Federal Register

Monday,
March 4, 2002

Part II

Department of the Interior

Fish and Wildlife Service

50 CFR Part 17

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

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AH10

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

AGENCY: Fish and Wildlife Service, Interior.

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

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose critical habitat for 32 of the 37 species listed under the Endangered Species Act, known historically from the island of Lanai within 8 critical habitat units totaling approximately 7,853 hectares (ha) (19,405 acres (ac)) on the island of Lanai.

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 May 3, 2002. Public hearing requests must be received by April 18, 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: The 32 species for which we propose critical habitat are *Abutilon eremitopetalum, Adenophorus periens, Bidens micrantha* ssp. *kalealaha, Bonamia menziesii, Brighamia rockii, Cenchrus agrimonioides, Centaurium sebaeoides, Clermontia oblongifolia* ssp. *mauiensis, Ctenitis squamigera, Cyanea grimesiana* ssp. *grimesiana, Cyanea lobata, Cyanea macrostegia* ssp. *gibsonii, Cyperus trachysanthos, Cyrtandra munroi, Diellia erecta, Diplazium molokaiense, Gahnia lanaiensis, Hedyotis mannii, Hedyotis schlechtendahliana* var. *remyi, Hesperomannia arborescens, Hibiscus brackenridgei, Isodendrion pyrifolium, Labordia tinifolia* var. *lanaiensis, Melicope munroi, Neraudia sericea, Portulaca sclerocarpa, Sesbania tomentosa, Solanum incompletum, Spermolepis hawaiiensis, Tetramolopium remyi, Vigna o-wahuensis,* and *Viola lanaiensis.* Critical habitat is not proposed for 4 (*Mariscus fauriei, Silene lanceolata, Tetramolopium lepidotum* ssp. *lepidotum, and Zanthoxylum hawaiiense*) of the 37 species which no longer occur on the island of Lanai, and for which we are unable to identify any habitat that is essential to their conservation on the island of Lanai. Prudency determinations for these species were contained in previous proposals published in the **Federal Register** on November 7, 2000, December 18, 2000, December 27, 2000, December 29, 2000, and January 28, 2002. Critical habitat is not proposed for *Phyllostegia glabra* var. *lanaiensis,* for which we determined that critical habitat designation is not prudent because it has not been seen recently in the wild, and no viable genetic material of this species is known.

Background

In the Lists of Endangered and Threatened Plants (50 CFR 17.12), there are 37 plant species that, at the time of listing, were reported from the island of Lanai (Table 1). Seven of these species are endemic to the island of Lanai, while 30 species are reported from one or more other islands, as well as Lanai. Each of these species is described in more detail below in the section, ''Discussion of Plant Taxa.''

TABLE 1.—SUMMARY OF ISLAND DISTRIBUTION OF 37 SPECIES FROM LANAI

Species	Island Distribution						
	Kauai	Oahu	Molokai	Lanai	Maui	Hawaii	NW. Isles, Kahoolawe Niihau
Abutilon eremitopetalum (NCN*)	.....	.....	.....	C	.....	.....	
Adenophorus periens (pendant kihi fern)	C	H	C	R	R	C	
Bidens micrantha ssp. *kalealaha* (kookoolau)				H	C		
Bonamia menziesii (NCN)	C	C	H	C	C	C	
Brighamia rockii (pua ala)			C	H	H		
Cenchrus agrimonioides (kamanomano, sandbur, agrimony).		C		H	C	R	NW Isles (H)
Centaurium sebaeoides (awiwi)	C	C	C	C	C		
Clermontia oblongifolia ssp. *mauiensis* (oha wai)				C	C		
Ctenitis squamigera (pauoa)	H	C	C	C	C	H	
Cyanea grimesiana ssp. *grimesiana* (haha)		C	C	C	C		
Cyanea lobata (haha)				H	C		
Cyanea macrostegia ssp. *gibsonii* (NCN)				C			
Cyperus trachysanthos (puukaa)	C	C	H	H			Ni (C)
Cyrtandra munroi (haiwale)				C	C		
Diellia erecta (NCN)	C	C	C	H	C	C	

TABLE 1.—SUMMARY OF ISLAND DISTRIBUTION OF 37 SPECIES FROM LANAI—Continued

Species	Island Distribution						
	Kauai	Oahu	Molokai	Lanai	Maui	Hawaii	NW. Isles, Kahoolawe Niihau
Diplazium molokaiense (asplenium-leaved asplenium).	H	H	H	H	C		
Gahnia lanaiensis (NCN)				C			
Hedyotis mannii (pilo)			C	C	C		
Hedyotis schlechtendahliana var. *remyi* (kopa)				C			
Hesperomannia arborescens (NCN)		C	C	H	C		
Hibiscus brackenridgei (mao hau hele)	H	C	H	C	C	C	Ka (R)
Isodendrion pyrifolium (wahine noho kula)		H	H	H	H	C	Ni (H)
Labordia tinifolia var. *lanaiensis* (kamakahala)				C			
Mariscus fauriei (NCN)			C	H		C	
Melicope munroi (alani)			H	C			
Neraudia sericea (NCN)			C	H	C		Ka (H)
Phyllostegia glabra var. *lanaiensis* (NCN)				H			
Portulaca sclerocarpa (poe)				C		C	
Sesbania tomentosa (ohai)	C	C	C	H	C	C	Ni (H), ka (C), NW Isles (C)
Silene lanceolata (NCN)	H	C	C	H		C	
Solanum incompletum (popolo ku mai)	H		H	H	H	C	
Spermolepis hawaiiensis (NCN)	C	C	C	C	C	C	
Tetramolopium lepidotum ssp. *lepidotum* (NCN)		C		H			
Tetramolopium remyi (NCN)				C	H		
Vigna o-wahuensis (NCN)		H	C	C	C	C	Ni (H), Ka (C)
Viola lanaiensis (NCN)				C			
Zanthoxylum hawaiiense (ae)	C		C	H	C	C	

KEY:
C (Current)—population last observed within the past 30 years.
H (Historical)—population not seen for more than 30 years.
R (Reported)—reported from undocumented observations.
* NCN—No Common Name.

We determined that designation of critical habitat was prudent for six plants from the island of Lanai on December 27, 2000 (65 FR 82086). These species are: *Abutilon eremitopetalum, Cyanea macrostegia* ssp. *gibsonii, Gahnia lanaiensis, Portulaca sclerocarpa, Tetramolopium remyi,* and *Viola lanaiensis.* In proposals published on November 7, 2000 (65 FR 66808), and December 18, 2000 (65 FR 79192), we determined that designation of critical habitat was prudent for ten plants that are reported from Lanai as well as from Kauai, Niihau, Maui, or Kahoolawe. These ten plants are: *Bonamia menziesii, Centarium sebaeoides, Clermontia oblongifolia* ssp. *mauiensis, Ctenitis squamigera, Cyanea grimesiana* ssp. *grimesiana, Cyrtandra munroi, Hedyotis mannii, Hibiscus brackenridgei, Spermolepis hawaiiensis,* and *Vigna o-wahuensis.* In addition, at the time we listed *Hedyotis schlechtendahliana* var. *remyi, Labordia tinifolia* var. *lanaiensis,* and *Melicope munroi,* on September 3, 1999 (64 FR 48307), we determined that designation of critical habitat was prudent for these three taxa from Lanai. No change is made to these 19 prudency determinations in this revised proposal and they are hereby incorporated by reference (64 FR 48307, 65 FR 66808, 65 FR 79192).

In the December 27, 2000, proposal we determined that critical habitat was not prudent for *Phyllostegia glabra* var. *lanaiensis,* a species known only from Lanai, because it had not been seen in the wild on Lanai since 1914 and no viable genetic material of this species is known to exist. Therefore, such designation would not be beneficial to this species. No change is made here to the December 27, 2000, not prudent determination for *Phyllostegia glabra* var. *lanaiensis* and it is hereby incorporated by reference (65 FR 82086).

In the December 27, 2000, proposal we proposed designation of critical habitat for 18 plants from the island of Lanai. These species are: *Abutilon eremitopetalum, Bonamia menziesii, Centaurium sebaeoides, Clermontia oblongifolia* ssp. *mauiensis, Ctenitis squamigera, Cyanea grimesiana* ssp. *grimesiana, Cyanea macrostegia* ssp. *gibsonii, Cyrtandra munroi, Gahnia lanaiensis, Hedyotis mannii, Hedyotis schlechtendahliana* var. *remyi, Hibiscus brackenridgei, Labordia tinifolia* var. *lanaiensis, Melicope munroi, Portulaca sclerocarpa, Spermolepis hawaiiensis, Tetramolopium remyi,* and *Viola lanaiensis.* In this proposal we have revised the proposed designations for these 18 plants based on new information and to address comments received during the comment periods on the December 27, 2000, proposal.

In the December 27, 2000, proposal we did not propose designation of critical habitat for 17 species that no longer occur on Lanai but are reported from one or more other islands. We determined that critical habitat was prudent for 16 of these species (*Adenophorus periens, Bidens micrantha* ssp. *kalealaha, Brighamia rockii, Cenchrus agrimonioides, Cyanea lobata, Cyperus trachysanthos, Diellia erecta, Diplazium molokaiense, Hesperomannia arborescens, Isodendrion pyrifolium, Mariscus faurei, Neraudia sericea, Sesbania tomentosa, Silene lanceolata, Solanum incompletum,* and *Zanthoxylum hawaiiense*) in other proposed rules published on November 7, 2000 (Kauai), December 18, 2000 (Maui and Kahoolawe), December 29, 2000 (Molokai), and January 28, 2002 (Kauai revised proposal). No change is made to these prudency determinations for these 16 species in this proposal and they are hereby incorporated by reference (65 FR 66808, 65 FR 79192, 65 FR 83158, and 67 FR 3940). In this proposal, we propose designation of critical habitat

for *Adenophorus periens, Bidens micrantha* ssp. *kalealaha, Brighamia rockii, Cenchrus agrimonioides, Cyanea lobata, Cyperus trachysanthos, Diellia erecta, Diplazium molokaiense, Hesperomannia arborescens, Isodendrion pyrifolium, Neraudia sericea, Sesbania tomentosa,* and *Solanum incompletum* on the island of Lanai, based on new information, including information received during the comment periods on the December 27, 2000, proposal. Critical habitat is not proposed for *Mariscus faurei, Silene lanceolata,* and *Zanthoxylum hawaiiense* on the island of Lanai because these plants no longer occur on Lanai and we are unable to determine habitat which is essential to their conservation on this island. However, proposed critical habitat designations for these species may be included in other future Hawaiian plants proposed critical habitat rules (Table 2).

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

Species	Proposed rules in which critical habitat designations will be made
Mariscus fauriei	Molokai, Hawaii.
Silene lanceolata	Molokai, Hawaii, and Oahu.
Tetramolopium lepidotum ssp. lepidotum	Oahu.
Zanthoxylum hawaiiense	Kauai, Maui, Molokai, and Hawaii.

In this proposal, we determine that critical habitat is prudent for one species (*Tetramolopium lepidotum* ssp. *lepidotum*) for which a prudency determination has not been made previously, and that no longer occurs on Lanai but is reported from one other island (Oahu). This plant was listed as endangered under the Endangered Species Act of 1973, as amended (Act) in 1991. At the time this plant was listed, we determined that designation of critical habitat was not prudent because designation would increase the degree of threat to this species and would not benefit the plant. We determine that designation of critical habitat is prudent for *Tetramolopium lepidotum* ssp. *lepidotum* because we now believe that such designation would be beneficial to this species. Critical habitat is not proposed at this time for *Tetramolopium lepidotum* ssp. *lepidotum* on the island of Lanai because the species no longer occurs on Lanai and we are unable to determine habitat which is essential to its conservation on this island. However, proposed critical habitat designation, or non-designation, for this species will be included in other future Hawaiian plants proposed critical habitat rules (Table 2).

Critical habitat for 32 of the 37 species from the island of Lanai is proposed at this time. These species are: *Abutilon eremitopetalum, Adenophorus periens, Bidens micrantha* ssp. *kalealaha, Bonamia menziesii, Brighamia rockii, Cenchrus agrimonioides, Centaurium sebaeoides, Clermontia oblongifolia* ssp. *mauiensis, Ctenitis squamigera, Cyanea grimesiana* ssp. *grimesiana, Cyanea lobata, Cyanea macrostegia* ssp. *gibsonii, Cyperus trachysanthos, Cyrtandra munroi, Diellia erecta, Diplazium molokaiense, Gahnia lanaiensis, Hedyotis mannii, Hedyotis schlechtendahliana* var. *remyi, Hesperomannia arborescens, Hibiscus brackenridgei, Isodendrion pyrifolium, Labordia tinifolia* var. *lanaiensis, Melicope munroi, Neraudia sericea, Portulaca sclerocarpa, Sesbania tomentosa, Solanum incompletum, Spermolepis hawaiiensis, Tetramolopium remyi, Vigna o-wahuensis,* and *Viola lanaiensis.* Critical habitat is not proposed for four of the 37 species (*Mariscus fauriei, Silene lanceolata, Tetramolopium lepidotum* ssp. *lepidotum,* and *Zanthoxylum hawaiiense*) which no longer occur on the island of Lanai, and for which we are unable to determine any habitat that is essential to their conservation on the island of Lanai. However, proposed critical habitat designations for these species may be included in other future Hawaiian plants proposed critical habitat rules (Table 2). Critical habitat is not proposed for *Phyllostegia glabra* var. *lanaiensis* for which we determined, on December 27, 2000, that critical habitat designation is not prudent because it had not been seen recently in the wild, and no viable genetic material of this species is known to exist. No change is made to this prudency determination here, and it is hereby incorporated by reference (65 FR 82086).

The Island of Lanai

Lanai is a small island totaling about 360 square kilometers (sq km) (139 square miles (sq mi)) in area. Hidden from the trade winds in the lee or rain shadow of the more massive West Maui Mountains, Lanai was formed from a single shield volcano built by eruptions at its summit and along three rift zones. The principal rift zone runs in a northwesterly direction and forms a broad ridge whose highest point, Lanaihale, has an elevation of 1,027 meters (m) (3,370 feet (ft)). The entire ridge is commonly called Lanaihale, after its highest point. Annual rainfall on the summit of Lanaihale is 760 to 1,015 millimeters (mm) (30 to 40 inches (in)), but is considerably less, 250 to 500 mm (10 to 20 in), over much of the rest of the island (Department of Geography 1998).

Geologically, Lanai is part of the four island complex comprising Maui, Molokai, Lanai, and Kahoolawe, known collectively as Maui Nui (Greater Maui). During the last Ice Age about 12,000 years ago when sea levels were about 160 m (525 ft) less than their present level, these four islands were connected by a broad lowland plain. This land bridge allowed the movement and interaction of each island's flora and fauna and contributed to the present close relationships of their biota (Department of Geography 1998).

Changes in Lanai's ecosystem began with the arrival of the first Polynesians about 1,500 years ago. In the 1800s, goats (*Capra hircus*) and sheep (*Ovis aries*) were first introduced to the island. Native vegetation was soon decimated by these non-native ungulates, and erosion from wind and rain caused further damage to the native forests. Formal ranching was begun in 1902, and by 1910, the Territory forester helped to revegetate the island. By 1911, a ranch manager from New Zealand, George Munro, instituted a forest management practice to recover the native forests and bird species which included fencing and eradication of sheep and goats from the mountains. By the 1920s, Castle and Cooke had acquired more than 98 percent of the island and established a 6,500 ha (16,000 ac) pineapple plantation

surrounding its company town, Lanai City. In the early 1990s, the pineapple plantation closed, and luxury hotels were developed by the private landowner, sustaining the island's economy today (Hobdy 1993).

There are no military installations on the island of Lanai.

Discussion of Plant Taxa

Species Endemic to Lanai

Abutilon eremitopetalum (NCN)

Abutilon eremitopetalum is a long-lived shrub in the mallow family (Malvaceae) with grayish-green, densely hairy, and heart-shaped leaves. It is the only *Abutilon* on Lanai whose flowers have green petals hidden within the calyx (the outside leaf-like part of the flower) (Bates 1999).

Abutilon eremitopetalum is known to flower during February. Little else is known about the life history of *Abutilon eremitopetalum.* Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1995).

Historically, *Abutilon eremitopetalum* was found in small, widely scattered colonies in the ahupuaa (geographical areas) of Kalulu, Mahana, Maunalei, Mamaki, and Paawili on the northern, northeastern, and eastern parts of Lanai. Currently, about seven individuals are known from a single population on privately owned land in Kahea Gulch on the northeastern part of the island (Caum 1933; Hawaii Natural Heritage Program (HINHP) Database 2000; Service 1995; Geographic Decision Systems International (GDSI) 2000).

Abutilon eremitopetalum is found in lowland dry forest at elevations between 108 and 660 m (354 and 2,165 ft), on a moderately steep north-facing slope on red sandy soil and rock. *Erythrina sandwicensis* (wili wili) and *Diospyros sandwichensis* (lama) are the dominant trees in open forest of the area. Other associated native species include *Psydrax odoratum* (alahee), *Dodonaea viscosa* (aalii), *Nesoluma polynesicum* (keahi), *Rauvolfia sandwicensis* (hao), *Sida fallax* (ilima), and *Wikstroemia* sp. (akia) (Service 1995; HINHP Database 2000).

The threats to *Abutilon eremitopetalum* are habitat degradation and competition by encroaching alien plant species such as *Lantana camara* (lantana), *Leucaena leucocephala* (koa haole), and *Pluchea carolinensis* (sourbush); browsing by axis deer (*Axis axis*); soil erosion caused by feral ungulate grazing on grasses and forbs; and the small number of extant individuals, as the limited gene pool may depress reproductive vigor, or a single natural or man-caused environmental disturbance could destroy the only known existing population. Fire is another potential threat because the area is dry much of the year (HINHP Database 2000; 56 FR 47686; Service 1995).

Cyanea macrostegia ssp. gibsonii (NCN)

Cyanea macrostegia ssp. *gibsonii,* a long-lived perennial and a member of the bellflower family (Campanulaceae), is a palm-like tree 1 to 7 m (3 to 23 ft) tall with elliptic or oblong leaves that have fine hairs covering the lower surface. The following combination of characters separates this taxon from the other members of the genus on Lanai: calyx lobes are oblong, narrowly oblong, or ovate in shape; and the calyx and corolla (petals of a flower) are both more than 0.5 centimeters (cm) (0.2 in) wide (Lammers 1999; 56 FR 47686).

Limited observations suggest *Cyanea macrostegia* ssp. *gibsonii* flowers during the month of July. Pollination vectors, seed dispersal agents, longevity of plants and seeds, specific environmental requirements, and other limiting factors are unknown (Service 1995).

Cyanea macrostegia ssp. *gibsonii* has been is documented from the summit of Lanaihale and the upper parts of Mahana, Kaiholena, and Maunalei Valleys of Lanai. There are currently only two populations containing 74 individuals. One population is located north of Lanaihale and the second population is north of Puu aalii on privately owned land (Lammers 1999; 56 FR 47686; GDSI 2000; HINHP Database 2000).

The habitat of *Cyanea macrostegia* ssp. *gibsonii* is lowland wet *Metrosideros polymorpha* (ohia) forest or *Diplopterygium pinnatum* (uluhe lau nui)-*Metrosideros polymorpha* shrubland between elevations of 738 and 1,032 m (2,421 and 3,385 ft). It has been observed to grow on flat to moderate or steep slopes, usually on lower gulch slopes or gulch bottoms, often at edges of streambanks, probably due to vulnerability to ungulate damage at more accessible locations. Associated vegetation includes *Dicranopteris linearis* (uluhe), *Perrottetia sandwicensis* (olomea), *Scaevola chamissoniana* (naupaka kuahiwi), *Pipturus albidus* (mamaki), *Antidesma platyphyllum* (hame), *Cheirodendron trigynum* (olapa), *Freycinetia arborea* (ieie), *Psychotria* sp. (kopiko), *Cyrtandra* sp. (haiwale), *Broussaisia arguta* (kanawao), *Clermontia* sp. (oha wai), *Dubautia* sp. (naenae), *Hedyotis* sp. (NCN), *Ilex anomala* (kawau), *Labordia* sp. (kamakahala), *Melicope* sp. (alani), *Pneumatopteris sandwicensis* (NCN), and *Sadleria* sp. (amau) (Service 1995; HINHP Database 2000; Joel Lau, Hawaii Natural Heritage Program, pers. comm., 2001).

The threats to *Cyanea macrostegia* ssp. *gibsonii* are browsing by deer; competition with the alien plant *Hedychium gardnerianum* (kahili ginger); and the small number of extant individuals, as the limited gene pool may depress reproductive vigor, or any natural or man-caused environmental disturbance could destroy the existing populations (HINHP Database 2000; Service 1995; 56 FR 47686).

Gahnia lanaiensis (NCN)

Gahnia lanaiensis, a short-lived perennial and a member of the sedge family (Cyperaceae), is a tall (1.5 to 3 m (5 to 10 ft)), tufted, grass-like plant. This sedge may be distinguished from grasses and other genera of sedges on Lanai by its spirally arranged flowers, its solid stems, and its numerous, three-ranked leaves. *Gahnia lanaiensis* differs from the other members of the genus on the island by its achenes (seed-like fruits), which are 0.36 to 0.46 cm (0.14 to 0.18 in) long and purplish-black when mature (Koyama 1999).

July has been described as the ''end of the flowering season'' for *Gahnia lanaiensis.* Plants of this species have been observed with fruit in October. Pollination vectors, seed dispersal agents, longevity of plants and seeds, specific environmental requirements, and other limiting factors are unknown (Degener *et al.,* 1964; 56 FR 47686).

Gahnia lanaiensis is known from one population containing 47 individuals on privately owned land along the summit of Lanaihale in the Haalelepaakai area and on the eastern edge of Hauola Gulch. The population is found between 915 and 1,030 m (3,000 and 3,380 ft) in elevation. This distribution encompasses the entire known historic range of the species (GDSI 2000; HINHP Database 2000).

The habitat of *Gahnia lanaiensis* is lowland wet forest (shrubby rainforest to open scrubby fog belt or degraded lowland mesic forest), wet *Diplopterygium pinnatum-Dicranopteris linearis-Metrosideros polymorpha* shrubland, or wet *Metrosideros polymorpha-Dicranopteris linearis* shrubland at elevations between 737 and 1,032 m (2,417 and 3,385 ft). It occurs on flat to gentle ridgecrest topography in moist to wet clay or other soil substrate in open areas or in moderate shade. Associated species include native mat ferns, *Doodia* sp.

(okupukupu laulii), *Odontosoria chinensis* (palaa), *Ilex anomala* (kawau), *Hedyotis terminalis* (manono), *Sadleria* spp. (amau), *Coprosma* sp. (pilo), *Lycopodium* sp. (wawaeiole), *Scaevola* sp. (naupaka), and *Styphelia tameiameiae* (pukiawe) (Service 1995).

The primary threats to this species are the small number of plants and their restricted distribution, which increase the potential for extinction from naturally occurring events. In addition, *Gahnia lanaiensis* is threatened by habitat destruction resulting from the planned development of the island, and competition with *Leptospermum scoparium* (manuka), a weedy tree introduced from New Zealand, which is spreading along Lanaihale, but has not yet reached the area where *Gahnia* is found (Service 1995; HINHP Database 2000).

Hedyotis schlechtendahliana var. remyi (kopa)

Hedyotis schlechtendahliana var. *remyi,* a short-lived perennial and a member of the coffee family (Rubiaceae), is a few-branched subshrub from 60 to 600 cm (24 to 240 in) long, with weakly erect or climbing stems that may be somewhat square, smooth, and glaucous (with a fine waxy coating that imparts a whitish or bluish hue to the stem). The species is distinguished from others in the genus by the distance between leaves and the length of the sprawling or climbing stems, and the variety *remyi* is distinguished from *Hedyotis schlechtendahliana* var. *schlechtendahliana* by the leaf shape, presence of narrow flowering stalks, and flower color (Wagner *et al.,* 1999).

Pollination vectors, seed dispersal agents, longevity of plants and seeds, specific environmental requirements, and other limiting factors are unknown for *Hedyotis schlechtendahliana* var. *remyi* (Service 2001).

