2*) Elevations between 691 and 1,043 m (2,266 and 3,421 ft).

Family Violaceae: *Isodendrion pyrifolium* (wahine noho kula)

Molokai G, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Isodendrion pyrifolium* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Dry shrublands and containing one or more of the following associated native species: *Dodonaea viscosa*, *Heteropogon contortus*, *Styphelia tameiameiae*, or *Bidens menziesii*; and

(*2*) Elevations between 69 and 422 m (226 and 1,384 ft).

(B) Ferns and Fern Allies.

Family Adiantaceae: *Pteris lidgatei* (NCN)

Molokai C, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Pteris lidgatei* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Steep stream banks in wet forest; and

(*2*) Elevations between 78 to 1,266 m (256 to 4,152 ft).

Family Aspleniaceae: *Ctenitis squamigera* (pauoa)

Molokai F, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Ctenitis squamigera* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Mesic forest or gulch slopes and containing one or more of the following associated native species: *Metrosideros polymorpha, Diospyros sandwicensis, Nestegis sandwicensis, Xylosma hawaiiense, Pouteria sandwicensis, Nephrolepis exaltata, Carex meyenii, Dryopteris unidentata,* or *Pleomele auwahiensis;* and

(*2*) Elevations between 757 and 1,133 m (2,483 and 3,716 ft).

Family Aspleniaceae: *Diellia erecta* (Asplenium-leaved Diellia)

Molokai F, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Diellia erecta* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Mixed mesic forest or mesic *Diospyros sandwicensis* forest and containing one or more of the following associated native species: *Alyxia oliviformis, Metrosideros polymorpha, Bobea* sp., *Coprosma foliosa, Dodonea viscosa, Dryopteris unidentata, Myrsine* sp., *Ochrosia comta, Dubautia linearis* ssp. *opposita, Psychotria* sp., *Pleomele auwahiensis, Sophora chrysophylla, Styphelia tameiameiae, Syzygium sandwicensis,* or *Wikstroemia* sp.; and

(*2*) Elevations between 750 and 1,133 m (2,460 and 3,716 ft).

Family Aspleniaceae: *Diplazium molokaiense* (NCN)

Molokai C, identified in the legal description in (a)(1)(iv)(F), constitute critical habitat for *Diplazium molokaiense* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Steep, rocky, wooded gulch walls in wet forests; and

(*2*) Elevations between 97 and 1,349 m (318 and 4,424 ft).

Family Grammitidaceae: *Adenophorous periens* (pendant kihi fern)

Molokai B1, C, and F, identified in the legal description in (a)(1)(iv)(F), constitute critical habitat for *Adenophorous periens* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Epiphytic surfaces on *Metrosideros polymorpha* trunks found in well-developed, closed canopy *Metrosideros polymorpha-Myrsine lessertiana* forest providing deep shade and high humidity and containing one or more of the following associated native species: *Broussasia arguta, Cheirodendron trigynum, Coprosma ochracea, Cyanea* sp., *Cyrtandra* sp., *Dicranopteris linearis, Freycinetia arborea, Hedyotis terminalis, Labordia hirtella, Machaerina angustifolia, Psychotria hexandra, Styphelia tameiameiae, Ilex anomala, Vaccinium calycinum, Cibotium glaucum, Melicope* sp., *Viola robusta, Stenogyne kamehamehae, Anoectochilus sandvicensis,* or *Syzygium sandwicensis;* and

(*2*) Elevations between 811 and 1,508 m (2,660 and 4,946 ft).

Family Marsileaceae: *Marsilea villosa* (ihi ihi)

Molokai A1, identified in the legal description in (a)(1)(iv)(F), constitutes critical habitat for *Marsilea villosa* on Molokai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Shallow depressions in clay soil, or lithified sand dunes overlaid with alluvial clay, in open areas or areas with minimal shading and containing one or more of the following associated native species: *Heteropogon contortus, Sida fallax, Waltheria indica, Centaurium sebaeoides, Tetramolopium sylvae,* or *Schiedea globosa;* and

(*2*) Elevations between 125 and 172 m (410 and 564 ft).

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Craig Manson,

Assistant Secretary for Fish and Wildlife and Parks.

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