Historically, *Hedyotis schlechtendahliana* var. *remyi* was known from five locations on the northwestern portion of Lanaihale. Currently, this species is known from eight individuals in two populations on privately owned land on Kaiholeha-Hulupoe Ridge, Kapohaku drainage, and Waiapaa drainage on Lanaihale (64 FR 48307; GDSI 2000; HINHP Database 2000).

Hedyotis schlechtendahliana var. *remyi* typically grows on or near ridge crests in mesic windswept shrubland with a mixture of dominant plant species that may include *Metrosideros polymorpha, Dicranopteris linearis,* or *Styphelia tameiameiae* at elevations between 558 and 1,032 m (1,830 and 3,385 ft). Associated plant species include *Dodonaea viscosa, Odontosoria chinensis, Sadleria* spp., *Dubautia* spp., and *Myrsine* sp. (kolea) (HINHP Database 2000; 64 FR 48307).

The primary threats to *Hedyotis schlechtendahliana* var. *remyi* are habitat degradation and destruction by axis deer; competition with alien plant species, such as *Psidium cattleianum* (strawberry guava), *Myrica faya* (firetree), *Leptospermum scoparium,* and *Schinus terebinthifolius* (christmasberry); and random environmental events or reduced reproductive vigor due to the small number of remaining individuals and populations (HINHP Database 2000; 64 FR 48307).

Labordia tinifolia var. lanaiensis (kamakahala)

Labordia tinifolia var. *lanaiensis,* a short-lived perennial in the logan family (Loganiaceae), is an erect shrub or small tree 1.2 to 15 m (4 to 49 ft) tall. The stems branch regularly into two forks of nearly equal size. This subspecies differs from the other species in this endemic Hawaiian genus by having larger capsules (a dry, generally many seeded fruit) and smaller corollas (petals, whorl of flower parts) (Wagner *et al.,* 1999).

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

Labordia tinifolia var. *lanaiensis* was historically known from the entire length of the summit ridge of Lanaihale. Currently, *Labordia tinifolia* var. *lanaiensis* is known from only one population on privately owned land at the southeastern end of the summit ridge of Lanaihale. This population totals 300 to 800 scattered individuals (HINHP Database 2000; GDSI 2000; Service 2001).

The typical habitat of *Labordia tinifolia* var. *lanaiensis* is gulch slopes in lowland mesic forest. Associated native species include *Diospyros sandwicensis, Bobea elatior* (ahakea launui), *Myrsine lessertiana* (kolea), *Pipturus albidus, Pittosporum confertiflorum* (hoawa), *Pleomele fernaldii* (hala pepe), *Sadleria cyatheoides, Scaevola chamissoniana, Xylosma hawaiiense* (maua), *Cyrtandra grayii* (haiwale) and *Cyrtandra grayana* (haiwale), *Diplopterygium pinnatum, Hedyotis acuminata* (au), *Clermontia* spp., *Alyxia oliviformis* (maile), *Coprosma* spp., *Dicranopteris linearis, Freycinetia arborea, Melicope* spp., *Perrottetia sandwicensis, Pouteria sandwicensis* (alaa), and *Psychotria* spp., *Dicranopteris linearis,* and *Scaevola chamissoniana,* at elevations between 558 and 1,013 m (1,830 and 3,323 ft) (HINHP Database 2000; 64 FR 48307; Service 2001).

Labordia tinifolia var. *lanaiensis* is threatened by axis deer and several alien plant species. The species is also threatened by random environmental factors because of the small population (64 FR 48307; Service 2001).

Phyllostegia glabra var. lanaiensis (NCN)

Phyllostegia glabra var. *lanaiensis* is a robust, erect to decumbent (reclining, with the end ascending), glabrous, short-lived perennial herb in the mint family (Lamiaceae). Its leaves are thin, narrow, lance-shaped, 8 to 24 cm (3.2 to 9.5 in) long and 1.6 to 2.5 cm (0.63 to 0.98 in) wide, often red-tinged or with red veins, and toothed at the edges. The flowers are in clusters of six to ten per leaf axil, mostly at the ends of branches. The flowers are white, occasionally tinged with purple, and are variable in size, about 1 to 2.5 cm (0.39 to 0.98 in) long. The fruit consists of four small, fleshy nutlets. This variety is very similar to *Phyllostegia glabra* var. *glabra;* it may be difficult to differentiate between the two species without flowers (Wagner *et al.,* 1999).

Little is known about the life history of *Phyllostegia glabra* var. *lanaiensis.* Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1995).

Phyllostegia glabra var. *lanaiensis* is known from only two collections from Lanai (one near Kaiholena) and was last collected in 1914 (two fertile specimens). A report of this plant from the early 1980s probably was erroneous and should be referred to as *Phyllostegia glabra* var. *glabra* (Robert Hobdy, DOFAW, pers. comm., 1992; Service 1995).

Nothing is known of the preferred habitat of or native plant species associated with *Phyllostegia glabra* var. *lanaiensis* on the island of Lanai (Service 1995).

Nothing is known of the threats to *Phyllostegia glabra* var. *lanaiensis* on the island of Lanai (Service 1995).

Viola lanaiensis (NCN)

Viola lanaiensis, a short-lived perennial of the violet family (Violaceae), is a small, erect, unbranched or little-branched subshrub. The leaves, which are clustered toward the upper part of the stem, are lance-shaped with a pair of narrow,

membranous stipules (leaf-like appendages arising from the base of a leaf) below each leaf axis. The flowers are small and white with purple tinged or purple veins, and occur singly or up to four per upper leaf axil. The fruit is a capsule, about 1.0 to 1.3 cm (0.4 to 0.5 in) long. It is the only member of the genus on Lanai (Wagner *et al.,* 1999).

Little is known about the life history of *Viola lanaiensis.* Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1995).

Viola lanaiensis was known historically from scattered sites on the summit, ridges, and upper slopes of Lanaihale (from near the head of Kaiolena and Hookio Gulches to the vicinity of Haalelepaakai, a distance of about 4 km (2.5 mi), at elevations of approximately 850 to 975 m (2,790 to 3,200 ft). An occurrence of *V. lanaiensis* was known in the late 1970s along the summit road near the head of Waialala Gulch where a population of approximately 20 individuals flourished. That population has since disappeared due to habitat disturbance. Two populations are currently known from privately owned land on southern Lanai: in Kunoa Gulch; between Kunoa and Waialala Gulches; in the upper end of the northernmost drainage of Awehi Gulch; in Hauola Gulch; and along Hauola Trail. It is estimated that the populations total less than 500 plants (GDSI 2000; HINHP Database 2000).

The habitat of *Viola lanaiensis* is *Metrosideros polymorpha-Dicranopteris linearis* lowland wet forest or lowland mesic shrubland. It has been observed on moderate to steep slopes from lower gulches to ridgetops, at elevations between 639 and 1,032 m (2,096 and 3,385 ft), with a soil and decomposed rock substrate in open to shaded areas. It was once observed growing from crevices in drier soil on a mostly open rock area near a recent landslide. Associated vegetation includes ferns and short windswept shrubs or other diverse mesic community members, such as *Scaevola chamissoniana, Hedyotis terminalis, Hedyotis centranthoides* (NCN), *Styphelia tameiameiae, Carex* sp. (NCN), *Ilex anomala, Psychotria* spp., *Antidesma* spp. (hame), *Coprosma* spp., *Freycinetia arborea, Myrsine* spp., *Nestegis* sp. (olopua), *Psychotria* spp., and Xylosma sp. (maua) (Service 1995; 56 FR 47686).

The main threats to *Viola lanaiensis* include browsing and habitat disturbance by axis deer; encroaching alien plant species, such as *Leptospermum* sp. (NCN); depressed reproductive vigor due to a limited local gene pool; the probable loss of appropriate pollinators; and predation by slugs (Midax gigetes) (Service 1995; 56 FR 47686).

Multi-Island Species

Adenophorus periens (pendent kihi fern)

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

Little is known about the life history of *Adenophorus periens,* which seems to grow only in closed canopy dense forest with high humidity. Its breeding system is unknown, but outbreeding is very likely to be the predominant mode of reproduction. Spores may be dispersed by wind, water, or 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 the 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 known (Linney 1989; Service 1999).

Historically, *Adenophorus periens* was known from Kauai, Oahu, and the island of Hawaii, with undocumented reports from Lanai and Maui. Currently, it is known from several locations on Kauai, Molokai, and Hawaii. On Lanai, it was last seen in the 1860s (59 FR 56333; GDSI 2000; HINHP Database 2000; Service 1999).

This species, an epiphyte (a plant that derives moisture and nutrients from the air and rain) usually growing on *Metrosideros polymorpha* trunks, is found in riparian banks of stream systems in well-developed, closed canopy that provides deep shade or high humidity in *Metrosideros polymorpha-Dicranopteris linearis-Diplopterygium pinnatum* wet forests, open *Metrosideros polymorpha* montane wet forest, or *Metrosideros polymorpha-Dicranopteris linearis* lowland wet forest at elevations between 763 and 1,032 m (2,503 and 3,385 ft). Associated native plant species include *Machaerina angustifolia* (uki), *Cheirodendron trigynum, Sadleria* spp., *Clermontia* spp., *Psychotria* spp., *Melicope* spp., *Freycinetia arborea, Broussaisia arguta, Syzygium sandwicensis* (ohia ha), and *Hedyotis terminalis* (59 FR 56333; Linney 1989; Kennith Wood, National Tropical Botanical Garden, pers. comm., 2001; Service 1999).

Nothing is known of the threats to *Adenophorus periens* on the island of Lanai because the species was last seen there in the 1860s.

Bidens micrantha ssp. kalealaha (kookoolau)

Bidens micrantha ssp. *kalealaha,* a short-lived member of the aster family (Asteraceae), is an erect perennial herb. This subspecies can be distinguished from other subspecies by the shape of the seeds, the density of the flower clusters, the numbers of ray and disk florets per head, differences in leaf surfaces, and other characteristics (57 FR 20772; Ganders and Nagata 1999).

Bidens micrantha is known to hybridize with other native *Bidens,* such as *B. mauiensis* and *B. menziesii,* and possibly *B. conjuncta.* Little else is known about the life history of *Bidens micrantha* ssp. *kalealaha.* Flowering cycles, pollination vectors, seed dispersal agents, longevity, and specific environmental requirements are unknown (Ganders and Nagata 1999; Service 1997; 57 FR 20772).

Historically, *Bidens micrantha* ssp. *kalealaha* was known from Lanai and Maui. Currently, this taxon remains only on East Maui. It was last seen on Lanai in the 1960s (Ganders and Nagata 1999; HINHP Database 2000; Service 1997; 57 FR 20772; GDSI 2000; HINHP Database 2000).

The habitat of *Bidens micrantha* ssp. *kalealaha* is gulch slopes in dry *Dodonaea viscosa* shrubland at elevations between 409 and 771 m (1,342 and 2,529 ft) (J. Lau, pers. comm., 2001).

The threats to this species on Lanai included habitat destruction by feral goats, pigs, and deer; competition from a variety of alien plant species; and fire (Service 1997; 57 FR 20772).

Bonamia menziesii (NCN)

Bonamia menziesii, a short-lived perennial and a member of the morning-glory family (Convolvulaceae), 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 (narrowed top of ovary), longer stems and petioles (a stalk that supports a leaf), and rounder leaves (Austin 1999).

Little is known about the life history of *Bonamia menziesii.* Its flowering

cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999).

Historically, *Bonamia menziesii* was known from Kauai, Oahu, Molokai, West Maui, and Hawaii. Currently, this species is known from Kauai, Oahu, Maui, Hawaii, and Lanai. On Lanai, the three populations, containing a total of 14 individual plants, are found on privately owned land in the Ahakea and Kanepuu Units of Kanepuu Preserve, and on Puhielelu Ridge (GDSI 2000; HINHP Database 2000).

Bonamia menziesii is found in dry *Nestegis sandwicensis-Diospyros* sp. (lama) forest and dry *Dodonea viscosa* shrubland at elevations between 315 and 885 m (1,033 and 2,903 ft). Associated species include *Bobea* sp. (ahakea), *Nesoluma polynesicum, Erythrina sandwicensis, Rauvolfia sandwicensis, Metrosideros polymorpha, Psydrax odoratum, Dienella sandwicensis* (uki uki), *Diospyros sandwicensis* (lama), *Hedyotis terminalis, Melicope* sp., *Myoporum sandwicense* (naio), *Nestegis sandwicensis* (olopua), *Pisonia* sp. (papala kepau), *Pittosporum* sp. (hoawa), *Pouteria sandwicensis,* and *Sapindus oahuensis* (lonomea) (HINHP Database 2000; 59 FR 56333).

The primary threats to this species on Lanai are habitat degradation and possible predation by feral pigs, goats, and axis deer; competition with a variety of alien plant species, such as *Lantana camara, Leucaena leucocephala* and *Schinus terebinthifolius;* and an alien beetle (*Physomerus grossipes*) (Service 1999; 59 FR 56333).

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* have provided the following information: the reproductive system is protandrous, meaning there is a temporal 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 have been known to flower at nine months. This species was observed in flower during August. Little else is known about the life history of *Brighamia rockii.* Flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (HINHP Database 2000; Service 1996b; 57 FR 46325).

Historically, *Brighamia rockii* ranged along the northern coast of East Molokai from Kalaupapa to Halawa and may possibly have grown on Maui, and it was last seen on Lanai in 1911 (Lammers 1999; HINHP Database 2000; K. Wood, *in litt.* 2000; Service 1996b; 57 FR 46325). Currently, it is extant only on Molokai.

On Lanai, *Brighamia rockii* occurred on sparsely vegetated ledges of steep, rocky, dry cliffs, at elevations between 119 and 756 m (390 and 2,480 ft) with native grasses, sedges, herbs and shrubs (J. Lau, pers. comm., 2001; Service 1996b; 57 FR 46325).

Threats to *Brighamia rockii* on the island of Lanai included habitat destruction from deer and goats, and competition with alien plants (Service 1996b).

Cenchrus agrimonioides (kamanomano (= sandbur, agrimony))

Cenchrus agrimonioides is a short-lived perennial member of the grass family (Poaceae) with leaf blades that are flat or folded and have a prominent midrib. There are two varieties, *Cenchrus agrimonioides* var. *laysanensis* and *Cenchrus agrimonioides* var. *agrimonioides.* They differ from each other in that var. *agrimonioides* has smaller burs, shorter stems, and narrower leaves. This species is distinguished from others in the genus by the cylindrical to lance-shaped bur and the arrangement and position of the bristles (O'Connor 1999).

Little is known about the life history of *Cenchrus agrimonioides.* Flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown. This species has been observed to produce fruit year round (Service 1999; 61 FR 53108).

Historically, *Cenchrus agrimonioides* var. *agrimonioides* was known from Oahu, Lanai, Maui, and an undocumented report from the Island of Hawaii. Historically, *C. agrimonioides* var. *laysanensis* was known from Laysan, Kure, and Midway, all within the Northwestern Hawaiian Islands National Wildlife Refuge. This variety has not been seen since 1973. Currently, *Cenchrus agrimonioides* var. *agrimonioides* is known from Oahu and Maui. On Lanai it was last seen in 1915 (Service 1999; 61 FR 53108; HINHP Database 2000).

Cenchrus agrimonioides var. *agrimonioides* was found on slopes in mesic *Metrosideros polymorpha* forest and shrubland at elevations between 583 and 878 m (1,912 and 2,880 ft) (Service 1999; 61 FR 53108; HINHP Database 2000; R. Hobdy *et al.,* pers. comm., 2001).

The major threats to *Cenchrus agrimonioides* var. *agrimonioides* on Lanai included competition with alien plant species, and browsing and habitat degradation by goats and cattle (*Bos taurus*) (Service 1999; 61 FR 53108).

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*, 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. Little else is known about the life history of *Centaurium sebaeoides*. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999).

Centaurium sebaeoides was historically and is currently known from Kauai, Oahu, Molokai, Lanai, and Maui. On Lanai, there is one population containing between 20 and 30 individual plants in Maunalei Valley on privately owned land (HINHP Database 2000).

This species is found on dry ledges at elevations between 39 and 331 m (128 and 1,086 ft). Associated species include *Hibiscus brackenridgei* (HINHP Database 2000).

The major threats to this species on Lanai are competition from alien plant species, depressed reproductive vigor, and natural or human-caused environmental disturbance that could easily be catastrophic to the only known population due to the small number of remaining individuals and the limited and scattered distribution of the species (Service 1999; HINHP Database 2000).

Clermontia oblongifolia ssp. mauiensis (oha wai)

Clermontia oblongifolia ssp. *mauiensis*, a short-lived perennial and a member of the bellflower family (Campanulaceae), is a shrub or tree with oblong to lance-shaped leaves on leaf stalks (petioles). *Clermontia oblongifolia* is distinguished from other members of the genus by its calyx and corolla, which are similar in color and are each fused into a curved tube that falls off as the flower ages. The species is also distinguished by the leaf shape, the male floral parts, the shape of the flower buds, and the lengths of the leaf and flower stalks, the flower, and the smooth green basal portion of the flower (the hypanthium). *Clermontia oblongifolia* ssp. *mauiensis* is reported from Maui and Lanai, while *Clermontia oblongifolia* ssp. *oblongifolia* is only known from Oahu, and *Clermontia oblongifolia* ssp. *brevipes* is only known from Molokai (Lammers 1988, 1999; 57 FR 20772).

Clermontia oblongifolia ssp. *mauiensis* is known to flower from November to July. Little else is known about the life history of *Clermontia oblongifolia* ssp. *mauiensis*. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1997; Rock 1919).

Clermontia oblongifolia ssp. *mauiensis* was historically and is currently known from Lanai and Maui. On Lanai, an unknown number of individuals are reported from Kaiholena Gulch on privately owned land (Lammers 1999; 57 FR 20772; HINHP Database 2000).

This plant typically grows in gulch bottoms in mesic forests at elevations between 700 and 1,032 m (2,296 and 3,385 ft) (HINHP Database 2000).

The threats to this species on Lanai are its vulnerability to extinction from a single natural or human-caused environmental disturbance; depressed reproductive vigor; and habitat degradation by feral pigs (57 FR 20772; Service 1997).

Ctenitis squamigera (pauoa)

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

Little is known about the life history of *Ctenitis squamigera.* Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1998a).

Historically, *Ctenitis squamigera* was recorded from Kauai, Oahu, Molokai, Maui, Lanai, and the island of Hawaii. Currently, it is found on Oahu, Lanai, Maui, and Molokai. On Lanai, there are two populations totaling 42 individual plants on privately owned land in the Waiapaa-Kapohaku area on the leeward side of the island, and in the Lopa and Waiopa Gulches on the windward side (59 FR 49025; GDSI 2000; HINHP Database 2000).

This species is found in the forest understory at elevations between 640 and 944 m (2,099 and 3,096 ft) in diverse mesic forest and scrubby mixed mesic forest (HINHP Database 2000). Associated native plant species include *Nestegis sandwicensis, Coprosma* spp., *Sadleria* spp., *Selaginella* sp. (lepelepe a moa), *Carex meyenii* (NCN), *Blechnum occidentale* (NCN), *Pipturus* spp., *Melicope* spp., *Pneumatopteris sandwicensis, Pittosporum* spp., *Alyxia oliviformis, Freycinetia arborea, Antidesma* spp., *Cyrtandra* spp., *Peperomia* sp. (ala ala wai nui), *Myrsine* spp., *Psychotria* spp., *Metrosideros polymorpha, Syzygium sandwicensis, Wikstroemia* spp., *Microlepia* sp. (NCN), *Doodia* spp., *Boehmeria grandis* (akolea), *Nephrolepis* sp. (kupukupu), *Perrotettia sandwicensis*, and *Xylosma* sp. (HINHP Database 2000, 59 FR 49025).

The primary threats to this species on Lanai are habitat degradation by feral pigs, goats, and axis deer; competition with alien plant species, especially Psidium cattleianum and *Schinus terebinthifolius;* fire; decreased reproductive vigor; and extinction from naturally occurring events due to the small number of existing populations and individuals (Service 1998a; Culliney 1988; HINHP Database 2000; 59 FR 49025).

Cyanea grimesiana ssp. grimesiana (haha)

Cyanea grimesiana ssp. *grimesiana*, a short-lived perennial and a 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).

On Molokai, flowering plants have been reported in July and August. Little else is known about the life history of *Cyanea grimesiana* ssp. *grimesiana*. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999).

Cyanea grimesiana ssp. *grimesiana* was historically and is currently known from Oahu, Molokai, Lanai, and Maui. Currently, on Lanai there are two populations with at least three individuals on privately owned land in Kaiholena Gulch and Waiakeakua Gulch (61 FR 53108; Service 1999; HINHP Database 2000).

This species is typically found in mesic forest often dominated by *Metrosideros polymorpha* or *Metrosideros polymorpha* and *Acacia koa* (koa), or on rocky or steep slopes of stream banks, at elevations between 667 and 1,032 m (2,188 and 3,385 ft). Associated plants include *Antidesma* spp., *Bobea* spp., *Myrsine* spp., *Nestegis sandwicensis, Psychotria* spp., and *Xylosma* sp. (61 FR 53108; Service 1999).

The threats to this species on Lanai are habitat degradation and/or destruction caused by feral axis deer, goats, and pigs; competition with various alien plants; randomly naturally occurring events causing extinction due to the small number of existing individuals; fire; landslides; and predation by rats (Rattus rattus) and various slugs (59 FR 53108; Service 1999).

Cyanea lobata (haha)

Cyanea lobata, a short-lived member of the bellflower family (Campanulaceae), is a sparingly branched perennial shrub with smooth to somewhat rough stems and oblong, irregularly lobed leaves. This species is distinguished from other species of *Cyanea* by the size of the flower and the irregularly lobed leaves with petioles (Lammers 1990).

Cyanea lobata is known to flower from August to February, even in individuals as small as 50 cm (20 in) in height. Little else is known about the life history of *Cyanea lobata*. Flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Rock 1919; Degener 1936; Service 1997; 57 FR 20772).

Historically, *Cyanea lobata* was known from Lanai and West Maui. It was last seen on Lanai in 1934 (GDSI 2000; HINHP Database 2000; Service 1997; 57 FR 20772).

This species occurs in gulches in mesic to wet forest and shrubland at elevations between 664 and 1,032 m (2,178 and 3,385 ft) and containing one or more of the following associated native plant species: *Freycinetia arborea, Touchardia latifolia* (olona), *Morinda trimera* (noni kuahiwi), *Metrosideros polymorpha, Clermontia kakeana* (oha wai), *Cyrtandra* spp., *Xylosma* spp., *Psychotria* spp., *Antidesma* spp., *Pipturus albidus, Peperomia* spp., *Pleomele* spp. (halapepe), and *Athyrium* spp. (akolea) (J. Lau, pers. comm., 2001; Service 1997; 57 FR 20772; HINHP Database 2000; R. Hobdy *et al.*, pers. comm., 2001).

The threats to this species on Lanai included habitat degradation by feral pigs (Service 1997; 57 FR 20772).

Cyperus trachysanthos (puukaa)

Cyperus trachysanthos, a member of the sedge family (Cyperaceae), is a short-lived perennial grass-like plant with a short rhizome. The culms 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.* Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999).

Historically, *Cyperus trachysanthos* was known on Niihau and Kauai, and from scattered locations on Oahu, Molokai, and Lanai. Currently it is found on Kauai, Niihau and Oahu. It was last observed on Lanai in 1919 (HINHP Database 2000; GDSI 2000).

Cyperus trachysanthos is usually found in seasonally wet sites (mud flats, wet clay soil, or wet cliff seeps) on seepy flats or talus slopes in *Heteropogon contortus* (pili) grassland at elevations between 0 and 46 m (0 and 151 ft). *Hibiscus tiliaceus* (hau) is often found in association with this species (J. Lau, pers. comm., 2001; 61 FR 53108; Koyama 1999; K. Wood, pers. comm., 2001).

On Lanai, the threats to this species included the loss of wetlands (61 FR 53108; Service 1999).

Cyrtandra munroi (haiwale)

Cyrtandra munroi is a short-lived perennial and a member of the African violet family (Gesneriaceae). It is a shrub with opposite, elliptic to almost circular leaves that are sparsely to moderately hairy on the upper surface and covered with velvety, rust-colored hairs underneath. This species is distinguished from other species of the genus by the broad opposite leaves, the length of the flower cluster stalks, the size of the flowers, and the amount of hair on various parts of the plant (Wagner *et* al., 1999).

Some work has been done on the reproductive biology of some species of *Cyrtandra*, but not on *Cyrtandra munroi* specifically. These studies of other members of the genus suggest that a specific pollinator may be necessary for successful pollination. Seed dispersal may be via birds, which eat the fruits. Flowering time, longevity of plants and seeds, specific environmental requirements, and other limiting factors are unknown (Service 1995).

Cyrtandra munroi was historically and is currently known from Lanai and Maui. Currently, on Lanai there are a total of two populations containing 17 individuals on privately owned land in the Kapohaku/Waiapaa area, and in the gulch between Kunoa and Waialala gulches (GDSI 2000; HINHP Database 2000).

The habitat of this species is diverse mesic forest, wet *Metrosideros polymorpha* forest, and mixed mesic *Metrosideros polymorpha* forest, typically on rich, moderately steep gulch slopes at elevations between 667 and 1,016 m (2,188 and 3,332 ft). It occurs on soil and rock substrates on slopes from watercourses in gulch bottoms and up the sides of gulch slopes to near ridgetops. Associated native species include, *Diospyros sandwicensis, Bobea elatior, Myrsine lessertiana, Pipturus albidus, Pittosporum confertiflorum, Pleomele fernaldii, Sadleria cyatheoides, Scaevola chamissoniana, Xylosma hawaiiense, Cyrtandra grayii, Cyrtandra grayana Diplopterygium pinnatum, Hedyotis acuminata* (au), *Clermontia* spp., *Alyxia oliviformis, Coprosma* spp., *Dicranopteris linearis, Freycinetia arborea, Melicope* spp., *Perrottetia sandwicensis, Pouteria sandwicensis*, and *Psychotria* spp. (HINHP Database 2000; Service 1995).

The threats to this species on Lanai are browsing and habitat disturbance by axis deer; competition with the alien plant species *Psidium cattleianum, Myrica faya, Leptospermum scoparium, Pluchea symphytifolia* (sourbush), *Melinis minutiflora* (molasses grass), *Rubus rosifolius* (thimbleberry), and *Paspalum conjugatum* (Hilo grass); depressed reproductive vigor; and loss of appropriate pollinators (Service 1995; 57 FR 20772).

Diellia erecta (NCN)

Diellia erecta, a short-lived perennial fern in the spleenwort family (Aspleniaceae), grows in tufts of three to nine lance-shaped fronds emerging from a rhizome covered with brown to dark gray scales. This species differs from other members of the genus in having large brown or dark gray scales, 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; Wagner 1952).

Little is known about the life history of *Diellia erecta*. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999).

Historically, *Diellia erecta* was known on Kauai, Oahu, Molokai, Lanai, Maui, and the island of Hawaii. Currently, it is known from Molokai, Maui, Oahu, and the island of Hawaii and was recently rediscovered on Kauai. On Lanai it was last seen in 1929 (Service 1999; HINHP Database 2000).

This species is found in brown granular soil with leaf litter and occasional terrestrial moss on north facing slopes in deep shade on steep slopes or gulch bottoms in *Pisonia* spp. forest at elevations between 651 and 955 m (2,135 and 3,132 ft). Associated native plant species include native grasses and ferns (J. Lau, pers. comm., 2001; Service 1999; HINHP Database 2000; K. Wood, pers. comm., 2001).

The major threats to *Diellia erecta* on Lanai included habitat degradation by pigs and goats, and competition with alien plant species (59 FR 56333; Service 1999).

Diplazium molokaiense (asplenium-leaved asplenium)

Diplazium molokaiense, a short-lived perennial member of the spleenwort family (Aspleniaceae), has a short prostrate rhizome and green or straw-colored leaf stalks with thin-textured fronds. This species can be distinguished from other species of *Diplazium* in the Hawaiian Islands by a combination of characteristics, including venation pattern, the length and arrangement of the sori, frond shape, and the degree of dissection of the frond (Wagner and Wagner 1992).

Little is known about the life history of *Diplazium molokaiense*. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1998a).

Historically, *Diplazium molokaiense* was found on Kauai, Oahu, Molokai, Lanai, and Maui. Currently, this species is known only from Maui. It was last seen on Lanai in 1914 (HINHP Database 2000).

This species occurs in shady, damp places in wet forests at elevations between 737 and 1,032 m (2,417 and 3,385 ft) (J. Lau, pers. comm., 2001; Service 1998a; HINHP Database 2000).

The primary threats to *Diplazium molokaiense* on Lanai included habitat degradation by feral goats and pigs and competition with alien plant species (59 FR 49025; Service 1998a; HINHP Database 2000).

Hedyotis mannii (pilo)

Hedyotis mannii is a short-lived perennial and a member of the coffee family (Rubiaceae). It has smooth, usually erect stems 30 to 60 cm (1 to 2 ft) long, which are woody at the base and four-angled or -winged. 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).

Little is known about the life history of this plant. Reproductive cycles, longevity, specific environmental requirements, and limiting factors are unknown (Service 1996b).

Hedyotis mannii was once widely scattered on Lanai, West Maui, and Molokai. After a hiatus of 50 years, this species was rediscovered in 1987 by Steve Perlman on Molokai. In addition, a population was discovered on Maui and two populations, now numbering between 35 and 40 individual plants, were discovered on Lanai in 1991 on privately owned land in Maunalei and Hauola gulches (GDSI 2000; HINHP Database 2000; Service 1996b).

Hedyotis mannii typically grows on dark, narrow, rocky gulch walls and on steep stream banks in wet forests between 711 and 1,032 m (2,332 and 3,385 ft) in elevation. Associated plant species include *Thelypteris sandwicensis, Sadleria* spp., *Cyrtandra grayii, Scaevola chamissoniana, Freycinetia arborea*, and *Carex meyenii* (J. Lau, pers. comm., 2001; HINHP Database 2000; Service 1996b).

The limited number of individuals of *Hedyotis mannii* makes it extremely vulnerable to extinction from random environmental events. Feral pigs and alien plants, such as *Melinis minutiflora, Psidium cattleianum*, and *Rubus rosifolius*, degrade the habitat of this species and contribute to its vulnerability (57 FR 46325).

Hesperomannia arborescens (NCN)

Hesperomannia arborescens, a long-lived perennial 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 characteristics: erect to ascending flower heads, thick flower head stalks, and usually hairless and relatively narrow leaves (Wagner *et al.*, 1999).

This species has been observed in flower from April through June and fruit during March and June. Little else is known about the life history of *Hesperomannia arborescens*. Flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1998b; 59 FR 14482).

Hesperomannia arborescens was formerly known from Lanai, Molokai, and Oahu. This species is now known from Oahu, Molokai, and Maui. It was last seen on Lanai in 1940 (GDSI 2000; HINHP Database 2000; Service 1998b; 59 FR 14482).

Hesperomannia arborescens is found on slopes or ridges in lowland mesic or wet forest at elevations between 737 and 1,032 m (2,417 and 3,385 ft) and containing one or more of the following associated native plant species: *Metrosideros polymorpha, Myrsine sandwicensis* (kolea), *Isachne distichophylla, Pipturus* spp., *Antidesma* spp., *Psychotria* spp., *Clermontia* spp., *Cibotium* spp. (hapuu), *Dicranopteris linearis, Bobea* spp., *Coprosma* spp., *Sadleria* spp., *Melicope* spp., *Machaerina* spp. (uki), *Cheirodendron* spp. (olapa), or *Freycinetia arborea* (HINHP Database 2000; Service 1998b; 59 FR 14482; R. Hobdy *et al.*, pers. comm., 2001).

The major threats to *Hesperomannia arborescens* on Lanai included habitat degradation by feral pigs and goats, and competition with alien plant species (Service 1998b; 59 FR 14482; HINHP Database 2000).

Hibiscus brackenridgei (mao hau hele)

Hibiscus brackenridgei, a short-lived perennial and a 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.

Two subspecies are currently recognized, *H. brackenridgei* ssp. *brackenridgei* and *H. brackenridgei* ssp. *mokuleianus* (Bates 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 1999).

Historically, *Hibiscus brackenridgei* was known from the islands of Kauai, Oahu, Lanai, Maui, Molokai, and the island of Hawaii. *Hibiscus brackenridgei* was collected from an undocumented site on Kahoolawe, though the subspecies has never been determined. Currently, *Hibiscus brackenridgei* ssp. *mokuleianus* is only known from Oahu. *Hibiscus brackenridgei* ssp. *brackenridgei* is currently known from Lanai, Maui, and the island of Hawaii. On Lanai, there are two populations containing an unknown number of individuals on privately owned land; one population is known from Keamuku Road, one from a fenced area on the dry plains of Kaena Point. Outplanted individuals that were initially planted in Kanepuu Preserve now appear to be reproducing naturally (Service 1999; GDSI 2000; HINHP Database 2000; Wesley Wong, Jr., formerly of Hawaii Division of Forestry and Wildlife, *in litt.* 1998).

Hibiscus brackenridgei ssp. *brackenridgei* occurs in lowland dry to mesic forest and shrubland between 0 and 645 m (0 and 2,116 ft) in elevation. Associated plant species include *Dodonea viscosa, Psydrax odoratum, Eurya sandwicensis* (anini), *Isachne distichophylla*, and *Sida fallax* (HINHP Database 2000; Service 1999).

The primary threats to *Hibiscus brackenridgei* ssp. *brackenridgei* on Lanai are habitat degradation; possible predation by pigs, goats, axis deer, and rats (*Rattus rattus*); competition with alien plant species; fire; and susceptibility to extinction caused by naturally occurring events or reduced reproductive vigor (59 FR 56333; Service 1999).

Isodendrion pyrifolium (wahine noho kula)

Isodendrion pyrifolium, a short-lived perennial of the violet family (Violaceae), is a small, branched shrub with elliptic to lance-shaped leaf blades. The papery-textured blade is moderately hairy beneath (at least on the veins) and stalked. The petiole (stalk) is subtended

by oval, hairy stipules. Fragrant, bilaterally symmetrical flowers are solitary. The flower stalk is white-hairy, and subtended by two bracts. Bracts arise at the tip of the main flower stalk. The five sepals are lance-shaped, membranous-edged and fringed with white hairs. Five green-yellow petals are somewhat unequal, and lobed, the upper being the shortest and the lower the longest. The fruit is a three-lobed, oval capsule, which splits to release olive-colored seeds. *Isodendrion pyrifolium* is distinguished from other species 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. Little else is known about the life history of *Isodendrion pyrifolium*. Flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1996a; 59 FR 10305).

Isodendrion pyrifolium was historically found on six of the Hawaiian Islands: Niihau, Molokai, Lanai, Oahu, Maui, and the island of Hawaii. Currently it is found only on the island of Hawaii. It was last seen on Lanai in 1870 (Service 1996a; 59 FR 10305; GDSI 2000; HINHP Database 2000).

On Lanai, *Isodendrion pyrifolium* occured in dry shrubland at elevations between 132 and 574 m (433 and 1,883 ft) with one or more of the following associated native plant species: *Dodonaea viscosa, Lipochaeta* spp. (nehe), *Heteropogon contortus*, and *Wikstroemia oahuensis* (akia) (J. Lau, pers. comm., 2001; Service 1996a; 59 FR 10305; R. Hobdy *et al.*, pers. comm., 2001).

Nothing is known of the threats to *Isodendrion pyrifolium* on the island of Lanai because the species was last seen there in 1870.

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 and 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 more narrow, flattened, and more spreading spikelets (Koyama 1990; 59 FR 10305).

Little is known about the life history of *Mariscus fauriei*. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (USFWS 1996a).

Historically, *Mariscus fauriei* was found on Molokai, Lanai, and the island of Hawaii. It currently occurs on Molokai and the island of Hawaii. It was last seen on Lanai in 1929 (59 FR 10305; HINHP Database 2000; GDSI 2000; Service 1996a).

Nothing is known of the preferred habitat of or native plant species associated with *Mariscus fauriei* on the island of Lanai (Service 1996a).

Nothing is known of the threats to *Mariscus fauriei* on the island of Lanai (Service 1996a).

Melicope munroi (alani)

Melicope munroi, a long-lived perennial of the rue (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 known only from the Lanaihale summit ridge on Lanai. There are two populations totaling an estimated 300 to 800 individuals on privately owned land on the Lanaihale summit, head of Hauola gulch, Waialala gulch, and the ridge of Waialala gulch (HINHP Database 2000; 64 FR 48307; GDSI 2000; Service 2001).

Melicope munroi is typically found on slopes in lowland wet shrublands, at elevations of 701 and 1,032 m (2,299 and 3,385 ft). Associated native plant species include *Diplopterygium pinnatum, Dicranopteris linearis, Metrosideros polymorpha, Cheirodendron trigynum, Coprosma* spp., *Broussaisia arguta*, other *Melicope* spp., and *Machaerina angustifolia* (HINHP Database 2000; Service 2001).

The major threats to *Melicope munroi* on Lanai are trampling, browsing, and habitat degradation by axis deer and competition with the alien plant species *Leptospermum scoparium* and *Psidium cattleianum*. Random environmental events also threaten the two remaining populations (HINHP Database 2000; 64 FR 48307; Service 2001).

Neraudia sericea (NCN)

Neraudia sericea, a short-lived perennial 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. *N. 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).

Little is known about the life history of *Neraudia sericea*. Flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999; 59 FR 56333).

Neraudia sericea was historically found on Molokai, Lanai, Maui, and Kahoolawe. Currently, this species is extant on Molokai and Maui. It was last seen on Lanai in 1913 (GDSI 2000; HINHP Database 2000; Service 1999; 59 FR 56333).

Neraudia sericea generally occurs in gulch slopes or gulch bottoms in dry-mesic or mesic forest at elevations between 693 and 869 m (2,273 and 2,850 ft) and containing one or more of the following associated native plant species: *Metrosideros polymorpha, Diospyros sandwicensis, Nestegis sandwicensis*, and *Dodonaea viscosa* (HINHP Database 2000; 59 FR 56333; J. Lau, pers. comm., 2001).

The primary threats to *Neraudia sericea* on Lanai included habitat degradation by feral pigs and goats, and competition with alien plant species (Service 1999; 59 FR 56333).

Portulaca sclerocarpa (poe)

Portulaca sclerocarpa of the purslane family (Portulacaceae) is a short-lived perennial herb with a fleshy tuberous taproot, which becomes woody and has stems up to about 20 cm (8 in) long. The stalkless, succulent, grayish-green leaves are almost circular in cross-

section. Dense tufts of hairs are located in each leaf axil (point of divergence between a branch or leaf) and underneath the tight clusters of three to six stalkless flowers grouped at the ends of the stems. Sepals (one of the modified leaves comprising a flower calyx) have membranous edges and the petals are white, pink, or pink with a white base. The hardened capsules open very late or not at all, and contain glossy, dark reddish-brown seeds. This species differs from other native and naturalized species of the genus in Hawaii by its woody taproot, its narrow leaves, and the colors of its petals and seeds. Its closest relative, *P. villosa*, differs mainly in its thinner-walled, opening capsule (Wagner *et al.*, 1999).

This species was observed in flower during March 1977, December 1977, and June 1978. The presence of juveniles indicated that pollination and germination were occurring. Pollination vectors, seed dispersal agents, longevity of plants and seeds, specific environmental requirements, and other limiting factors are unknown (Service 1996a).

Portulaca sclerocarpa was historically and is currently found on the island of Hawaii, and on an islet (Poopoo Islet) off the south coast of the island of Lanai. The population on privately owned land on Poopoo Islet contains about 10 plants (HINHP Database 2000; GDSI 2000; Service 1996a). Poopoo Islet is a small rocky outcrop, 1 ha (2.4 ac) in area and approximately 200 m (600 ft) from the south shoreline of Lanai, and is considered part of the island of Lanai.

This species grows on exposed ledges in thin soil in coastal communities at elevations between 0 and 82 m (0 and 269 ft) (Wagner *et al.,* 1999; HINHP Database 2000).

The major threats to *Portulaca sclerocarpa* on Lanai are herbivory (feeding on plants) by the larvae of an introduced sphinx moth (*Hyles lineata*); competition from alien plants; and fire (Frank Howarth, Bishop Museum, *in litt.* 2000; 59 FR 10305; Service 1996a).

Sesbania tomentosa (ohai)

Sesbania tomentosa, a member of the pea family (Fabaceae), is typically a sprawling short-lived perennial 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 color 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 *S. sesban* 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 1999).

Currently, *Sesbania tomentosa* occurs on six of the eight main Hawaiian Islands (Kauai, Oahu, Molokai, Kahoolawe, Maui, and Hawaii) and on two islands in the Northwestern Hawaiian Islands (Nihoa and Necker). Although once found on Niihau and Lanai, it is no longer extant on these islands. It was last seen on Lanai in 1957 (59 FR 56333; HINHP Database 2000; GDSI 2000).

Sesbania tomentosa is found on sandy beaches, dunes, or pond margins at elevations between 44 and 221 m (144 and 725 ft). It commonly occurs in coastal dry shrublands or mixed coastal dry cliffs with the associated native plant species *Chamaesyce celastroides* (akoko), *Cuscuta sandwichiana* (kaunaoa), *Dodonaea viscosa, Heteropogon contortus, Myoporum sandwicense, Nama sandwicensis* (nama), *Scaevola sericea* (naupaka kahakai), *Sida fallax, Sporobolus virginicus* (akiaki), *Vitex rotundifolia* (kolokolo kahakai) or *Waltheria indica* (uhaloa) (Service 1999; HINHP Database 2000; K. Wood, pers. comm., 2001).

The primary threats to *Sesbania tomentosa* on Lanai included habitat degradation caused by competition with various alien plant species; lack of adequate pollination; seed predation by rats, mice (*Mus musculus*) and, potentially, alien insects; and fire (59 FR 56333; Service 1999).

Silene lanceolata (NCN)

Silene lanceolata, a member of the pink family (Caryophyllaceae), is an upright, short-lived perennial plant with stems 15 to 51 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 *Silene alexandri* by its smaller flowers and capsules and its stamens, which are shorter than the sepals (Wagner *et al.*, 1999).

Little is known about the life history of *Silene lanceolata*. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (57 FR 46325; Service 1996b).

The historical range of *Silene lanceolata* includes five Hawaiian Islands: Kauai, Oahu, Molokai, Lanai, and Hawaii. *Silene lanceolata* is presently extant on the islands of Molokai, Oahu, and Hawaii. It was last observed on Lanai in 1930 (57 FR 46325; GDSI 2000; Service 1996b).

Nothing is known of the preferred habitat of or native plant species associated with *Silene lanceolata* on the island of Lanai (Service 1996b).

Nothing is known of the threats to *Silene lanceolata* on the island of Lanai (Service 1996b).

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; Service 1999).

Historically, *Solanum incompletum* was known on 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. It was last seen on Lanai in 1925 (HINHP Database 2000; Service 1999).

On Lanai, *Solanum incompletum* occurred on broad, gently sloping ridges in dry, *Dodonaea viscosa* shrubland, at elevations between 151 and 372 m (495 and 1,220 ft) with one or more of the

following associated native plant species: *Heteropogon contortus, Lipochaeta* spp., and *Wikstroemia oahuensis* (Service 1999; J. Lau pers comm., 2001).

On Lanai, the threats to *Solanum incompletum* included habitat destruction by goats and competition with various alien plants (Service 1999).

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 umbrella-shaped 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 1999).

Historically, *Spermolepis hawaiiensis* was known from Kauai, Oahu, Lanai, and the island of Hawaii. Based on recent collections it is now known to be extant on Kauai, Oahu, Molokai, Lanai, Maui, and the island of Hawaii. On Lanai, this species is known from three populations of 570 to 620 individuals on privately owned land: in the southern edge of Kapoho Gulch, Kamiki Ridge, and approximately 274 m (900 ft) downslope of Puu Manu (59 FR 56333; HINHP Database 2000; R Hobdy, pers. comm., 2000; Service 1999).

Spermolepis hawaiiensis is known from gulch slopes and ridge tops in dry forests dominated by *Diospyros sandwicensis*, or shrublands dominated by *Dodonaea viscosa* at elevations between 402 and 711 m (1,319 and 2,332 ft). Associated native plant species include *Nestegis sandwicensis, Nesoluma polynesicum, Psydrax odorata,* and *Rauvolfia sandwicensis* (J. Lau, pers. comm., 2001; HINHP Database 2000; R. Hobdy, pers. comm., 2000; Service 1999).

The primary threats to *Spermolepis hawaiiensis* on Lanai are habitat degradation by feral goats, competition with various alien plants, such as *Lantana camara*; and erosion, landslides, and rockslides due to natural weathering, which result in the death of individual plants as well as habitat destruction (59 FR 56333; Service 1999; R. Hobdy, pers. comm., 2000; Service 1999).

Tetramolopium lepidotum ssp. lepidotum (NCN)

Tetramolopium lepidotum ssp. *lepidotum*, a member of the aster family (Asteraceae), is an erect shrub 12 to 36 cm (4.7 to 14 in) tall, branching near the ends of the stems. Leaves of this taxon are lance-shaped, wider at the leaf tip, and measure 1.0 to 1.8 in (25 to 45 mm) long and 0.04 to 0.3 in (1 to 7 mm) wide. Flower heads are arranged in groups of six to 12. The involucre is bell-shaped and less than 0.2 in (4 mm) high. Florets are either female or bisexual, with both occurring on the same plant. There are 21 to 40 white to pinkish-lavender ray florets 0.04 to 0.08 in (1 to 2 mm) long on the periphery of each head. In the center of each head there are four to eleven maroon to pale salmon disk florets. The fruits are achenes, 0.06 to 0.1 in (1.6 to 2.5 mm) long and 0.02 to 0.03 in (0.5 to 0.8 mm) wide. This taxon can be distinguished from the other extant species on Oahu by its hermaphroditic disk flowers and its inflorescence of six to 12 heads (Lowrey 1999).

Tetramolopium lepidotum ssp. *lepidotum* is a short-lived perennial that has been observed producing fruit and flowers from April through July. No further information is available on reproductive cycles, longevity, specific environmental requirements, or limiting factors (56 FR 55770; Service 1998b).

Historically, *Tetramolopium lepidotum* ssp. *lepidotum* was known from Oahu and Lanai. It currently occurs only on Oahu. It was last seen on Lanai in 1928 (56 FR 55770; Service 1998b HINHP Database 2000; GDSI 2000; EDA Database 2001).

Nothing is known of the preferred habitat of or native plant species associated with *Tetramolopium lepidotum* ssp. *lepidotum* on the island of Lanai (Service 1998b).

Nothing is known of the threats to *Tetramolopium lepidotum* ssp. *lepidotum* on the island of Lanai (Service 1998b).

Tetramolopium remyi (NCN)

Tetramolopium remyi, a short-lived perennial member of the sunflower family (Asteraceae), is a many branched, decumbent (reclining, with the end ascending) or occasionally erect shrub up to about 38 cm (15 in) tall. Its leaves are firm, very narrow, and with the edges rolled inward when the leaf is mature. There is a single flower head per branch. The heads are each comprised of 70 to 100 yellow disk and 150 to 250 white ray florets. The stems, leaves, flower bracts, and fruit are covered with sticky hairs. *Tetramolopium remyi* has the largest flower heads in the genus. Two other species of the genus are known historically from Lanai, but both have purplish rather than yellow disk florets and from 4 to 60 rather than 1 flower head per branch (Lowrey 1999).

Tetramolopium remyi flowers between April and January. Field observations suggest that the population size of the species can be profoundly affected by variability in annual precipitation; the adult plants may succumb to prolonged drought, but apparently there is a seedbank in the soil that can replenish the population during favorable conditions. Such seed banks are of great importance for arid-dwelling plants to allow populations to persist through adverse conditions. The aridity of the area, possibly coupled with human-induced changes in the habitat and subsequent lack of availability of suitable sites for seedling establishment, may be a factor limiting population growth and expansion. Requirements of this taxon in these areas are not known, but success in greenhouse cultivation of these plants with much higher water availability implies that, although these plants are drought-tolerant, perhaps the dry conditions in which they currently exist are not optimum. Individual plants are probably not long-lived. Pollination is hypothesized to be by butterflies, bees, or flies. Seed dispersal agents, environmental requirements, and other limiting factors are unknown (Lowrey 1986; Service 1995).

Historically, the species was known from Maui and Lanai. Currently, *Tetramolopium remyi* is known only from two populations on Lanai on privately owned land, one near Awalua Road and the other near Awehi Road, with a total of approximately 66 plants (GDSI 2000; HINHP Database 2000).

Tetramolopium remyi is found in red, sandy, loam soil in dry *Dodonea viscosa-Heteropogon contortus* communities at elevations between 65 and 485 m (213 and 1,591 ft). Commonly associated native species include *Bidens mauiensis* (kookoolau), *Waltheria indica, Wikstroemia oahuensis,* and *Lipochaeta lavarum* (nehe) (HINHP Database 2000).

Browsing by deer and mouflon sheep (*Ovis musimon*) and competition from alien species, primarily *Andropogon viginicus* (broomsedge) and *Panicum maximum* (guinea grass), are the main threats to the species on Lanai. Fire is also a potential threat (Service 1995; 56 FR 47686).

Vigna o-wahuensis (NCN)

Vigna o-wahuensis, a member of the legume 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 1 to 4, 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).

Little is known about the life history of *Vigna o-wahuensis.* Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999).

Historically, *Vigna o-wahuensis* was known from Niihau, Oahu, and Maui. Based on recent collections, *Vigna o-wahuensis* is now known to be extant on the islands of Molokai, Maui, Lanai, Kahoolawe, and Hawaii. On Lanai, one population with at least one individual is known from Kanepuu on privately owned land (GDSI 2000; HINHP Database 2000; J. Lau, *in litt.* 2000; Service 1999).

On Lanai, *Vigna o-wahuensis* is found in *Nestegis sandwicensis* or *Diospyros sandwicensis* dry forest at elevations between 98 and 622 m (321 and 2,040 ft) (HINHP Database 2000; J. Lau, pers. comm., 2001; 59 FR 56333).

Threats to *Vigna o-wahuensis* on Lanai include habitat degradation by pigs and axis deer; competition with various alien plant species; fire; and random naturally occurring events causing extinction and or reduced reproductive vigor of the only remaining individual on Lanai (Service 1999).

Zanthoxylum hawaiiense (ae)

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

Little is known about the life history of *Zanthoxylum hawaiiense.* Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1996a).

Historically, *Zanthoxylum hawaiiense* was known from five islands: Kauai, Molokai, Lanai, Maui, and the island of Hawaii. Currently, *Zanthoxylum hawaiiense* is found on Kauai, Molokai, Maui, and the island of Hawaii. It was last seen on Lanai in 1947 (HINHP Database 2000; GDSI 2000).

Nothing is known of the preferred habitat of or native plant species associated with *Zanthoxylum hawaiiense* on the island of Lanai (Service 1996a).

Nothing is known of the threats to *Zanthoxylum hawaiiense* on the island of Lanai (Service 1996a).

A summary of populations and landownership for the 37 plant species reported from the island of Lanai is given in Table 3.

TABLE 3.—SUMMARY OF EXISTING POPULATIONS OCCURRING ON LANAI, AND LANDOWNERSHIP FOR 37 SPECIES REPORTED FROM LANAI

Species	Number of current populations	Landownership		
		Federal	State	Private
Abutilon eremitopetalum	1			X
Adenophorus periens	0			
Bidens micrantha	0			
Bonamia menziesii	3			X
Brighamia rockii	0			
Cenchrus agrimonioides	0			
Centaurium sebaeoides	1			X
Clermontia oblongifolia ssp. *mauiensis*	1			X
Ctenitis squamigera	2			X
Cyanea grimesiana ssp. *grimesiana*	2			X
Cyanea lobata	0			
Cyanea macrostegia ssp. *gibsonii*	2			X
Cyperus trachysanthos	0			
Cyrtandra munroi	2			X
Diellia erecta	0			
Diplazium molokaiense	0			
Gahnia lanaiensis	1			X
Hedyotis mannii	2			X
Hedyotis schlechtendahliana var. *remyi*	2			X
Hesperomannia arborescens	0			
Hibiscus brackenridgei	2			X
Isodendrion pyrifolium	0			
Labordia tinifolia var. *lanaiensis*	1			X
Mariscus fauriei	0			
Melicope munroi	2			X
Neraudia sericea	0			
Phyllostegia glabra var. *lanaiensis*	0			
Portulaca sclerocarpa	1			X
Sesbania tomentosa	0			
Silene lanceolata	0			
Solanum incompletum	0			
Spermolepis hawaiiensis	3			X

TABLE 3.—SUMMARY OF EXISTING POPULATIONS OCCURRING ON LANAI, AND LANDOWNERSHIP FOR 37 SPECIES REPORTED FROM LANAI—Continued

Species	Number of current populations	Landownership		
		Federal	State	Private
Tetramolopium lepidotum ssp. *lepidotum*	0	.....	.....	.....
Tetramolopium remyi	2	.....	.....	X
Vigna o-wahuensis	1	.....	.....	X
Viola lanaiensis	2	.....	.....	X
Zanthoxylum hawaiiense	0	.....	.....	.....

Previous Federal Action

Federal action on these plants began as a result of section 12 of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*), 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, *Bonamia menziesii, Brighamia rockii, Cyanea lobata* (as *Cyanea baldwinii*), *Gahnia lanaiensis, Hedyotis mannii* (as *Hedyotis thyrsoidea* var. *thyrsoidea*), *Hesperomannia arborescens* (as *Hesperomannia arborescens* var. *bushiana* and var. *swezeyi*), *Hibiscus brackenridgei* (as *Hibiscus brackenridgei* var. *brackenridgei,* var. *mokuleianus,* and var. ''from Hawaii''), *Neraudia sericea* (as *Neraudia kahoolawensis*), *Portulaca sclerocarpa, Sesbania tomentosa* (as *Sesbania hobdyi* and *Sesbania tomentosa* var. *tomentosa*), *Silene lanceolata, Solanum incompletum* (as *Solanum haleakalense* and *Solanum incompletum* var. *glabratum,* var. *incompletum,* and var. *mauiensis*), *Tetramolopium lepidotum* ssp. *lepidotum, Vigna o-wahuensis* (as *Vigna sandwicensis* var. *heterophylla* and var. *sandwicensis*), *Viola lanaiensis,* and *Zanthoxylum hawaiiense* (as *Zanthoxylum hawaiiense* var. *citiodora*) were considered endangered; *Cyrtandra munroi, Diellia erecta, Labordia tinifolia* var. *lanaiensis,* and *Zanthoxylum hawaiiense* (as *Zanthoxylum hawaiiense* var. *hawaiiense* and var. *velutinosum*) were considered threatened; and, *Abutilon eremitopetalum, Bidens micrantha* ssp. *kalealaha* (as *Bidens distans* and *Bidens micrantha* spp. *kalealaha*), *Ctenitis squamigera, Cyanea macrostegia* ssp. *gibsonii, Diplazium molokaiense, Isodendrion pyrifolium, Melicope munroi* (as *Pelea munroi*), *Phyllostegia glabra* var. *lanaiensis,* and *Tetramolopium remyi* were considered to be extinct. On July 1, 1975, we 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 *Cyrtandra munroi, Labordia tinifolia* var. *lanaiensis,* 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 (40 FR 27823).

General comments received in response to the 1976 proposal were 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 37 plant species in the 1980 through 1996 notices of review can be found in Table 4(a). We listed the 37 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 37 PLANT SPECIES ON LANAI

Species	FEDERAL REGISTER Notice of Review				
	12/15/80	9/27/85	2/20/90	9/30/93	2/28/96
Abutilon eremitopetalum	C1	C1	C1	.....	.....
Adenophorus periens	C1	C1	C1	.....	.....
Bidens micrantha	C1	C1	C1	.....	.....
Bonamia menziesii	C1	C1	C1	.....	.....
Brighamia rockii	C1	C1	C1	.....	.....
Cenchrus agrimonioides	.....	.....	.....	.....	.....
Centaurium sebaeoides	.....	.....	C1	.....	.....
Clermontia oblongifolia ssp. *mauiensis*	.....	.....	C1	.....	.....
Ctenitis squamigera	C1*	C1*	C1*	.....	.....
Cyanea grimesiana ssp.*grimesiana*	C1	C1	.....	C2	.....
Cyanea lobata	C1	C1	C1	.....	.....
Cyanea macrostegia ssp. *gibsonii*	C1	C1	C1	.....	.....
Cyperus trachysanthos	.....	.....	.....	C2	.....
Cyrtandra munroi	C2	C2	C1	.....	.....
Diellia erecta	C1	C1	C1	.....	.....

TABLE 4(A).—SUMMARY OF CANDIDACY STATUS FOR 37 PLANT SPECIES ON LANAI—Continued

Species	FEDERAL REGISTER Notice of Review				
	12/15/80	9/27/85	2/20/90	9/30/93	2/28/96
Diplazium molokaiense	C1*	C1*	C1	.....	.....
Gahnia lanaiensis	C1	C1	C1	.....	.....
Hedyotis mannii	C1*	C1*	C1	.....	.....
Hedyotis schlechtendahliana var. *remyi*	.....	.....	C2	C2	C
Hesperomannia arborescens	C1	C1	C1	.....	.....
Hibiscus brackenridgei	C1	C1	C1	.....	.....
Isodendrion pyrifolium	C1*	C1*	3A	.....	.....
Labordia tinifolia var. *lanaiensis*	C2	C2	3C	3C	.....
Mariscus fauriei	.....	.....	C1	.....	.....
Melicope munroi	C1*	C1*	C2	C2	C
Neraudia sericea	3A	3A	C1	.....	.....
Phyllostegia glabra var. *lanaiensis*	C1	C1	C1	.....	.....
Portulaca sclerocarpa	C1	C1	C1	.....	.....
Sesbania tomentosa	C1*	C1*	C1	.....	.....
Silene lanceolata	C1	C1	C1	.....	.....
Solanum incompletum	C1*	C1*	C1	.....	.....
Spermolepis hawaiiensis	.....	.....	C1	.....	.....
Tetramolopium lepidotum ssp. *lepidotum*	C1	C1	C1	.....	.....
Tetramolopium remyi	C1	C1	C1	.....	.....
Vigna o-wahuensis	C1	C1	C1	.....	.....
Viola lanaiensis	C1	C1	C1	.....	.....
Zanthoxylum hawaiiense	C1	C1	C1	.....	.....

Key:

C: 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 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.

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 previously believed and/or those that are not subject to any identifiable threat. If further research or changes in habitat indicate a significant decline in any of these taxa, they may be reevaluated for possible inclusion in categories C1 or C2.

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 37 PLANT SPECIES FROM LANAI

Species	Federal status	Proposed rule		Final rule		Purdency and/or proposed critical habitat	
		Date	Federal Register	Date	Federal Register	Date	Federal Register
Abutilon eremitopetalum	E	09/17.90	55 FR 38236	09/20/91	56 FR 47686	12/27/00	65 FR 82086
Adenophorus periens	E	09/14/93	58 FR 48102	11/10/94	59 FR 56333	11/07/00	65 FR 66808
						12/29/00	65 FR 83157
Bidens micrantha ssp. *kalealaha*	E	05/24/91	56 FR 23842	05/15/92	57 FR 20772	12/18/00	65 FR 79192
Bonamia menziesii	E	09/14/93	58 FR 48012	11/10/94	59 FR 56333	11/7/00	65 FR 66808
						12/18/00	65 FR 79192
						12/27/00	65 FR 82086
						01/28/02	67 FR 3940
Brighamia rockii	E	09/20/91	56 FR 47718	10/08/92	57 FR 46325	12/29/00	65 FR 83157
Cenchrus agrimonioides	E	10/02/95	60 FR 51417	10/10/96	61 FR 53108	12/18/00	65 FR 79192
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 83157
						01/28/02	67 FR 3940
Clermontia oblongifolia ssp. *mauiensis*.	E	05/24/91	56 FR 23842	05/15/92	57 FR 20772	12/18/00	65 FR 79192
						12/27/00	65 FR 82086
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 8315
Cyanea grimesiana ssp. *grimesiana*.	E	10/02/95	60 FR 51417	10/10/96	64 FR 53108	12/18/00	65 FR 79192
						12/27/00	65 FR 82086
						12/29/00	65 FR 8315
Cyanea lobata	E	05/24/91	56 FR 23842	05/15/92	57 FR 20772	12/18/00	65 FR 79192
Cyanea macrostegia ssp. *gilsonii*.	E	09/17/90	55 FR 38236	09/20/91	56 FR 47686	12/27/00	65 FR 82086
Cyperus trachysanthos	E	10/02/95	60 FR 51417	10/10/96	61 FR 53108	11/07/0	65 FR 66808
						01/28/02	67 FR 3940

TABLE 4(B).—SUMMARY OF LISTING ACTIONS FOR 37 PLANT SPECIES FROM LANAI—Continued

Species	Federal status	Proposed rule		Final rule		Purdency and/or proposed critical habitat	
		Date	Federal Register	Date	Federal Register	Date	Federal Register
Cyrtandra munroi	E	05/24/91	56 FR 23842	05/15/92	57 FR 20772	12/18/00	65 FR 79192
						12/27/00	65 FR 82086
Diellia erecta	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 83157
						01/28/02	67 FR 3940
Diplazium molokaiense	E	06/24/93	58 FR 34231	09/09/94	59 FR 49025	12/18/00	65 FR 79192
Gahnia lanaiensis	E	09/17/90	55 FR 38236	09/20/91	56 FR 47686	12/27/00	65 FR 82086
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 83157
Hedyotis schlechtendahliana var. *remyi*.	E	05/15/97	62 FR 26757	09/03/99	64 FR 48307	12/27/00	65 FR 82086
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 83157
Hibiscus brackenridgei	E	09/14/93	58 FR 48012	11/10/94	59 FR 56333	12/18/00	65 FR 79192
Isodendrion pyrifolium	E	12/17/92	57 FR 59951	03/04/94	59 FR 10305	01/28/02	67 FR 3940
Labordia tinifolia var. *lanaiensis*	E	05/15/97	62 FR 26757	09/03/99	64 FR 48307	12/27/00	65 FR 82086
Mariscus fauriei	E	12/17/92	57 FR 59951	03/04/94	59 FR 10305	12/29/00	65 FR 83157
Melicope munroi	E	05/15/97	62 FR 26757	09/03/99	64 FR 48307	12/27/00	65 FR 82086
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 83157
Phyllostegia glabra var. *lanaiensis*.	E	09/17/90	55 FR 38236	09/20/91	56 FR 47686	12/29/00	65 FR 83157
Portulaca sclerocarpa	E	12/17/92	57 FR 59951	03/04/94	59 FR 10305	12/27/00	65 FR 82086
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 83157
						01/28/02	67 FR 3940
Silene lanceolata	E	09/20/91	56 FR 47718	10/08/92	57 FR 46325	12/29/00	65 FR 83157
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 83157
						12/28/00	67 FR 3940
Tetramolopium lepidotum ssp. *lepidotum*.	E	09/28/90	55 FR 39664	10/29/91	56 FR 55770		
Tetramolopium remyi	E	09/17/90	55 FR 38236	09/20/91	56 FR 47686	12/27/00	65 FR 82086
Vigna o-wahuensis	E	09/14/93	58 FR 48012	11/10/94	59 FR 56333	12/18/00	65 FR 79192
						12/29/00	65 FR 83157
Viola lanaiensis	E	09/17/90	55 FR 38236	09/20/91	56 FR 47686	12/27/00	65 FR 82086
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 83157
						12/28/00	67 FR 3940
						01/28/02	

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 three of these plants (*Hedyotis schlechtendahliana* var. *remyi*, *Labordia tinifolia* var. *lanaiensis*, and *Melicope munroi*) and not prudent for the other 34 plants because it would not benefit the plant or would increase the degree of threat to the species.

The not prudent determinations for these 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 34 of the 37 species reported from Lanai. 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 (*Conservation Council for Hawaii* v. *Babbitt*, 24 F. Supp. 2d 1074 (D. Haw. 1998)).

At the time we listed *Hedyotis schlechtendahliana* var. *remyi*, *Labordia tinifolia* var. *lanaiensis*, 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 three taxa, along with seven others, by the time we completed designations for the other 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 with the first 100 plants from the group of 245 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 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 would 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.

In early February 2000, we hand-delivered a letter to representatives of the private landowner on Lanai requesting any information considered germane to the management of any of the 37 plants on the island, and containing a copy of the November 30, 1998, **Federal Register** notice, a map showing the general locations of the plants on Lanai, and a handout containing general information on critical habitat. On April 4, 2000, we met with representatives of the landowner to discuss their current land management activities. In addition, we met with Maui County DOFAW staff and discussed their management activities on Lanai.

On December 27, 2000, we published the third of the court-ordered prudency determinations and proposed critical habitat designations or non-designations for 18 Lanai plants (65 FR 82086). 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 79192), and for Molokai plants on December 29, 2000 (65 FR 83158). 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 33 species (*Abutilon eremitopetalum*, *Adenophorus periens*, *Bidens micrantha* ssp. *kalealaha*, *Bonamia menziesii*, *Brighamia rockii*, *Cenchrus agrimonioides*, *Centaurium sebaeoides*, *Clermontia oblongifolia* ssp. *mauiensis*, *Ctenitis squamigera*, *Cyanea grimesiana* ssp. *grimesiana*, *Cyanea lobata*, *Cyanea macrostegia* ssp. *gibsonii*, *Cyperus trachysanthos*, *Cyrtandra munroi*, *Diellia erecta*, *Diplazium molokaiense*, *Gahnia lanaiensis*, *Hedyotis mannii*, *Hedyotis schlechtendahliana* var. *remyi*, *Hesperomannia arborescens*, *Hibiscus brackenridgei*, *Labordia tinifolia* var. *lanaiensis*, *Mariscus fauriei*, *Melicope munroi*, *Neraudia sericea*, *Portulaca sclerocarpa*, *Sesbania tomentosa*, *Silene lanceolata*, *Spermolepis hawaiiensis*, *Tetramolopium remyi*, *Vigna o-wahuensis*, *Viola lanaiensis*, and *Zanthoxylum hawaiiense*) that are reported from Lanai as well as on Kauai, Niihau, Maui, Kahoolawe, and Molokai.

In the December 27, 2000, proposal we determined that it was prudent to designate approximately 1,953 ha (4,826 ac) on Lanai as critical habitat. The publication of the proposed rule opened a 60-day public comment period, which closed on February 26, 2001. On February 22, 2001, we published a notice (66 FR 11133) announcing the reopening of the comment period until April 2, 2001, on the proposal to designate critical habitat for plants from Lanai and a notice of a public hearing. On March 22, 2001, we held a public hearing at the Lanai Public Library Meeting Room, Lanai. On April 6, 2001, we published a notice (66 FR 18223) announcing corrections to the proposed rule. These corrections included changes to the map of general locations of units and new UTM coordinates and increased the total proposed critical habitat to 2,034 ha (5,027 ac).

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, in the Kauai revised proposal, we determined that designation of critical habitat was prudent for *Isodendrion pyrifolium* and *Solanum incompletum*, two species reported from Lanai as well as Kauai, Maui, and Molokai. The designation of critical habitat is proposed for both of these species on Lanai. Publication of this revised proposal for plants from Lanai is consistent with the court-ordered stipulation.

Summary of Comments and Recommendations

In the December 27, 2000, proposed rule (65 FR 82086), 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 26, 2001. We reopened the comment period from February 22, 2001, to April 2, 2001 (66 FR 11133), to accept comments on the proposed designations and to hold a public hearing on March 22, 2001, in Lanai City, Lanai.

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* on January 8, 2001, and the *Maui News* on January 4, 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* and in the *Maui News* newspapers on March 2, 2001. A transcript of the hearing held in Lanai City, Lanai on March 22, 2001, is available for inspection (see **ADDRESSES** section).

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

We received a total of two oral comments, three written comments, and two comments both in written and oral form during the two comment periods. These included responses from one State office, and six private organizations or individuals. We reviewed all comments received for substantive issues and new information regarding critical habitat and the Lanai plants. Of the seven comments we received, five supported designation, one was opposed and one provided information and declined to oppose or support the designation. Similar comments were grouped into eight 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 for these plant species 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 conservation of these species.

Our Response: We agree. Our recovery plans for these species (Service 1995, 1996a, 1996b, 1997, 1998a, 1998b, 1999, 2001) identify the need to expand existing populations and reestablish wild populations within their historical range. We have revised the December 27, 2000, proposal to include areas of unoccupied habitat for some of the species from Lanai.

(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 old or older.

Our Response: When developing the December 27, 2000, proposal to designate critical habitat for 18 plants from Lanai, 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; 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 Lanai; discussions with botanical experts; and recommendations from the Hawaii Pacific Plant Recovery Coordinating Committee (HPPRCC) (Service 1995, 1996a, 1996b, 1997, 1998a, 1998b, 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 Geographic Information System (GIS) coverages (*e.g.*, vegetation, soils, annual rainfall, elevation contours, land ownership), and information received during the public comment periods and the public hearing (R. Hobdy, *in litt.* 2001; Service 1995, 1996a, 1996b, 1997, 1998a, 1998b, 1999, 2001).

(3) *Comment*: The proposed critical habitat designations should be delayed until a coordinated plan with public input is coordinated.

Our Response: We must comply with the orders of the Federal courts. As stated earlier, 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). On March 28, 2000, the Court ordered us to integrate 10 Maui Nui (Maui, Lanai, Molokai, and Kahoolawe) plant taxa into the schedule for designating critical habitat for the other 245 Hawaiian plants.

On December 27, 2000, we published the third of the court-ordered prudency determinations and/or proposed critical habitat designations, for 18 Lanai plants (65 FR 82086). On October 5, 2001, the 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), Molokai (October 16, 2002) was approved and ordered by the court.

Publication of this revised proposed critical habitat designations for Lanai plants is consistent with the court-ordered stipulation.

Issue 2: Site-specific Biological Comments

(4) *Comment*: Critical habitat should be designated for *Phyllostegia glabra* var. *lanaiensis* because habitats have not been adequately surveyed and this species may still be extant in the wild.

Our Response: No change is made here to the prudency determination for

Phyllostegia glabra var. *lanaiensis*, a species known only from Kaiholena on Lanai, published in the December 27, 2000, proposal (65 FR 82086). *Phyllostegia glabra* var. *lanaiensis* has not been seen on Lanai for over 80 years. This species was last observed at Kaiholena on Lanai in 1914 and has not been observed since. A report of this plant from the early 1980s probably was erroneous and should be referred to as *Phyllostegia glabra* var. *glabra* (R. Hobdy, pers. comm., 1992). In addition, this species is not known to be in storage or under propagation. Given these circumstances, we determined that designation of critical habitat for *Phyllostegia glabra* var. *lanaiensis* was not prudent because such designation would be of no benefit to this species. If this species is rediscovered we may revise this proposal to incorporate or address new information as new data becomes available (See 16 U.S.C. 1532 (5) (B); 50 CFR 424.13(f)).

Issue 3: Legal Issues

(5) *Comment*: The Service failed to comply with court deadlines set forth in both *Conservation Council for Hawaii* v. *Babbitt*, 24 F. Supp. 1074 (D.Haw. 1998), and *Conservation Council for Hawaii* v. *Babbitt*, Civ. No. 99–00283 (D.Haw. Mar. 28, 2000).

Our Response: The proposed rules for plants from Kauai, Niihau, Maui, Kahoolawe, Lanai, and Molokai were 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 27, 2000, proposal for plants from Lanai. The joint stipulation was approved and ordered by the court on October 5, 2001. Publication of this revised proposal for plants from Lanai is consistent with the joint stipulation.

(6) *Comment:* The Service should designate critical habitat on the Kanepuu 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 Kanepuu Preserve receive long-term protection and management and, thus these lands are not in need of special management considerations or protection. In our December 27, 2000, proposal we determined that the lands within the Kanepuu 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. Should the status of this preserve change, for example by non-renewal of a partnership agreement or termination of funding, we will reconsider whether the lands within Kanepuu Preserve meet the definition of critical habitat. If so, we have the authority to propose to amend critical habitat to include such area at that time 50 CFR 424.12(g).

Issue 4: Mapping and Primary Constituent Elements

(7a) *Comment:* The designated areas are too large. (7b) *Comment:* The units are not large enough, and don't allow for changes that occur during known environmental processes. (7c) *Comment:* Make units B, C, D, E, F, H, I , and J smaller. (7d) *Comment:* The highly irregular and fragmented shape of proposed units make it difficult to determine if projects are within critical habitat.

Our Response: We have revised the proposed designations published in the December 27, 2000, proposal for Lanai plants to incorporate new information, and address comments and new information received during the comment periods. Areas that contain habitat necessary for the conservation of the species 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). The areas we are proposing to designate as critical habitat provide some or all of the habitat components essential for the conservation of 32 plant species from Lanai.

Issue 5: Effects of Designation

(8) *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 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 and includes funds distributed by the Service 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 are implemented consistent with this need.

(9) *Comment:* Critical habitat could be the first step toward making the area a national park or refuge.

Our Response: Critical habitat designation does not in any way create a wilderness area, preserve, national park, or wildlife refuge, nor does it close an area to human access or use. Its regulatory implications apply only to activities sponsored at least in part by Federal agencies. Land uses such as logging, grazing, and recreation that may require Federal permits may take place if they do not adversely modify critical habitat. Critical habitat designations do not constitute land management plans.

Summary of Changes From the Previous Proposal

We originally determined that designation of critical habitat was prudent for six plants (*Abutilon eremitopetalum, Cyanea macrostegia* ssp. *gibsonii, Gahnia lanaiensis, Portulaca sclerocarpa, Tetramolopium remyi,* and *Viola lanaiensis*) from the

island of Lanai on December 27, 2000. In proposals published on November 7, 2000, and December 18, 2000, we determined that designation of critical habitat was prudent for ten plants that are reported from Lanai as well as from Kauai and Niihau, and Maui and Kahoolawe. These ten plants are: *Bonamia menziesii, Centarium sebaeoides, Clermontia oblongifolia* ssp. *mauiensis, Ctenitis squamigera, Cyanea grimesiana* ssp. *grimesiana, Cyrtandra munroi, Hedyotis mannii* (we incorrectly determined prudency for this species in the December 27, 2000, proposal as well), *Hibiscus brackenridgei, Spermolepis hawaiiensis,* and *Vigna o-wahuensis.* In addition, at the time we listed *Hedyotis schlechtendahliana* var. *remyi, Labordia tinifolia* var. *lanaiensis,* and *Melicope munroi,* on September 3, 1999, we determined that the designation of critical habitat was prudent for these three taxa from Lanai. No change is made to these 19 prudency determinations in this revised proposal and they are hereby incorporated by reference (64 FR 48307, 65 FR 82086, 65 FR 66808, 65 FR 79192).

In the December 27, 2000, proposal we determined that critical habitat was not prudent for *Phyllostegia glabra* var. *lanaiensis,* a species endemic to Lanai, because it had not been seen since 1914 and no viable genetic material of this species is known to exist. No change is made here to the December 27, 2000, prudency determination for *Phyllostegia glabra* var. *lanaiensis* and it is hereby incorporated by reference (65 FR 82086).

In the December 27, 2000, proposal we proposed designation of critical habitat for 18 plants from the island of Lanai. These species are: *Abutilon eremitopetalum, Bonamia menziesii, Centaurium sebaeoides, Clermontia oblongifolia* ssp. *mauiensis, Ctenitis squamigera, Cyanea grimesiana* ssp. *grimesiana, Cyanea macrostegia* ssp. *gibsonii, Cyrtandra munroi, Gahnia lanaiensis, Hedyotis mannii, Hedyotis schlechtendahliana* var. *remyi, Hibiscus brackenridgei, Labordia tinifolia* var. *lanaiensis, Melicope munroi, Portulaca sclerocarpa, Spermolepis hawaiiensis, Tetramolopium remyi,* and *Viola lanaiensis.* In this proposal, we have revised the proposed designations for these 18 plants based on new information received during the comment periods. In addition, we incorporate new information, and address comments and new information received during the comment periods on the December 27, 2000, proposal.

In the December 27, 2000, proposal, we did not propose designation of critical habitat on Lanai for 17 species that no longer occur on Lanai but are reported from one or more other islands. We determined that critical habitat was prudent for 16 of these species (*Adenophorus periens, Bidens micrantha* ssp. *kalealaha, Brighamia rockii, Cenchrus agrimonioides, Cyanea lobata, Cyperus trachysanthos, Diellia erecta, Diplazium molokaiense, Hesperomannia arborescens, Isodendrion pyrifolium, Mariscus faurei, Neraudia sericea, Sesbania tomentosa, Silene lanceolata, Solanum incompletum,* and *Zanthoxylum hawaiiense*) in other proposed rules published on November 7, 2000 (65 FR 66808), December 18, 2000 (65 FR 79192), December 29, 2000 (65 FR 83157), and January 28, 2002 (67 FR 3940). In this proposal we incorporate the prudency determinations for these 16 species and propose designation of critical habitat for *Adenophorus periens, Bidens micrantha* ssp. *kalealaha, Brighamia rockii, Cenchrus agrimonioides, Cyanea lobata, Cyperus trachysanthos, Diellia erecta, Diplazium molokaiense, Hesperomannia arborescens, Isodendrion pyrifolium, Neraudia sericea, Sesbania tomentosa,* and *Solanum incompletum* on the island of Lanai, based on new information and information received during the comment periods on the December 27, 2000, proposal. Critical habitat is not proposed on Lanai for *Mariscus faurei, Silene lanceolata,* and *Zanthoxylum hawaiiense* because they no longer occur on Lanai and we are unable to identify habitat which is essential to their conservation on this island.

In this proposal, we determine that critical habitat is prudent for *Tetramolopium lepidotum* ssp. *lepidotum* for which a prudency determination has not been made previously, and that no longer occurs on Lanai but is reported from one other island (Oahu). However, critical habitat for this species is not included in this proposal because it no longer occurs on Lanai and we are unable to identify habitat which is essential to its conservation on this island.

Based on a review of new biological information and public comments received we have revised our December 27, 2000, proposal to incorporate the following additional changes: 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, such as Hawaiilanui Gulch within unit Lanai C and Paliamano Gulch within unit Lanai F, that are essential for the conservation of one or more of the 32 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 be ''essential to the conservation of the species.'' Critical habitat designations identify, to the extent known and using the best scientific and commercial data available, habitat areas that 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 of the Act 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) of the Act 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 six plants (*Abutilon eremitopetalum, Cyanea macrostegia* ssp. *gibsonii, Gahnia lanaiensis, Portulaca sclerocarpa, Tetramolopium remyi,* and *Viola lanaiensis*) from the island of Lanai on December 27, 2000. In proposals published on November 7, 2000, and December 18, 2000, we determined that designation of critical habitat was prudent for ten plants that are reported from Lanai as well as from Kauai and Niihau, and Maui and Kahoolawe. These ten plants are: *Bonamia menziesii, Centarium sebaeoides, Clermontia oblongifolia* ssp. *mauiensis, Ctenitis squamigera, Cyanea grimesiana* ssp. *grimesiana, Cyrtandra munroi, Hedyotis mannii, Hibiscus brackenridgei, Spermolepis hawaiiensis,* and *Vigna o-wahuensis.* In addition, at the time we listed *Hedyotis schlechtendahliana* var. *remyi, Labordia tinifolia* var. *lanaiensis,* and *Melicope munroi,* on September 3, 1999, we determined that the designation of critical habitat was prudent for these three taxa from Lanai. No change is made to these 19 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).

No change is made here to the prudency determination for *Phyllostegia glabra* var. *lanaiensis,* a species known only from Lanai, published in the December 27, 2000, proposal and hereby incorporated by reference (65 FR 82086). *Phyllostegia glabra* var. *lanaiensis* has not been seen on Lanai since 1914. In addition, this plant is not known to be in storage or under propagation. Given these circumstances, we determined that designation of critical habitat for *Phyllostegia glabra* var. *lanaiensis* was not prudent because such designation would be of no benefit to this taxon. If this species is rediscovered we may revise this proposal to incorporate or address new information as new data becomes available (See 16 U.S.C. 1532 (5) (B); 50 CFR 424.13(f)).

In the December 27, 2000, proposal, we did not determine prudency nor propose designation of critical habitat for 17 species that no longer occur on Lanai but are reported from one or more other islands. We determined that critical habitat was prudent for 16 of these species (*Adenophorus periens, Bidens micrantha* ssp. *kalealaha, Brighamia rockii, Cenchrus agrimonioides, Cyanea lobata, Cyperus trachysanthos, Diellia erecta, Diplazium molokaiense, Hesperomannia arborescens, Isodendrion pyrifolium, Mariscus fauriei, Neraudia sericea, Sesbania tomentosa, Silene lanceolata, Solanum incompletum,* and *Zanthoxylum hawaiiense*) in other proposed rules published on November 7, 2000 (Kauai and Niihau), December 18, 2000 (Maui and Kahoolawe), December 29, 2000 (Molokai), and January 28, 2002 (Kauai reproposal). No change is made to these prudency determinations for these 16 species in this proposal and they are hereby incorporated by reference (65 FR 66808, 65 FR 79192, 65 FR 83158, 65 FR 83157, 67 FR 3940). Critical habitat is not proposed for *Mariscus faurei, Silene lanceolata,* and *Zanthoxylum hawaiiense* on the island of Lanai because we are unable to identify habitat which is essential to their conservation on this island.

To determine whether critical habitat would be prudent for *Tetramolopium lepidotum* spp. *lepidotum,* a species for which a prudency determination has not been made previously, and that no longer occurs on Lanai 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 an endangered species under the Endangered Species Act of 1973, as amended (Act) in 1991. At that time, we determined that designation of critical habitat for *Tetramolopium lepidotum* spp. *lepidotum* was not prudent because

designation would increase the degree of threat to this 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 this species or of similar species. Consequently, while we remain concerned that these activities could potentially threaten *T. lepidotum* ssp. *lepidotum* 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 *T. lepidotum* ssp. *lepidotum* 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. *Tetramolopium lepidotum* ssp. *lepidotum* is reported from Federal lands on Oahu (the U.S. Army's Schofield Barracks Military Reservation) 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 *T. lepidotum* ssp. *lepidotum* 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. 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 *Tetramolopium lepidotum* ssp. *lepidotum.*

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 *Abutilon eremitopetalum, Adenophorus periens, Bidens micrantha ssp. kalealaha, Bonamia menziesii, Brighamia rockii, Cenchrus agrimonioides, Centaurium sebaeoides, Clermontia oblongifolia ssp. mauiensis, Ctenitis squamigera, Cyanea grimesiana ssp. grimesiana, Cyanea lobata, Cyanea macrostegia ssp. gibsonii, Cyperus trachysanthos, Cyrtandra munroi, Diellia erecta, Diplazium molokaiense, Gahnia lanaiensis, Hedyotis mannii, Hedyotis schlechtendahliana var. remyi, Hesperomannia arborescens, Hibiscus brackenridgei, Isodendrion pyrifolium, Labordia tinifolia var. lanaiensis, Mariscus fauriei, Melicope munroi, Neraudia sericea, Portulaca sclerocarpa, Sesbania tomentosa, Silene lanceolata, Solanum incompletum, Spermolepis hawaiiensis, Tetramolopium lepidotum ssp. lepidotum, Tetramolopium remyi, Vigna o-wahuensis, Viola lanaiensis, 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 36 species; the December 27, 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 Lanai; discussions with botanical experts; and recommendations from the HPPRCC (see also the discussion below) (Service 1995, 1996a, 1996b, 1997, 1998a, 1998b, 1999, 2001; HPPRCC 1998; HINHP Database 2000, CPC *in litt.* 1999; 65 FR 82086; GDSI 2000).

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 1999). 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. Much 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 32 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.

In the December 27, 2000, proposal we identified the physical and biological features that are considered essential to the conservation of the 19 species on the island of Lanai (65 FR 82086). Based on new information and information received during the comment periods on the December 27, 2000, proposal we have revised our description of these physical and biological features in this proposal.

In the December 27, 2000, proposal we did not propose designation of critical habitat for the 16 species that no longer occur on Lanai but are reported from one or more other islands and for which we had determined, in other rules, that designation of critical habitat was prudent. Based on new information and information received during the comment periods on the December 27, 2000, proposal, we have identified the physical and biological features on Lanai that are considered essential to the conservation of 13 of the 16 species. We are unable to identify these features for *Mariscus faurei, Silene lanceolata,* and *Zanthoxylum hawaiiense,* which no longer occur on the island of Lanai, because information on the physical and biological features (i.e., the primary constituent elements) that are considered essential to the conservation of these three species on Lanai is not known. *Mariscus faurei* and *Silene lanceolata* have not been observed on Lanai since 1930 while *Zanthoxylum hawaiiense* has not been observed on Lanai since 1947, and we are not able to identify the primary constituent elements that are considered essential to their conservation on Lanai from the historical records. 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 these species on the island of Lanai. However, proposed critical habitat designations for *Mariscus fauriei, Silene lanceolata,* and *Zanthoxylum hawaiiense* were included in proposals published on November 7, 2000, December 18, 2000, or on December 29, 2000 (65 FR 66808, 65 FR 79192, 65 FR 83158). In addition, we will consider proposing designation of critical habitat for *Mariscus fauriei, Silene lanceolata,* and *Zanthoxylum hawaiiense* within the historic range for each species on other Hawaiian islands.

In this proposal, we determine that the designation of critical habitat is prudent for one species (*Tetramolopium lepidotum* ssp. *lepidotum*) for which a prudency determination has not been made previously, and that no longer occurs on Lanai but is reported from one other island (Oahu). We are unable to identify the physical and biological features that are considered essential for the conservation of *Tetramolopium lepidotum* ssp. *lepidotum,* which no longer occurs on the island of Lanai, because information on the physical and biological features (i.e., the primary constituent elements) that are considered essential to the conservation of this species on Lanai is not known. *Tetramolopium lepidotum* ssp. *lepidotum* has not been observed on Lanai since 1928, and we are not able to identify the primary constituent elements that are considered essential to its conservation on Lanai from the historical record. Therefore, we are not able to identify the specific areas outside the geographic areas occupied by this species at the time of its listing (unoccupied habitat or where the species is not present) that are essential for the conservation of *Tetramolopium lepidotum* ssp. *lepidotum* on the island of Lanai. However, we will consider proposing designation of critical habitat for *Tetramolopium lepidotum* ssp. *lepidotum* within the historic range for this species on other Hawaiian islands.

All areas proposed as critical habitat are within the historical range of one or more of the 32 species at issue and contain one or more of the physical or biological features (primary constituent elements) essential for the conservation of one or more of the species.

As described in the discussions for each of the 32 species 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 from which the plant species are reported, 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 Lanai.

D. Criteria Used To Identify Critical Habitat

In the December 27, 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 provide some or all of the habitat components essential for the conservation of the 18 plant species. Specific details regarding the delineation of the proposed critical habitat units are given in the December 27, 2000, proposal (65 FR 82086). In that proposal we did not include potentially suitable unoccupied habitat that is important to the conservation of the 18 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 27, 2000 (65 FR 82086) proposal we received new information regarding the physical and biological features that are considered essential for the conservation of many of these 32 species and information on potentially suitable habitat within the historical range for many of these 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 Molokai (65 FR 83158), 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). 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 32 species. For each of these species, the overall recovery strategy outlined in the approved recovery plans includes: (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 1995, 1996a, 1996b, 1997, 1998a, 1998b, 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 their 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 to 10 populations for species that are believed to be very narrowly distributed on a single island (*e.g., Gahnia lanaiensis* and *Viola lanaiensis*), and the proposed critical habitat designations reflect this exception for these species. To be considered recovered each population of a species endemic to the island of Lanai 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 1995, 1996a, 1996b, 1997, 1998a, 1998b, 1999, 2001). A population, for the purposes of this discussion and as defined in the recovery plans for these species, is a unit in which the individuals could be regularly cross-pollinated and influenced by the same small-scale events (such as landslides), and which contains 100, 300, or 500 individuals, depending on whether the species is a long-lived perennial, short-lived perennial, or annual.

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 a 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 2001; 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 these characteristics that can be uniformly applied to all Hawaiian plant 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. 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 2001; 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 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 give the 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 each plant species. 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 32 plant species.

Changes in our approach to delineate proposed critical habitat units were incorporated in the following manner:

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. If more than the area needed for the number of recovery populations was identified as potentially suitable, only those areas within the least disturbed suitable habitat were designated as proposed 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). For each multi-island species we evaluated areas that have been proposed as critical habitat for each species in other published critical habitat proposals to determine if additional areas were essential on Lanai for the conservation of the species. If additional areas, on Lanai, were determined to be essential for the species' conservation we then followed the afore-mentioned protocol to delineate proposed critical habitat for the species.

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 or associated native plant species, as well as features such as cultivated agriculture fields, housing developments, and other areas that are unlikely to contribute to the conservation of one or more of the 32 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 for some larger proposed critical habitat units in order to simplify the unit mapping and their descriptions.

Within the critical habitat boundaries, section 7 consultation is generally necessary and adverse modification 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 32 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 man-made features and structures within the boundaries of the mapped unit, such as buildings, roads, aqueducts, telecommunications equipment, radars, telemetry antennas, 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 or primary constituent elements in adjacent critical habitat.

In summary, for most of these 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 Lanai to provide for the recovery of these 32 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 32 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, we contacted the major private landowner on Lanai by mail and we met with the landowner's representatives in April 2000 to discuss their current management for the plants on their lands. We also met with Maui County DOFAW office staff to discuss management activities they are conducting on Lanai. 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 have adequate funding for the management plan); and, (3) provides 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.

In determining whether a management plan or agreement provides a conservation benefit to the species, 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 1995, 1996a, 1996b, 1997, 1998a, 1998b, 1999, 2001; 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 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 1995, 1996a, 1996b, 1997, 1998a, 1998b, 1999, 2001; Bruegmann *et al.* 2001);

(2) The recommendations from the HPPRCC in their 1998 report to 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; and

(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 32 species (Service 1995, 1996a, 1996b, 1997, 1998a, 1998b, 1999, 2001), in the 1998 HPPRCC report to us (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 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 1995, 1996a, 1996b, 1997, 1998a, 1998b, 1999, 2001): 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 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. 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.

As shown in Table 3, the proposed critical habitat designations for 32 species of plants are found on private lands on the island of Lanai. Information received in response to our public notices, meetings with representatives of the landowner and Maui County, DOFAW staff, the December 27, 2000, proposal, public comment periods, and the March 22, 2001, public hearing, as well as information in our files, indicated that there is little on-going conservation management action for these plants, except as noted below. 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.

Private Lands

One species (*Bonamia menziesii*) is reported from The Nature Conservancy of Hawaii's Kanepuu Preserve which is located in the northeast central portion of Lanai (GDSI 2000; HINHP Database 2000; The Nature Conservancy of Hawaii (TNCH) 1997). This preserve was established by a grant of a perpetual conservation easement from the private landowner to TNCH and is 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 1997).

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 6 years remaining in the term, although the management plan is updated and funding amounts are re-authorized by the board at least every 6 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 6 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 State Department of Land and Natural Resources (DLNR), and DLNR makes annual inspections of the work in the reserve areas. *See* Haw. Rev. Stat. Secs. 195–1–195–11, and Hawaii Administrative Rules Sec. 13–210.

The management program within the preserve is documented in long-range management plans and yearly operational plans. These plans detail management measures that protect, restore, and enhance the rare plant and its habitat within the preserve (TNCH 1997, 1998, 1999). These management measures address the factors which led to the listing of this species including control of non-native species of ungulates, rodents, and weeds; and fire control. In addition, habitat restoration and monitoring are also included in these plans.

The primary goals within Kanepuu Preserve are to: (1) Control non-native species; (2) suppress wildfires; and (3) restore the integrity of the dryland forest ecosystem through monitoring and research. Specific management actions to address feral ungulates include the replacement of fences around some of the management units with Benzinal-coated wire fences as well as staff hunting and implementation of a volunteer hunting program with the DLNR. Additionally, a small mammal control program has been established to prevent small mammals from damaging rare native species and limit their impact on the preserve's overall native biota.

To prevent further displacement of native vegetation by non-native plants, a non-native plant control plan has been developed, which includes monitoring of previously treated areas, and the control of non-native plants in management units with restoration projects.

The fire control program focuses on suppression and pre-suppression. Suppression activities consist of coordination with State and county fire-fighting agencies to develop a Wildfire Management Plan for the preserve (TNCH 1998). Pre-suppression activities include mowing inside and outside of the fence line to minimize fuels.

A restoration, research, and monitoring program has been developed at Kanepuu to create a naturally regenerating *Nestegis sandwicensis-Diospyros sandwicensis* dryland forest, and expand the current range of native-dominated vegetation. Several years of casual observation indicate that substantial natural regeneration is occurring within native forest patches in the deer-free units (TNCH 1999). A draft of the Kanepuu Restoration Plan was completed in June 1999. This plan identifies sites for rare plant outplanting and other restoration activities. Monitoring is an important component to measure the success or failure rate of the animal and weed control programs. Management of these non-native species control programs is continually amended to preserve the ecological integrity of the preserve.

Because this plant and its habitat within the preserve is protected and managed, this area is not in need of special management considerations or protection. Therefore, we have determined that the private land within Kanepuu Preserve does not meet the definition of critical habitat in the Act, and we are not proposing to designate this land as critical habitat. Should the status of this reserve change, for example, by non-renewal of the 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)).

We believe that Kanepuu Preserve is the only potential critical habitat area on Lanai at this time that does 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 32 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 32 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 revised 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 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.

Proposed critical habitat includes habitat for these 32 species predominantly on the eastern side of Lanai in the Lanaihale area. Lands proposed as critical habitat have been divided into 8 units (Lanai A through Lanai H). A brief description of each unit is presented below.

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

Unit name	State/Local	Private	Federal	Total
Lanai A		574 ha (1,418 ac)		574 ha (1,418 ac)
Lanai B		551 ha (1,363 ac)		551 ha (1,363 ac)
Lanai C		222 ha (549 ac)		222 ha (549 ac)
Lanai D		5,861 ha (14,482 ac)		5,861 ha (14,482 ac)
Lanai E		162 ha (400 ac)		162 ha (400 ac)
Lanai F		331 ha (818 ac)		331 ha (818 ac)
Lanai G		151 ha (373 ac)		151 ha (373 ac)
Lanai H		1 ha (2 ac)		1 ha (2 ac)
Grand Total		7,853 ha (19,405 ac)		7,853 ha (19,405 ac)

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

Descriptions of Critical Habitat Units

Lanai A

The proposed unit Lanai A provides occupied habitat for one species, *Hibiscus brackenridgei*. It is proposed for designation because it contains the physical and biological features that are considered essential for its conservation on Lanai, and provides habitat to support one or more of the 8 to10 populations and 300 mature individuals per population for *Hibiscus brackenridgei*, throughout its known historical range considered by the recovery plan to be necessary for the conservation of this species (see the discussion of conservation requirements in Section D) (see Table Lanai A below).

This unit provides unoccupied habitat for one species, *Cyperus trachysanthos*. 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 Lanai, and provides habitat to support one or more additional populations necessary to meet the recovery objectives for this species of 8 to 10 populations, with 300 mature individuals per population, throughout its known historical range considered by the recovery plan to be necessary for the conservation of this species (see the discussion of conservation requirements in Section D) (see Table Lanai A below).

BILLING CODE 4310–55–P

Table for Lanai A

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
Cyperus trachysanthos	X*		X**		X					X			X** *		*Species is wide ranging.‡ **Historical on Lanai. ***Seeps.
Hibiscus brackenridgei	X*		X		X		X			X					*Species is wide ranging.‡

BILLING CODE 4310–55–C

The unit contains a total of 574 ha (1,418 ac) on privately owned land. It is bounded on the north by Puumaiekahi watershed and on the south by Kaapahu watershed. The natural features include: Kaea, Kaena Point, Kaenaiki Cape, and Keanapapa Point.

Lanai B

The proposed unit Lanai B provides occupied habitat for one species, *Tetramolopium remyi*. It is proposed for designation because it contains the physical and biological features that are considered essential for its conservation on Lanai and provides habitat to support one or more of the 8 to10 populations of 300 mature individuals per population for *Tetramolopium remyi*, throughout its known historical range considered by the recovery plan to be necessary for the conservation of this species (see the discussion of conservation requirements in Section D) (see Table Lanai B below).

The unit contains a total of 551 ha (1,363 ac) on privately owned land. It is bounded on the west by Puumaiekahi watershed and on the east by Lapaiki watershed. The natural features include: Puumaiekahi Gulch and Lapaiki Gulch.

BILLING CODE 4310–55–P

Table for Lanai B

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
Tetramolopium remyi	X			X	X	X				X			X*		*Red sandy loam soil in dry Dodonaea viscosa/Heteropogon contortus communities.

BILLING CODE 4310–55–C

Lanai C

The proposed unit Lanai C provides unoccupied habitat for one species, *Sesbania tomentosa*. Designation of this unit is essential to the conservation of *S. tomentosa* because it contains the physical and biological features that are considered essential for its conservation on Lanai, and it provides habitat to support one or more additional populations necessary to meet the recovery objectives, throughout its known historical range, of 8 to 10 populations with 300 mature individuals per population considered by the recovery plan to be necessary for the conservation of this species (see the discussion of conservation requirements in Section D) (see Table Lanai C below).

The unit contains a total of 222 ha (549 ac) on privately owned land. It is bounded on the west by Lapaiki watershed and on the east by Hawaiilanui watershed. The natural features include: Hawaiilanui Gulch.

BILLING CODE 4310–55–P

Table for Lanai 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
Sesbania tomentosa	X*		X**		X**		X			X					*Species is wide ranging.‡ **Historical on Lanai.

BILLING CODE 4310–55–C

Lanai D

The proposed unit Lanai D provides occupied habitat for 17 species: *Abutilon eremitopetalum, Bonamia menziesii, Centaurium sebaeoides, Clermontia oblongifolia* ssp. *mauiensis, Ctenitis squamigera, Cyanea grimesiana* ssp. *grimesiana, Cyanea macrostegia* ssp. *gibsonii, Cyrtandra munroi, Gahnia lanaiensis, Hedyotis mannii, Hedyotis schlechtendahliana* var. *remyi, Hibiscus brackenridgei, Labordia tinifolia* var. *lanaiensis, Melicope munroi, Spermolepis hawaiiense, Tetramolopium remyi,* and *Viola lanaiensis.* It is proposed for designation because it contains the physical and biological features that are considered essential for their conservation on Lanai, and provides habitat to support one or more of the 8 to 10 populations of 100 mature individuals per population for *Abutilon eremitopetalum, Cyanea macrostegia* ssp. *gibsonii, Labordia tinifolia* var. *lanaiensis,* and *Melicope munroi,* or 300 mature individuals per population for *Bonamia menziesii, Clermontia oblongifolia* ssp. *mauiensis, Ctenitis squamigera, Cyanea grimesiana* ssp. *grimesiana, Cyrtandra munroi, Gahnia lanaiensis, Hedyotis mannii, Hedyotis schlechtendahliana* var. *remyi, Hibiscus brackenridgei, Tetramolopium remyi,* and *Viola lanaiensis,* or 500 mature individuals per population for *Centaurium sebaeoides* and *Spermolepis hawaiiense* 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) (see Table Lanai D below). This unit provides unoccupied habitat for 11 species: *Adenophorus periens, Brighamia rockii, Cenchrus agrimonioides, Cyanea lobata, Diellia erecta, Diplazium molokaiensis, Hesperomannia arborescens, Isodendrion pyrifolium, Neraudia sericea, Solanum incompletum,* and *Vigna o-wahuensis.* 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 Lanai, and provides habitat to support one or more additional populations necessary to meet the recovery objectives of 8 to 10 populations for each species of 100 mature individuals per population for *Brighamia rockii* and *Hesperomannia arborescens,* or 300 mature individuals per population for *Adenophorus periens, Cenchrus agrimonioides, Cyanea lobata, Diellia erecta, Diplazium molokaiensis, Isodendrion pyrifolium, Neraudia sericea, Solanum incompletum,* and *Vigna o-wahuensis* 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) (see Table Lanai D below).

The unit contains a total of 5,861 ha (14,482 ac) on privately owned land. It is in portions of the Awehi, Halulu, Haua, Hauola, Kaa, Kahea, Kapoho, Kapua, Kuahua, Lopa, Maunalei, Naha, Nahoko, Palawai Basin, Poaiwa, Wahane, and Waiopa watersheds. The natural features include: Haalelepaakai (summit), Hookio Gulch, Kaaealii (summit), Kaapahu (summit), Kahinahina Ridge, Kamiki Ridge, Kaonohiokala Ridge, Kauiki (summit), Lanaihale (summit), Naio Gulch, Palea Ridge, Puhielelu Ridge, Puu Aalii, Puu Alii, Puu Kole, Puu Nene, Umi, Mauna o (summit), Waialala Gulch, and Wawaeku (summit).

BILLING CODE 4310–55–P

Table for Lanai D

Species	Notes
Abutilon eremitopetalum	*Lower gulch slopes and gulch bottoms with red sandy soil and rock in lowland dry Erythrina sandwicensis-Diospyros ferrea.
1. 8–10 pop. guidelines.	X
2. Island endemic.	X
3. Multi-island/current other islands.	
4. Multi-island/no current other islands.	
5. Non-viable populations.	X
6. Several occ. vulnerable to destruction.	X
7. Species with variable habitats.	
8. Not all occupied habitat needed.	
9. Long-lived perennial–100/pop.	X
10. Short-lived perennial–300/pop.	
11. Annual–500/pop.	
12. Narrow endemic.	
13. Restricted habitat requirements.	X*
14. Hybridization is possible.	

Adenophorus periens	X*		X		X**		X			X					*Species is wide ranging.‡ **Historical on Lanai.
Bonamia menziesii	X*		X		X		X			X					*Species is wide ranging.‡
Brighamia rockii	X		X*		X*				X				X**		*Historical on Lanai. **Ledges on steep rocky cliffs (but not sea cliffs; the location is inland).
Cenchrus agrimonioides	X*		X**		X**		X			X					*Species is wide ranging.‡ **Historical on Lanai.
Centaurium sebaeoides	X*		X		X	X					X		X**		*Species is wide ranging.‡ **Dry ledges.
Clermontia oblongifolia ssp. mauiensis	X		X		X	X	X			X					

Ctenitis squamigera	X*		X		X	X	X	X		X					*Species is wide ranging.‡
Cyanea grimesiana ssp. grimesiana	X*		X		X	X				X			X**		*Species is wide ranging.‡ **Rocky or steep slopes of stream banks.
Cyanea lobata	X		X*		X*					X			X**		*Historical on Lanai. **Gulches.
Cyanea macrostegia ssp. gibsonii	X*	X			X	X	X		X						*Not enough suitable habitat for 8-10.
Cyrtandra munroi	X		X		X	X	X			X					
Diellia erecta	X*		X**		X**		X			X					*Species is wide ranging.‡ **Historical on Lanai.
Diplazium molokaiense	X*		X**		X**		X			X					*Species is wide ranging.‡ **Historical on Lanai.

Gahnia lanaiensis	X*	X			X	X	X			X		X			*Species is wide ranging.‡
Hedyotis mannii	X		X		X	X				X			X*		*Dark, narrow, rocky gulch walls or steep stream banks in wet forest.
Hedyotis schlechtendahliana var. remyi	X	X			X	X				X			X*		*Windswept ridges.
Hesperomannia arborescens	X*		X**		X**		X		X						*Species is wide ranging.‡ **Historical on Lanai.
Hibiscus brackenridgei	X*		X		X		X			X					*Species is wide ranging.‡
Isodendrion pyrifolium	X		X*		X*		X			X					*Historical on Lanai.
Labordia tinifolia var. lanaiensis	X*	X			X	X	X		X						*Species is wide ranging.‡
Melicope munroi	X*			X	X	X	X		X						*Species is wide ranging.‡

Neraudia sericea	X		X*		X*		X			X					*Historical on Lanai.
Solanum incompletum	X		X*		X*		X			X					*Historical on Lanai.
Spermolepis hawaiiensis	X*		X		X	X	X	X			X				*Species is wide ranging.‡
Tetramolopium remyi	X			X	X	X				X			X*		*Red sandy loam soil in dry Dodonaea viscosa-Heteropogon contortus communities.
Vigna o-wahuensis	X*		X		X	X	X	X		X					*Species is wide ranging.‡
Viola lanaiensis	X*	X			X	X	X			X		X			*Species is wide ranging.‡

BILLING CODE 4310–55–C

Lanai E

The proposed unit Lanai E (units E1, E2, and E3) provides unoccupied habitat for one species, *Bidens micrantha* ssp. *kalealaha.* 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 Lanai, and provides habitat to support one or more additional populations necessary to meet the recovery objectives of 8 to 10 populations of 300 mature individuals per population, throughout its known historical range considered by the recovery plan to be necessary for the conservation of this species (see the discussion of conservation requirements in Section D) (see Table Lanai E below).

The unit cluster contains a total of 162 ha (400 ac) on privately owned land. It is contained in the Palawai Basin watershed. The natural features include: in E1, Kapohaku Gulch; in E2, Waiakaiole Gulch and Waipaa Gulch; and in E3, Palikoae Gulch.

BILLING CODE 4310–55–P

Table for Lanai E

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 micrantha ssp. kalealaha	X		X*		X*					X			X**		*Historical on Lanai. **Gulches or gulch slopes.

BILLING CODE 4310–55–C

Lanai F

The proposed unit Lanai F provides unoccupied habitat for one species, *Hibiscus brackenridgei.* 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 Lanai, and provides habitat to support one or more additional populations necessary to meet the recovery objectives of 8 to 10 populations of 300 mature individuals per population, throughout its known historical range considered by the recovery plan to be necessary for the conservation of this species (see the discussion of conservation requirements in Section D) (see Table Lanai F below).

The unit contains a total of 331 ha (818 ac) on privately owned land. It is completely within the Paliamano watershed. The natural features include: Paliamano Gulch.

BILLING CODE 4310–55–P

Table for Lanai 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
Hibiscus brackenridgei	X*		X		X		X			X					*Species is wide ranging.‡

BILLING CODE 4310–55–C

Lanai G

The proposed unit Lanai G provides unoccupied habitat for one species, *Portulaca sclerocarpa.* 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 Lanai, and provides habitat to support one or more additional populations necessary to meet the recovery objectives of 8 to 10 populations of 300 mature individuals per population, throughout its known historical range considered by the recovery plan to be necessary for the conservation of this species (see the discussion of conservation requirements in Section D) (see Table Lanai G below).

The unit contains a total of 151 ha (373 ac) on privately owned land. It is bounded on the west by Anapuka watershed and on the east by Manele watershed. The natural features include: Huawai Bay, Kaluakoi Point, and the western portion of Kapihua Bay.

BILLING CODE 4310–55–P

Table for Lanai 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
Portulaca sclerocarpa	X*		X		X	X				X			X*		*Species is wide ranging.‡ **Exposed ledges with thin soil in coastal areas.

BILLING CODE 4310–55–C

Lanai H

The proposed unit Lanai H provides occupied habitat for one species, *Portulaca sclerocarpa.* It is proposed for designation because it contains the physical and biological features that are considered essential for its conservation on Lanai, and provides habitat to support one or more of the 8 to 10 populations of 300 mature individuals per population, throughout its known historical range considered by the recovery plan to be necessary for the conservation of the species (see the discussion of conservation requirements in Section D) (see Table Lanai H below).

The unit contains a total of 1 ha (2 ac) on privately owned land. The natural features include: Poopoo Islet.

BILLING CODE 4310–55–P

Table for Lanai H

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
Portulaca sclerocarpa	X*		X		X	X				X			X*		*Species is wide ranging.‡ **Exposed ledges with thin soil in coastal areas.

BILLING CODE 4310–55–C

Key for Tables Lanai A–H

‡Not all suitable habitat is proposed to be designated, only those areas essential to 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 needed per population.
10. Life history, short-lived perennial—300 mature, reproducing individuals needed per population.
11. Life history, annual—500 mature, reproducing individuals needed 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.

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 its critical habitat. Destruction or adverse modification of critical habitat occurs when a Federal action directly or indirectly alters critical habitat to the extent it 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, 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 measures 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 a 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.

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.

If we issue a biological opinion concluding that a project is likely to result in the destruction or adverse modification of critical habitat, we 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.

Activities on Federal lands that may affect critical habitat of one or more of the 32 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 destroy or adversely modify 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; and

(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 listed species and the primary constituent elements of their 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, Oregon 97232–4181 (telephone 503/231–2063; facsimile 503/231–6243).

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 the 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. 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 economic impacts of designating these areas as critical habitat in light of this new proposal 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 attributable to listing these 32 plant species, where such estimates are available. This information on the baseline will allow a fuller appreciation of the economic impacts associated with listing and 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 reopen 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 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 threats to these listed species.

We are aware that the State of Hawaii and the private landowner is 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 Lanai. 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 and distribution of habitat for the 32 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;

(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 May 3, 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.

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 a 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?

Please send any comments that concern how we could make this notice easier to understand to the Field Supervisor, Pacific Islands Office (see **ADDRESSES**).

Taxonomic Changes

At the time we listed *Cyanea grimesiana* ssp. *grimesiana* and *Cyanea lobata* 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 Lanai before we can prepare and publish a notice of taxonomic changes for these two species. We plan to publish a taxonomic change notice for these two species after we have published the final critical habitat designations on Lanai. At that time we will evaluate the critical habitat designations on Lanai for these two 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 an 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 comment.

a. 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 32 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 32 PLANTS FROM THE ISLAND OF LANAI

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 the Federal Government (*e.g.,* 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 the Interior) carries out or 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 destory 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 desgianted 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 actions 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 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 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 32 plant species since their listing between 1991 and 1999. For the reasons discussed above, the prohibition against adverse modification of critical habitat would 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

because the lands which are proposed for critical habitat designation are solely owned by one landowner, Castle and Cooke Resorts, which is not a small entity as defined below. However, should our economic analysis provide a contrary indication, we will revisit this determination at that time. The following discussion explains our rationale.

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 *Abutilon eremitopetalum, Adenophorus periens, Bidens micrantha* ssp. *kalealaha, Bonamia menziesii, Brighamia rockii, Cenchrus agrimonioides, Centaurium sebaeoides, Clermontia oblongifolia* ssp. *mauiensis, Ctenitis squamigera, Cyanea grimesiana* ssp. *grimesiana, Cyanea lobata, Cyanea macrostegia* ssp. *gibsonii, Cyperus trachysanthos, Cyrtandra munroi, Diellia erecta, Diplazium molokaiense, Gahnia lanaiensis, Hedyotis mannii, Hedyotis schlechtendahliana* var. *remyi, Hesperomannia arborescens, Hibiscus brackenridgei, Isodendrion pyrifolium, Labordia tinifolia* var. *lanaiensis, Melicope munroi, Neraudia sericea, Portulaca sclerocarpa, Sesbania tomentosa, Solanum incompletum, Spermolepis hawaiiensis, Tetramolopium remyi, Vigna o-wahuensis,* and *Viola lanaiensis.* 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 likely 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 32 plant species were listed (between 1991 and 1999), there have been no formal consultations and seven informal consultations, in addition to consultations on Federal grants to State wildlife programs, which would not affect small entities. Two informal consultations were conducted on behalf of a private consulting firm, representing Maui Electric Company, who requested species lists for a proposed generating station at Miki Basin. None of the 32 species were reported from this area. Two informal consultations were conducted on behalf of the Federal Aviation Administration for airport navigational or improvement projects. None of the 32 species were reported from the project areas. One informal consultation was conducted on behalf of the U.S. Department of the Navy regarding nighttime, low-altitude terrain flights and confined area landings over and on limited areas of northwestern Lanai by the Marine Corps. None of the 32 species were reported from the project area. One informal consultation was conducted on behalf of NRCS for the construction of a wildlife exclusion fence and removal of alien ungulates from the enclosure, control of invasive alien plants within the enclosure, and outplanting of native plants in the Lanaihale watershed area. Thirty of the 32 species, *Adenophorus periens, Bidens micrantha* ssp. *kalealaha, Bonamia menziesii, Brighamia rockii, Cenchrus agrimonioides, Centaurium sebaeoides, Clermontia oblongifolia* ssp. *mauiensis, Ctenitis squamigera, Cyanea grimesiana* ssp. *grimesiana, Cyanea lobata, Cyanea macrostegia* ssp. *gibsonii, Cyperus trachysanthos, Cyrtandra munroi, Diellia erecta, Diplazium molokaiense, Gahnia lanaiensis, Hedyotis mannii, Hedyotis schlechtendahliana* var. *remyi, Hesperomannia arborescens, Hibiscus brackenridgei, Labordia tinifolia* var. *lanaiensis, Melicope munroi, Neraudia sericea, Portulaca sclerocarpa, Sesbania tomentosa, Solanum incompletum, Spermolepis hawaiiensis, Tetramolopium remyi, Vigna o-wahuensis,* and *Viola lanaiensis* were reported from the project area. Funding for the project will be provided by NRCS, through their Wildlife Habitat Incentive Program, to Castle and Cooke Resorts. One informal consultation was conducted on behalf of the Service, for the effects of fencing and replanting on listed and endangered species within Awehi Gulch. None of the 32 species were reported from the Awehi Gulch project area. In addition, we are in the early stages of defining a project area in the Lanaihale watershed for fencing and restoration of native vegetation. Funding for the project will be provided by the Service to Castle and Cooke Resorts, in partnership with the State Department of Land and Natural Resources.

We have determined that Maui Electric Company is not a small entity because it is not an independent non-profit organization, small governmental jurisdiction, nor a small business. The Federal Aviation Administration, U.S. Department of the Navy, and NRCS are not small entities. The informal consultations on the Lanaihale watershed area project and the Awehi Gulch project indirectly affected or concerned the major landowner on Lanai, Castle and Cooke Resorts. We have determined that Castle and Cooke Resorts is not a small entity because it is not a small retail and service business with less than $5 million in annual sales nor is it a small agricultural business with annual sales less than $750,000.

We concurred with NRCS's determination that the Lanaihale watershed area project, as proposed, and the only project in which any of the plant species at issue were reported in, was not likely to adversely affect listed species. At this time, only the Lanaihale watershed area project is ongoing. Therefore, the requirement to reinitiate consultation for ongoing projects will not affect a substantial number of small entities on Lanai.

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. However, there will be little additional impact on State and local governments and their activities because all but one of the proposed critical habitat areas are occupied by at least one species. Other than the Federally funded habitat restoration projects in the Lanaihale watershed area, we are aware of relatively few activities in the proposed critical habitat areas for these 32 plants that have Federal involvement, and thus, would require consultation for on-going projects. As mentioned above, currently we have conducted only seven informal consultations under section 7 on Lanai, and only one consultation involved any of the 32 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 Lanai, all of the proposed designations are on private land under one landowner. Nearly all of the land within the critical habitat units is unsuitable for development, land uses, and activities. This is due to their remote locations, lack of access, and rugged terrain. The majority of this land (about 71 percent) is within the State Conservation District where State land-use controls severely limit development and most activities. Approximately 27 percent of this land is within the State Agricultural District, approximately less than one percent is within the State Urban District and approximately less than one percent is within the State Rural District. On non-Federal lands, activities that lack Federal involvement would not be affected by the critical habitat designations. However, 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 would likely affect only the major landowner on the island (who is not a small entity), 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 be federal funds, permits, or authorizations in these coastal areas.

Lands that are within the State Rural District are primarily 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, small farms that may receive funding or require authorizations from the Department of Agriculture, watershed management and restoration projects sponsored by NRCS, and activities funded or authorized by the EPA. However, we are not aware of a significant number of future activities that would require federal funds, permits, or authorizations in these coastal areas.

Even where the requirements of section 7 might apply due to critical habitat, 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 under section 7—can be implemented successfully with, at most, the adoption of reasonable and prudent alternatives. These measures must be economically feasible and within the scope of authority of the Federal agency involved in the consultation. As we have a very limited consultation history for these 32 species from Lanai, we can only describe the general kinds of actions that may be identified in future reasonable and prudent alternatives. These are based on our understanding of the needs of these species and the threats they face, especially as described in the final listing rules and in this proposed critical habitat designation, as well as our experience with similar listed plants in Hawaii. In addition, all of these species are protected under the State of Hawaii's Endangered Species Act (Hawaii Revised Statutes, Chap. 195D–4). Therefore, we have also considered the kinds of actions required under the State licensing process for these species. The kinds of actions that may be included in future reasonable and prudent alternatives include conservation set-asides, management of competing non-native species, restoration of degraded habitat, propagation, outplanting and augmentation of existing populations, construction of protective fencing, and periodic monitoring. These measures are not likely to result in a significant economic impact to a substantial number of small entities because any measure included as a reasonable and prudent alternative would have to be economically feasible to the individual landowner, and because as discussed above, we do not believe there will be a substantial number of small entities affected by Act's consultation requirements.

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.

In summary, as stated above, this proposed rule would not affect small entities because all of the designations are on lands under one landownership. The landowner is not a small entity and, therefore, this proposed rule would not affect a substantial number of small entities and would not result in a significant economic effect on a substantial number of small entities. Most of this private land within the

proposed designation is currently being used for recreational or conservation purposes, and therefore, not likely to require any Federal authorization. In the remaining areas, Federal involvement—and thus section 7 consultations, the only trigger for economic 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, all under one ownership, and, therefore, would not 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 the single landowner. 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: *Abutilon eremitopetalum, Adenophorus periens, Bidens micrantha* ssp. *kalealaha, Bonamia menziesii, Brighamia rockii, Cenchrus agrimonioides, Centaurium sebaeoides, Clermontia oblongifolia* ssp. *mauiensis, Ctenitis squamigera, Cyanea grimesiana* ssp. *grimesiana, Cyanea lobata, Cyanea macrostegia* ssp. *gibsonii, Cyperus trachysanthos, Cyrtandra munroi, Diellia erecta, Diplazium molokaiense, Gahnia lanaiensis, Hedyotis mannii, Hedyotis schlechtendahliana* var. *remyi, Hesperomannia arborescens, Hibiscus brackenridgei, Isodendrion pyrifolium, Labordia tinifolia* var. *lanaiensis, Melicope munroi, Neraudia sericea, Portulaca sclerocarpa, Sesbania tomentosa, Solanum incompletum, Spermolepis hawaiiensis, Tetramolopium remyi, Vigna o-wahuensis,* and *Viola lanaiensis* 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, or should landownership change on the island of Lanai, 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 discussed above, 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 32 species from Lanai in a preliminary takings implication assessment. The takings implications assessment concludes that this proposed rule does not pose significant takings implications. Once the 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 32 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 only 4 of 8 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 32 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) Executive Order 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 32 plant species. Therefore, designation of critical habitat for these 32 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 Marigold Zoll, Christa Russell, Michelle Stephens, and Gregory Koob (see **ADDRESSES** section).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, 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 *Abutilon eremitopetalum, Bidens micrantha* ssp. *kalealaha, Bonamia menziesii, Brighamia rockii, Cenchrus agrimonioides, Centaurium sebaeoides, Clermontia oblongifolia* ssp. *mauiensis, Cyanea grimesiana ssp. grimesiana, Cyanea lobata, Cyanea macrostegia* ssp. *gibsonii, Cyperus trachysanthos, Cyrtandra munroi, Gahnia lanaiensis, Hedyotis mannii, Hedyotis schlechtendahliana* var. *remyi, Hesperomannia arborescens, Hibiscus brackenridgei, Isodendrion pyrifolium, Labordia tinifolia* var. *lanaiensis, Melicope munroi, Neraudia sericea, Portulaca sclerocarpa, Sesbania tomentosa, Solanum incompletum, Spermolepis hawaiiensis, Tetramolopium remyi, Vigna o-wahuensis,* and *Viola lanaiensis* under ''FLOWERING PLANTS'' and *Adenophorus periens, Ctenitis squamigera, Diellia erecta,* and *Diplazium molokaiense* 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							
*	*	*	*	*	*		*
Abutilon eremitopetalum	none	U.S.A (HI)	Malvaceae	E	435	17.96(a)	NA
*	*	*	*	*	*		*
Bidens micrantha ssp. *kalealaha*.	Kookoolau	U.S.A (HI)	Asteraceae	E	467	17.96(a)	NA
*	*	*	*	*	*		*
Bonamia menziesii	none	U.S.A (HI)	Convolvulaceae	E	559	17.96(a)	NA
*	*	*	*	*	*		*
Brighamia rockii	Pua ala	U.S.A (HI)	Campanulaceae	E	530	17.96(a)	NA
*	*	*	*	*	*		*
Cenchrus agromonioides	Kamanomano (=sandbur, agrimony).	U.S.A (HI)	Poaceae	E	592	17.96(a)	NA
*	*	*	*	*	*		*
Centaurium sebaeoides	Awiwi	U.S.A (HI)	Gentianaceae	E	448	17.96(a)	NA
*	*	*	*	*	*		*
Clermontia oblongifolia ssp. *mauiensis*.	Oha wai	U.S.A (HI)	Campanulaceae	E	467	17.96(a)	NA
*	*	*	*	*	*		*
Cyanea grimesiana ssp. *grimesiana*.	Haha	U.S.A (HI)	Campanulaceae	E	592	17.96(a)	NA
*	*	*	*	*	*		*
Cyanea lobata	Haha	U.S.A (HI)	Campanulaceae	E	467	17.96(a)	NA

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
*	*	*	*	*	*		*
Cyanea macrostegia ssp. gibsonii.	none	U.S.A. (HI)	Campanulaceae	E	592	17.96(a)	NA
*	*	*	*	*	*		*
Cyperus trachysanthos	Puukaa	U.S.A. (HI)	Cyperaceae	E	592	17.96(a)	(NA)
*	*	*	*	*	*		*
Cyrtandra munroi	Haiwale	U.S.A. (HI)	Gesneriaceae	E	467	17.96(a)	NA
*	*	*	*	*	*		*
Gahnia lanaiensis	none	U.S.A. (HI)	Cyperaceae	E	435	17.96(a)	NA
*	*	*	*	*	*		*
Hedyotis mannii	Pilo	U.S.A. (HI)	Rubiaceae	E	480	17.96(a)	NA
*	*	*	*	*	*		*
Hedyotis sclechtendahliana var. *remyi*.	Kopa	U.S.A. (HI)	Rubiaceae	E	441	17.96(a)	NA
*	*	*	*	*	*		*
Hesperomannia arborescens.	none	U.S.A. (HI)	Asteraceae	E	536	17.96(a)	NA
*	*	*	*	*	*		*
Hibiscus brackenridgei	Mao hau hele	U.S.A. (HI)	Malvaceae	E	559	17.96(a)	NA
*	*	*	*	*	*		*
Isodendrion pyrifolium	Wahine noho kula	U.S.A. (HI)	Violaceae	E	532	17.96(a)	NA
*	*	*	*	*	*		*
Labordia tinifolia var. *lanaiensis*.	Kamakahala	U.S.A. (HI)	Loganiaceae	E	666	17.96(a)	NA
*	*	*	*	*	*		*
Melicope munroi	Alani	U.S.A. (HI)	Rutaceae	E	666	17.96(a)	NA
*	*	*	*	*	*		*
Neraudia sericea	none	U.S.A. (HI)	Urticaceae	E	559	17.96(a)	NA
*	*	*	*	*	*		*
Portulaca sclerocarpa	Poe	U.S.A. (HI)	Portulacaceae	E	432	17.96(a)	NA
*	*	*	*	*	*		*
Sesbania tomentosa	Ohai	U.S.A. (HI)	Fabaceae	E	559	17.96(a)	NA
*	*	*	*	*	*		*
Solanum incompletum	Popolo ku mai	U.S.A. (HI)	Solanaceae	E	559	17.96(a)	NA
*	*	*	*	*	*		*
Spermolepis hawaiiensis	none	U.S.A. (HI)	Apiaceae	E	559	17.96(a)	NA
*	*	*	*	*	*		*
Tetramalopium remyi	none	U.S.A. (HI)	Asteraceae	E	435	17.96(a)	NA
*	*	*	*	*	*		*
Vigna o-wahuensis	none	U.S.A. (HI)	Fabaceae	E	559	17.96(a)	NA
*	*	*	*	*	*		*
Viola lanaiensis	none	U.S.A. (HI)	Violaceae	E	435	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

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
*	*	*	*	*	*		*
Diplazium molokiaense ..	none	U.S.A. (HI)	Aspleniaceae	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), and 67 FR 4072 (January 28, 2002) is proposed to be further amended as follows:

a. Revise the heading of paragraph (a) to read ''Critical habitat unit descriptions and maps by State'';

b. Revise the heading of paragraph (b) to read ''All other critical habitat unit descriptions and maps by Family'';

c. Revise the introductory text of paragraph (a)(1)(i);

d. Add paragraph (a)(1)(i)(E);

e. Revise paragraph (a)(1)(ii).

The revised and added text reads as follows:

§ 17.96 Critical habitat—plants.

(a) * * *

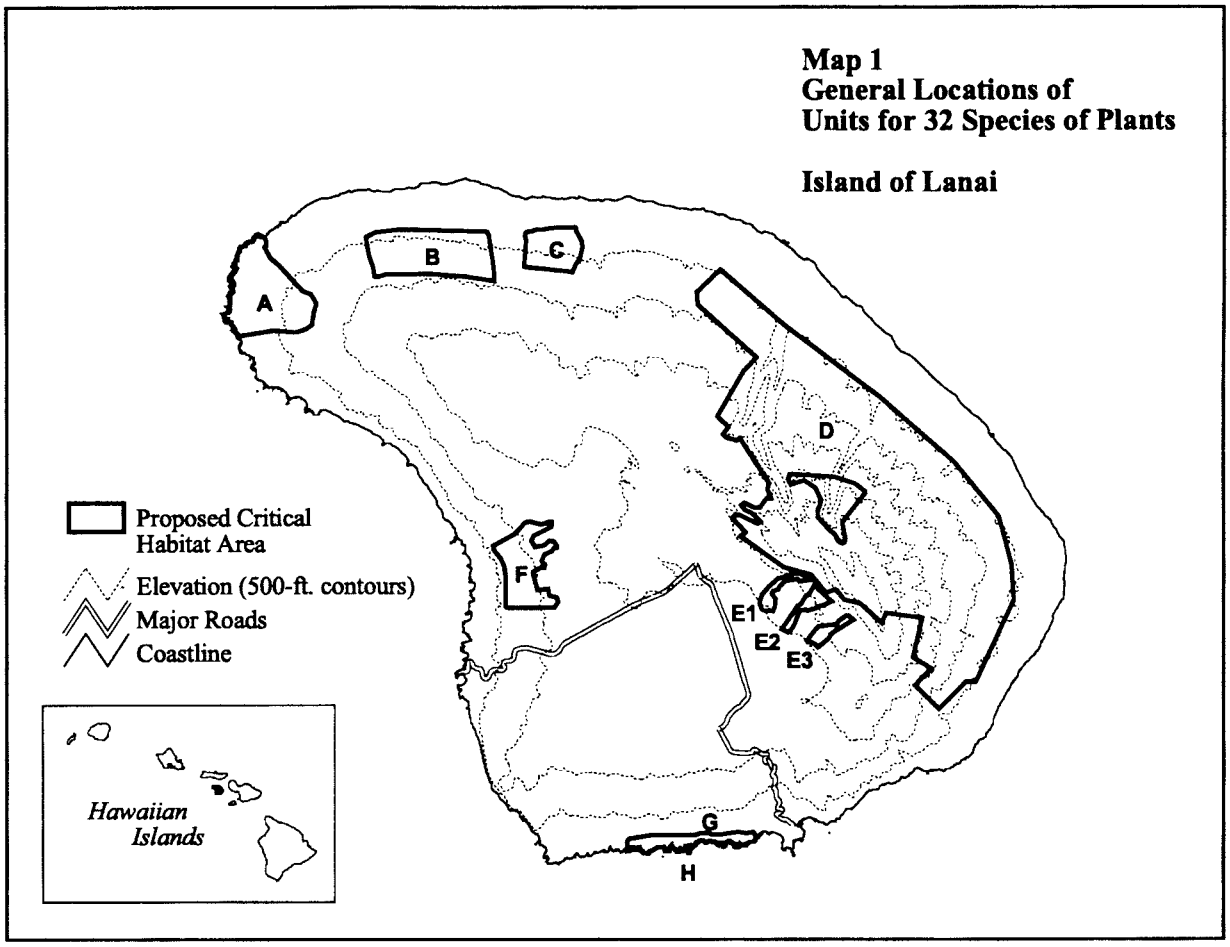
(1) * * *

(i) *Maps and critical habitat unit descriptions.* The following sections contain the legal descriptions of the critical habitat units designated for each of the Hawaiian Islands. Existing man-made features and structures within proposed areas, such as buildings, roads, aqueducts, telecommunications equipment, telemetry antennas, radars, missile launch sites, arboreta and gardens, heiau (indigenous places of worship or shrines), airports, other paved areas, lawns, and other rural residential landscaped areas do not contain one or more of the primary constituent elements described for each species in paragraph (a)(1)(ii)(E) of this section and therefore, are not included in the critical habitat designations.

* * * * *

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

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

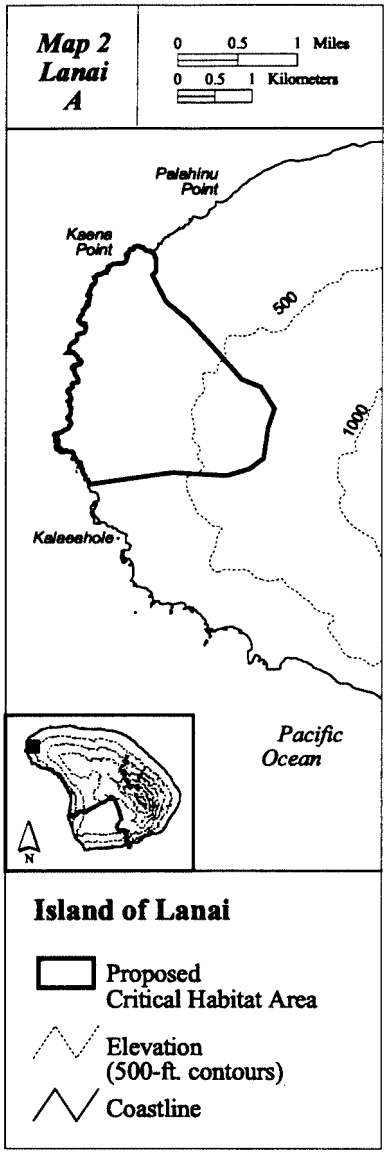


(*2*) Lanai A (574 ha; 1,418 ac).

(*i*) Unit consists of the following 17 boundary points and the intermediate coastline: 702882, 2313787; 702921, 2313674; 702928, 2313512; 702871, 2313459; 703058, 2313104; 703357, 2312863; 703811, 2312361; 704081, 2312052; 704342, 2311956; 704525, 2311656; 704439, 2311405; 704381,

2310990; 704197, 2310846; 703888, 2310749; 703155, 2310797; 702024, 2310634; 702882, 2313787.

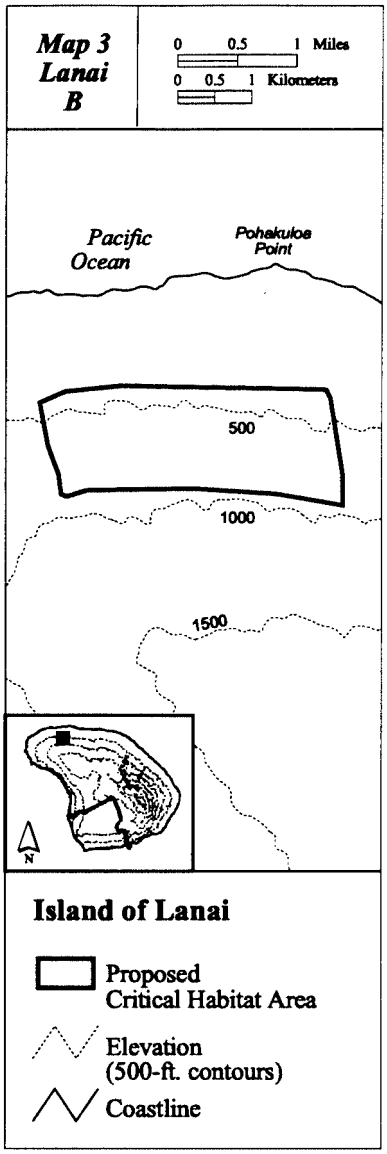
(*ii*) **Note:** Map 2 follows:



(*3*) Lanai B (551 ha; 1,363 ac).

(*i*) Unit consists of the following 15 boundary points: 706438, 2313925; 707201, 2314002; 709962, 2313947; 710017, 2313829; 710177, 2312823; 710191, 2312372; 709303, 2312524; 708179, 2312600; 706722, 2312579; 706452, 2312496; 706382, 2312524; 706348, 2312801; 706202, 2313190; 706091, 2313773; 706438, 2313925.

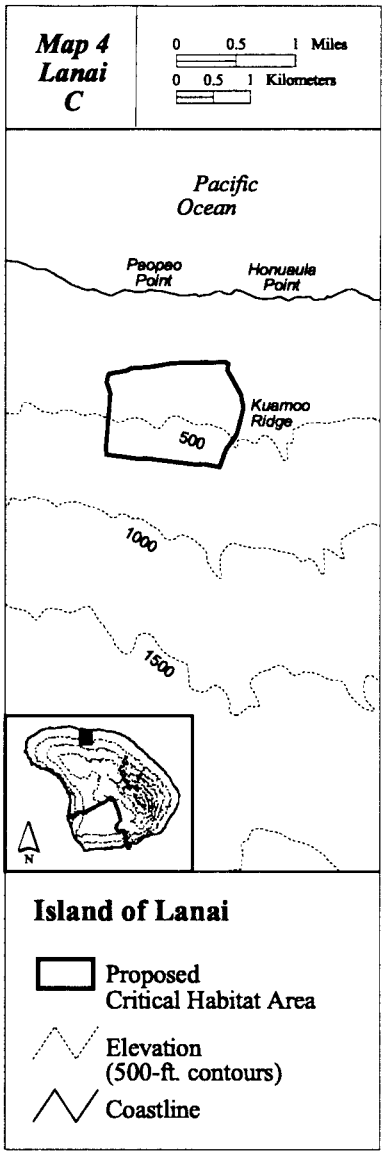
(*ii*) **Note:** Map 3 follows:



(*4*) Lanai C (222 ha; 549 ac).

(*i*) Unit consists of the following 22 boundary points: 711188, 2313923; 711429, 2313965; 711487, 2314003; 711749, 2314015; 712049, 2314065; 712768, 2314082; 712814, 2314057; 712797, 2313974; 712980, 2313641; 713013, 2313458; 712922, 2313100; 712777, 2312897; 712693, 2312660; 712477, 2312701; 712377, 2312693; 711683, 2312780; 711596, 2312768; 711159, 2312834; 711147, 2312926; 711209, 2313662; 711163, 2313815; 711188, 2313923.

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



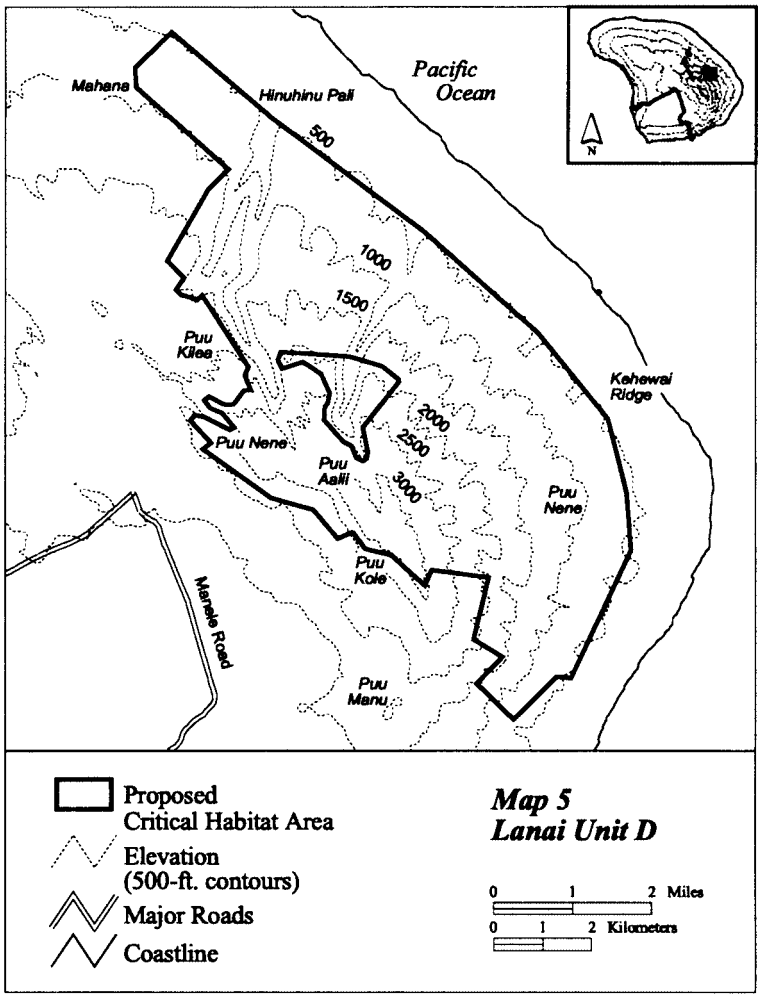
(*5*) Lanai D (5861 ha; 14,482 ac).

(*i*) Unit consists of the following 50 boundary points: 721080, 2302560; 720773, 2302431; 720277, 2303011; 719410, 2303246; 718032, 2304246; 718198, 2304371; 717783, 2304820; 717871, 2304936; 718055, 2304902; 718572, 2304638; 718670, 2304691; 718422, 2304982; 718181, 2305085; 718055, 2305246; 718157, 2305319; 718468, 2305154; 718652, 2305154; 718870, 2305453; 719006, 2305448; 718885, 2305755; 718957, 2305935; 718018, 2307384; 717926, 2307299; 717586, 2307403; 717484, 2307510; 717654, 2307744; 717302, 2308086; 718137, 2309521; 718547, 2309943; 716674, 2311623; 716648, 2312011; 717399, 2312731; 719438, 2310984; 722501, 2308704; 724829, 2306647; 726262, 2304867; 726648, 2303344; 726728, 2302198; 725517, 2299595; 725216, 2299615; 724348, 2298741; 723596, 2299480; 724115, 2300023; 723526, 2300379; 723832, 2301639;

722680, 2301793; 722544, 2301470; 721858, 2302099; 721339, 2302216; 721080, 2302560.

(*ii*) Excluding one area as follows: Bounded by the following 20 boundary points (218 ha; 539 ac): 722030, 2305656; 721281, 2304684; 721384, 2304179; 721361, 2304053; 721278, 2303995; 721137, 2304078; 721051, 2304305; 720895, 2304397; 720500, 2304833; 720511, 2305106; 720570, 2305199; 720608, 2305397; 720431, 2305786; 720064, 2306027; 719647, 2305891; 719553, 2306068; 719613, 2306239; 721002, 2306152; 721675, 2305940; 722030, 2305656.

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



(*6*) Lanai E1 (53 ha; 132 ac).

(*i*) Unit consists of the following 21 boundary points: 718727, 2301883; 718642, 2302092; 718720, 2302377; 718928, 2302637; 719228, 2302896; 719550, 2302974; 719799, 2303078; 719975, 2303021; 720193, 2302917; 720261, 2302858; 719948, 2302788; 719846, 2302865; 719474, 2302802; 719277, 2302635; 719253, 2302561; 719078, 2302494; 719042, 2302419; 719144, 2302231; 719136, 2302009; 719078, 2301859; 718727, 2301883.

(*ii*) **Note:** See Map 6.

(*7*) Lanai E2 (60 ha; 148 ac).

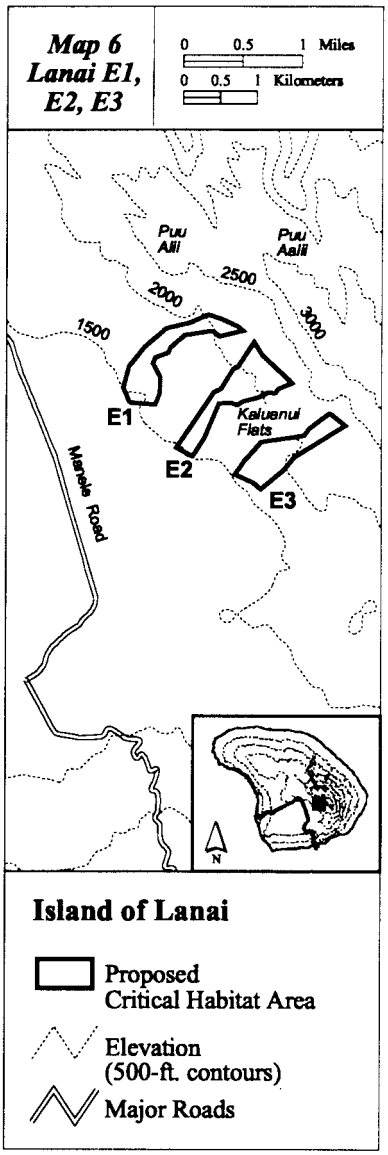
(*i*) Unit consists of the following 19 boundary points: 719586, 2301160; 719361, 2301274; 719868, 2302031; 719968, 2302070; 720134, 2302344; 720198, 2302369; 720411, 2302710; 720524, 2302530; 720933, 2302146; 720741, 2302073; 720699, 2302012; 720600, 2302026; 720464, 2301954; 720259, 2301901; 720187, 2301857; 720106, 2301890; 719937, 2301876; 719749, 2301413; 719586, 2301160.

(*ii*) **Note:** See Map 6.

(*8*) Lanai E3 (49 ha; 120 ac).

(*i*) Unit consists of the following 12 boundary points: 721435, 2301743; 721647, 2301574; 720952, 2301142; 720824, 2300969; 720507, 2300707; 720411, 2300796; 720164, 2300917; 720283, 2301104; 720513, 2301353; 721094, 2301439; 721161, 2301532; 721435, 2301743.

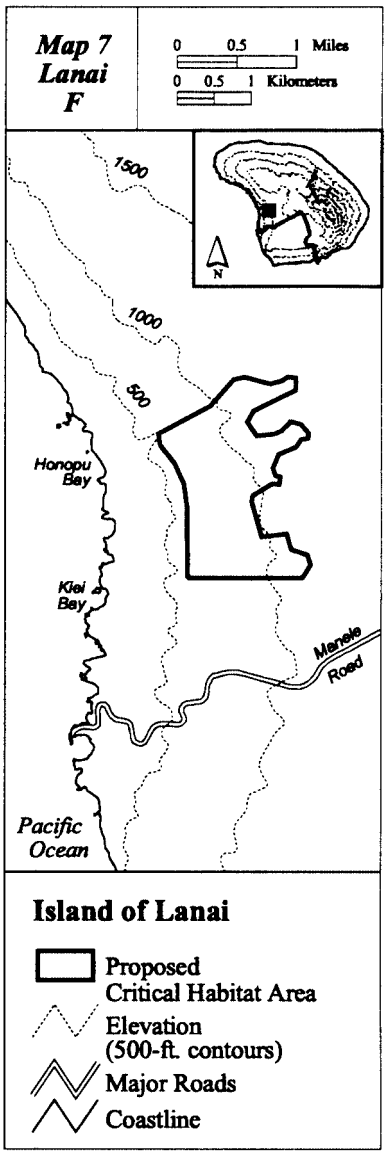
(*ii*) **Note:** Map 6 follows:



(*9*) Lanai F (331 ha; 818 ac).

(*i*) Unit consists of the following 41 boundary points: 710563, 2301975; 710554, 2302948; 710511, 2303264; 710389, 2303545; 710194, 2303783; 710165, 2303941; 710864, 2304323; 711181, 2304676; 711332, 2304712; 711678, 2304619; 711836, 2304655; 711905, 2304708; 712023, 2304705; 712031, 2304626; 712016, 2304532; 711452, 2304254; 711367, 2304099; 711491, 2303913; 711735, 2303942; 711836, 2303985; 711951, 2304107; 712084, 2304075; 712196, 2303949; 712190, 2303878; 712098, 2303861; 712028, 2303760; 711793, 2303659; 711717, 2303473; 711745, 2303370; 711818, 2303354; 711800, 2303250; 711710, 2303264; 711442, 2303104; 711423, 2303022; 711564, 2302535; 711901, 2302580; 711959, 2302361; 712182, 2302292; 712225, 2302156; 712115, 2301973; 710563, 2301975.

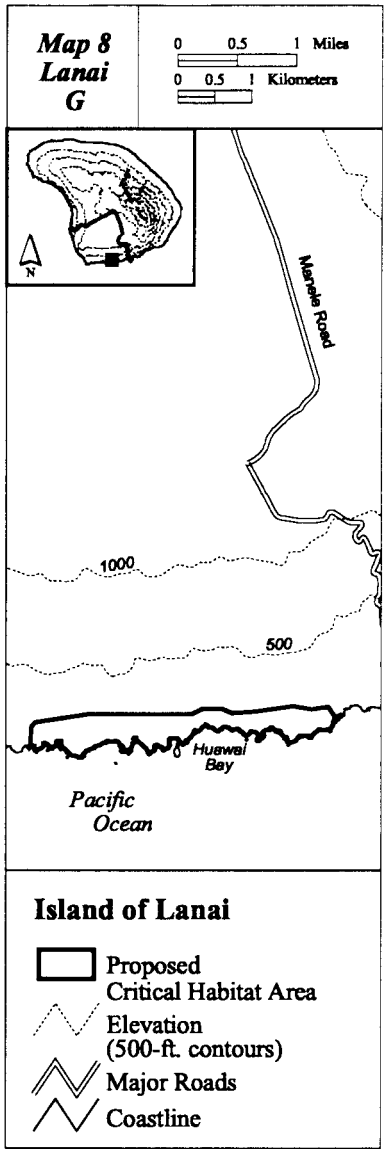
(*ii*) **Note:** Map 7 follows:



(*10*) Lanai G (151 ha; 373 ac).

(*i*) Unit consists of the following 16 boundary points and the intermediate coastline: 714418, 2294529; 714470, 2294599; 715200, 2294703; 716591, 2294709; 716742, 2294778; 716997, 2294784; 717130, 2294726; 717425, 2294738; 717964, 2294819; 718219, 2294773; 718433, 2294804; 718534, 2294660; 718604, 2294694; 718611, 2294686; 714408, 2294259; 714418, 2294529.

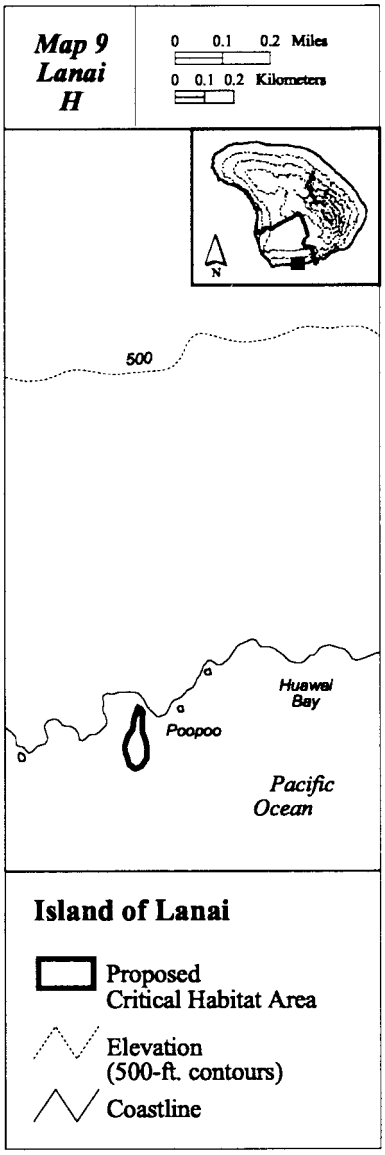
(*ii*) **Note:** Map 8 follows:



(*11*) Lanai H (1 ha; 2 ac).

(*i*) Unit consists of the entire offshore island, located at: 716393, 2294216.

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



BILLING CODE 4310–55–C

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

Unit name	Species occupied	Species unoccupied
Lanai A	*Hibiscus brackenridgei*	*Cyperus trachysanthos*.
Lanai B	*Tetramolopium remyi*.	
Lanai C		*Sesbania tomentosa*.
Lanai D	*Abutilon eremitopetalum*, *Bonamia menziesii*, *Centaurium sebaeoides*, *Clermontia oblongifolia* ssp. *mauiensis*, *Ctenitis squamigera*, *Cyanea grimesiana* ssp *grimesiana*, *Cyanea macrostegia* ssp. *gibsonii*, *Cyrtandra munroi*, *Gahnia lanaiensis*, *Hedyotis mannii*, *Hedyotis schlechtendahliana* var. *remyi*, *Hibiscus brackenridgei*, *Labordia tinifolia* var. *lanaiensis*, *Melicope munroi*, *Spermolepis hawaiiense*, *Tetramolopium remyi*, and *Viola lanaiensis*.	*Adenophorus periens*, *Brighamia rockii*, *Cenchrus agrimonioides*, *Cyanea lobata*, *Diellia erecta*, *Diplazium molokaiensis*, *Hesperomannia arborescens*, *Isodendrion pyrifolium*, *Neraudia sericea*, *Solanum incompletum*, and *Vigna o-wahuensis*.
Lanai E		*Bidens micrantha* ssp. *kalealaha*.
Lanai F		*Hibiscus brackenridgei*.
Lanai G		*Portulaca sclerocarpa*.
Lanai H	*Portulaca sclerocarpa*.	

(ii) *Hawaiian plants—Constituent elements.*

(A) *Flowering plants.*

Family Apiaceae: *Spermolepis hawaiiensis* (NCN)

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

(*1*) Gulch slopes and ridge tops in dry forests dominated by *Diospyros sandwicensis*, or shrublands dominated by *Dodonaea viscosa*, with one or more of the following native plant species: *Nestegis sandwicensis*, *Nesoluma polynesicum*, *Psydrax odorata*, or *Rauvolfia sandwicensis*; and

(*2*) Elevations between 402 and 711 m (1,319 and 2,332 ft).

Family Asteraceae: *Bidens micrantha* ssp. *kalealaha* (kookoolau)

Lanai E, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Bidens micrantha* ssp. *kalealaha* on Lanai. Within this unit the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Gulch slopes in dry *Dodonaea viscosa* shrubland; and

(*2*) Elevations between 409 and 771 m (1,342 and 2,529 ft).

Family Asteraceae: *Hesperomannia arborescens* (NCN)

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

(*1*) Slopes or ridges in lowland mesic or wet forest containing one or more of the following associated native plant species: *Metrosideros polymorpha*, *Myrsine sandwicensis*, *Isachne distichophylla*, *Pipturus* spp., *Antidesma* spp., *Psychotria* spp., *Clermontia* spp., *Cibotium* spp., *Dicranopteris linearis*, *Bobea* spp., *Coprosma* spp., *Sadleria* spp., *Melicope* spp., *Machaerina* spp., *Cheirodendron* spp., or *Freycinetia arborea*; and

(*2*) Elevations between 737 and 1,032 m (2,417 and 3,385 ft).

Family Asteraceae: *Tetramolopium remyi* (NCN)

Lanai B and D, identified in the legal descriptions in (a)(1)(i)(E), constitute critical habitat for *Tetramolopium remyi* on Lanai. Within these units the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Red, sandy, loam soil in dry *Dodonea viscosa-Heteropogon contortus* communities with one or more of the following associated native species: *Bidens mauiensis*, *Waltheria indica*, *Wikstroemia oahuensis*, or *Lipochaeta lavarum*; and

(*2*) Elevations between 65 and 485 m (213 and 1,591 ft).

Family Campanulaceae: *Brighamia rockii* (pua ala)

Lanai D, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Brighamia rockii* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Sparsely vegetated ledges of steep, rocky, dry cliffs, with native grasses, sedges, herbs or shrubs; and

(*2*) Elevations between 119 and 756 m (390 and 2,480 ft).

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

Lanai D, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Clermontia oblongifolia* ssp. *mauiensis* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Gulch bottoms in mesic forests; and

(*2*) Elevations between 700 and 1,032 m (2,296 and 3,385 ft).

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

Lanai D, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Cyanea grimesiana* ssp. *grimesiana* on Lanai. Within this unit, 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 rocky or steep slopes of stream banks, with one or more of the following associated native plants: *Antidesma* spp., *Bobea* spp., *Myrsine* spp., *Nestegis sandwicensis*, *Psychotria* spp., or *Xylosma* spp.; and

(*2*) Elevations between 667 and 1,032 m (2,188 and 3,385 ft).

Family Campanulaceae: *Cyanea lobata* (haha)

Lanai D, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Cyanea lobata* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Gulches in mesic to wet forest and shrubland containing one or more of the following associated native plant species: *Freycinetia arborea*, *Touchardia latifolia*, *Morinda trimera*, *Metrosideros polymorpha*, *Clermontia kakeana*, *Cyrtandra* spp., *Xylosma* spp., *Psychotria* spp., *Antidesma* spp., *Pipturus albidus*, *Peperomia* spp., *Touchardia latifolia*, *Freycinetia arborea*, *Pleomele* spp., or *Athyrium* spp.; and

(*2*) Elevations between 664 and 1,032 m (2,178 and 3,385 ft).

Family Campanulaceae: *Cyanea macrostegia* ssp. *gibsonii* (haha)

Lanai D, identified in (a)(1)(i)(E), constitutes critical habitat for *Cyanea macrostegia* ssp. *gibsonii* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Flat to moderate or steep slopes, on lower gulch slopes or gulch bottoms, at edges of streambanks in lowland wet *Metrosideros polymorpha* forest or *Diplopterygium pinnatum-Metrosideros polymorpha* shrubland with one or more of the following associated native plants: *Dicranopteris linearis*, *Perrottetia sandwicensis*, *Scaevola chamissoniana*, *Pipturus albidus*, *Antidesma platyphyllum*, *Cheirodendron trigynum*, *Freycinetia arborea*, *Psychotria* spp., *Cyrtandra* spp., *Broussaisia arguta*, *Clermontia* spp., *Dubautia* spp., *Hedyotis* spp., *Ilex anomala*, *Labordia* spp., *Melicope* spp., *Pneumatopteris sandwicensis*, or *Sadleria* spp.; and

(*2*) Elevations between 738 and 1,032 m (2,421 and 3,385 ft).

Family Convolvulaceae: *Bonamia menziesii* (NCN)

Lanai D identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Bonamia menziesii* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Dry *Nestegis sandwicensis-Diospyros* spp. forest or dry *Dodonea viscosa* shrubland with one or more of the following associated native plants: *Bobea* spp., *Nesoluma polynesicum*, *Erythrina sandwicensis*, *Rauvolfia sandwicensis*, *Metrosideros polymorpha*, *Psydrax odorata*, *Dienella sandwicensis*, *Diospyros sandwicensis*, *Hedyotis terminalis*, *Melicope* spp., *Myoporum sandwicense*, *Nestegis sandwicense*, *Pisonia* spp., *Pittosporum*

spp., *Pouteria sandwicensis*, or *Sapindus oahuensis*; and

(*2*) Elevations between 315 and 885 m (1,033 and 2,903 ft).

Family Cyperaceae: *Cyperus trachysanthos* (puukaa)

Lanai A, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Cyperus trachysanthos* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Seasonally wet sites (mud flats, wet clay soil, or wet cliff seeps) on seepy flats or talus slopes in *Heteropogon contortus* grassland with *Hibiscus tiliaceus*; and

(*2*) Elevations between 0 and 46 m (0 and 151 ft).

Family Cyperaceae: *Gahnia lanaiensis* (NCN)

Lanai D, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Gahnia lanaiensis* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Flat to gentle ridgecrests in moist to wet clay in open areas or in moderate shade within lowland wet forest (shrubby rainforest to open scrubby fog belt or degraded lowland mesic forest), wet *Diplopterygium pinnatum-Dicranopteris linearis-Metrosideros polymorpha* shrubland, or wet *Metrosideros polymorpha-Dicranopteris linearis* shrubland with one or more of the following associated native species: mat ferns, *Doodia* spp., *Odontosoria chinensis*, *Ilex anomala*, *Hedyotis terminalis*, *Sadleria* spp., *Coprosma* spp., *Lycopodium* spp., *Scaevola* spp., or *Styphelia tameiameiae*; and

(*2*) Elevations between 737 and 1,032 m (2,417 and 3,385 ft).

Family Fabaceae: *Sesbania tomentosa* (ohai)

Lanai C, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Sesbania tomentosa* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Sandy beaches, dunes, or pond margins in coastal dry shrublands or mixed coastal dry cliffs with one or more of the following associated native plant species: *Chamaesyce celastroides*, *Cluscuta sandwichiana*, *Dodonaea viscosa*, *Heteropogon contortus*, *Myoporum sandwicense*, *Nama sandwicensis*, *Scaevola sericea*, *Sida fallax*, *Sporobolus virginicus*, *Vitex rotundifolia* or *Waltheria indica*; and

(*2*) Elevations between 44 and 221 m (144 and 725 ft).

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

Lanai D, identified in the legal descriptions in (a)(1)(i)(E), constitutes critical habitat for *Vigna o-wahuensis* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) *Nestegis sandwicensis* or *Diospyros sandwicensis* dry forest; and

(*2*) Elevations between 98 and 622 m (321 and 2,040 ft).

Family Gentianaceae: *Centaurium sebaeoides* (awiwi)

Lanai D, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Centaurium sebaeoides* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) The dry ledges which may or may not contain *Hibiscus brackenridgei;* and

(*2*) Elevations between 39 and 331 m (128 and 1,086 ft).

Family Gesneriaceae: *Cyrtandra munroi* (haiwale)

Lanai D, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Cyrtandra munroi* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Soil and rock substrates on slopes from watercourses in gulch bottoms and up the sides of gulch slopes to near ridgetops in rich, diverse mesic forest, wet *Metrosideros polymorpha* forest, and mixed mesic *Metrosiderospolymorpha* forest, with one or more of the following native plant species: *Diospyros sandwicensis*, *Bobea elatior*, *Myrsine lessertiana*, *Pipturus albidus*, *Pittosporum confertiflorum*, *Pleomele fernaldii*, *Sadleria cyatheoides*, *Scaevola chamissoniana*, *Xylosma hawaiiense*, *Cyrtandra grayii*, *Cyrtandra grayana Diplopterygium pinnatum*, *Hedyotis acuminata*, *Clermontia* spp., *Alyxia oliviformis*, *Coprosma* spp., *Dicranopteris linearis*, *Freycinetia arborea*, *Melicope* spp., *Perrottetia sandwicensis*, *Pouteria sandwicensis*, or *Psychotria* spp.; and

(*2*) Elevations between 667 and 1,016 m (2,188 and 3,332 ft).

Family Loganiaceae: *Labordia tinifolia* var. *lanaiensis* (kamakahala)

Lanai D, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Labordia tinifolia* var. *lanaiensis* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Gulch slopes in lowland mesic forest with one or more of the following associated native plant species: *Diospyros sandwicensis*, *Bobea elatior*, *Myrsine lessertiana*, *Pipturus albidus*, *Pittosporum confertiflorum*, *Pleomele fernaldii*, *Sadleria cyatheoides*, *Scaevola chamissoniana*, *Xylosma hawaiiense*, *Cyrtandra grayii*, *Cyrtandra grayana*, *Diplopterygium pinnatum*, *Hedyotis acuminata*, *Clermontia* spp., *Alyxia oliviformis*, *Coprosma* spp., *Dicranopteris linearis*, *Freycinetia arborea*, *Melicope* spp., *Perrottetia sandwicensis*, *Pouteria sandwicensis*, *Psychotria* spp., *Dicranopteris linearis*, or *Scaevola chamissoniana*; and

(*2*) Elevations between 558 and 1,013 m (1,830 and 3,323 ft).

Family Malvaceae: *Abutilon eremitopetalum* (NCN)

Lanai D, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Abutilon eremitopetalum* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Open lowland dry *Erythrina sandwicensis* or *Diospyros ferrea* forest on moderately steep north-facing slopes on red sandy soil and rock with one or more of the following native plant species: *Psydrax odorata*, *Dodonaea viscosa*, *Nesoluma polynesicum*, *Rauvolfia sandwicensis*, *Sida fallax*, or *Wikstroemia* spp.; and

(*2*) Elevations between 108 and 660 m (354 and 2,165 ft).

Family Malvaceae: *Hibiscus brackenridgei* (mao hau hele)

Lanai A, D and F, identified in the legal descriptions in (a)(1)(i)(E), constitute critical habitat for *Hibiscus brackenridgei* on Lanai. Within these units, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Lowland dry to mesic forest and shrubland with one or more of the following associated native plant species: *Dodonea viscosa*, *Psydrax odorata*, *Eurya sandwicensis*, *Isachne distichophylla*, or *Sida fallax*; and

(*2*) Elevations between 0 and 645 m (0 and 2,116 ft).

Family Poaceae: *Cenchrus agrimonioides* (kamanomano (= sandbur, agrimony))

Lanai D, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Cenchrus agrimonioides* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Slopes in mesic *Metrosideros polymorpha* forest and shrubland; and

(*2*) Elevations between 583 and 878 m (1,912 and 2,880 ft).

Family Portulacaceae: *Portulaca sclerocarpa* (poe)

Lanai G and H, identified in the legal descriptions in (a)(1)(i)(E), constitute critical habitat for *Portulaca sclerocarpa* on Lanai. Within these units, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Exposed ledges in thin soil in coastal communities; and

(*2*) At elevations between 0 and 82 m (0 and 269 ft).

Family Rubiaceae: *Hedyotis mannii* (pilo)

Lanai D, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Hedyotis mannii* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Dark, narrow, rocky gulch walls and steep stream banks in wet forests with one or more of the following associated native plant species: *Thelypteris sandwicensis*, *Sadleria* spp., *Cyrtandra grayii*, *Scaevola chamissoniana*, *Freycinetia arborea*, or *Carex meyenii*; and

(*2*) Elevations between 711 and 1,032 m (2,332 and 3,385 ft).

Family Rubiaceae: *Hedyotis schlechtendahliana* var. *remyi* (kopa)

Lanai D, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Hedyotis schlechtendahliana* var. *remyi* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Ridge crests in mesic windswept shrubland with a mixture of dominant plant taxa that may include *Metrosideros polymorpha*, *Dicranopteris linearis*, or *Styphelia tameiameiae* with one or more of the following associated native plant species: *Dodonaea viscosa*, *Odontosoria chinensis*, *Sadleria* spp., *Dubautia* spp., or *Myrsine* spp.; and

(*2*) Elevations between 558 and 1,032 m (1,830 and 3,385 ft).

Family Rutaceae: *Melicope munroi* (alani)

Lanai D, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Melicope munroi* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Slopes in lowland wet shrublands with one or more of the following associated native plant species: *Diplopterygium pinnatum*, *Dicranopteris linearis*, *Metrosideros polymorpha*, *Cheirodendron trigynum*, *Coprosma* spp., *Broussaisia arguta*, other *Melicope* spp., or *Machaerina angustifolia*; and

(*2*) Elevations between 701 and 1,032 m (2,299 and 3,385 ft).

Family Solanaceae: *Solanum incompletum* (popolo ku mai)

Lanai D, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Solanum incompletum* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Broad, gently sloping ridges in dry, *Dodonaea viscosa* shrubland with one or more of the following associated native plant species: *Heteropogon contortus*, *Lipochaeta* spp., or *Wikstroemia oahuensis*; and

(*2*) Elevations between 151 and 372 m (495 and 1,220 ft).

Family Urticaceae: *Neraudia sericea* (NCN)

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

(*1*) Gulch slopes or gulch bottoms in dry-mesic or mesic forest containing one or more of the following associated native plant species: *Metrosideros polymorpha*, *Diospyros sandwicensis*, *Nestegis sandwicensis*, or *Dodonaea viscosa*; and

(*2*) Elevations between 693 and 869 m (2,273 and 2,850 ft).

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

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

(*1*) Dry shrubland with one or more of the following associated native plant species: *Dodonaea viscosa*, *Lipochaeta* spp., *Heteropogon contortus*, or *Wikstroemia oahuensis*; and

(*2*) Elevations between 132 and 574 m (433 and 1,883 ft).

Family Violaceae: *Viola lanaiensis* (NCN)

Lanai D, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Viola lanaiensis* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Soil and decomposed rock substrate in open to shaded areas on moderate to steep slopes from lower gulches to ridgetops in *Metrosideros polymorpha-Dicranopteris linearis* lowland wet forest or lowland mesic shrubland with one or more of the following associated native plants: ferns and short windswept shrubs, *Scaevola chamissoniana*, *Hedyotis terminalis*, *Hedyotis centranthoides*, *Styphelia tameiameiae*, *Carex* spp., *Ilex anomala*, *Psychotria* spp., *Antidesma* spp., *Coprosma* spp., *Freycinetia arborea*, *Myrsine* spp., *Nestegis* spp., *Psychotria* spp., or *Xylosma* spp.; and

(*2*) Elevations between 639 and 1,032 m (2,096 and 3,385 ft).

(B) Ferns and Allies.

Family Aspleniaceae: *Ctenitis squamigera* (pauoa)

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

(*1*) Forest understory in diverse mesic forest and scrubby mixed mesic forest with one or more of the following native plant species: *Nestegis sandwicensis*, *Coprosma* spp., *Sadleria* spp., *Selaginella* spp., *Carex meyenii*, *Blechnum occidentale*, *Pipturus* spp., *Melicope* spp., *Pneumatopteris sandwicensis*, *Pittosporum* spp., *Alyxia oliviformis*, *Freycinetia arborea*, *Antidesma* spp., *Cyrtandra* spp., *Peperomia* spp., *Myrsine* spp., *Psychotria* spp., *Metrosideros polymorpha*, *Syzygium sandwicensis*, *Wikstroemia* spp., *Microlepia* spp., *Doodia* spp., *Boehmeria grandis*, *Nephrolepis* spp., *Perrotettia sandwicensis*, or *Xylosma* spp.; and

(*2*) Elevations between 640 and 944 m (2,099 and 3,096 ft).

Family Aspleniaceae: *Diellia erecta* (NCN)

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

(*1*) Brown granular soil with leaf litter and occasional terrestrial moss on north facing slopes in deep shade on steep slopes or gulch bottoms in *Pisonia* spp. forest with one or more native grasses or ferns; and

(*2*) Elevations between 651 and 955 m (2,135 and 3,132 ft).

Family Aspleniaceae: Diplazium molokaiense (asplenium-leaved asplenium)

Lanai D, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Diplazium molokaiense* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Shady, damp places in wet forests; and

(*2*) Elevations between 737 and 1,032 m (2,417 and 3,385 ft).

Family Grammitidaceae: Adenophorus periens (pendant kihi fern)

Lanai D, identified in the legal description in (a)(1)(i)(E), constitutes critical habitat for *Adenophorus periens* on Lanai. Within this unit, the currently known primary constituent elements of critical habitat are the habitat components provided by:

(*1*) Riparian banks of streams in well-developed, closed canopy areas of deep shade or high humidity in *Metrosideros polymorpha-Dicranopteris linearis-Diplopterygium pinnatum* wet forests, open *Metrosideros polymorpha* montane wet forest, or *Metrosideros polymorpha-Dicranopteris linearis* lowland wet forest with one or more of the following associated native plant species: *Machaerina angustifolia, Cheirodendron trigynum, Sadleria* spp., *Clermontia* spp., *Psychotria* spp., *Melicope* spp., *Freycinetia arborea, Broussaisia arguta, Syzygium sandwicensis,* or *Hedyotis terminalis;* and

(*2*) Elevations between 763 and 1,032 m (2,503 and 3,385 ft).

Dated: February 19, 2002.

Joseph E. Doddridge,

Acting Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. 02–4335 Filed 3–1–02; 8:45 am]

BILLING CODE 4310–55–P