
DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

112-94

RIN 1018-AB88

Endangered and Threatened Wildlife and Plants; Endangered Status for Three Plants From the Waianae Mountains, Island of Oahu, HI

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) determines endangered status pursuant to the Endangered Species Act of 1973, as amended (Act), for three plants: *Cyanea grimesiana* ssp. *obatae* (haha), *Diellia unisora* (no common name (NCN)), and *Gouania vitifolia* (NCN). These taxa are known primarily from the Waianae Mountain Range, located on the island of Oahu, Hawaii. The three plant taxa and their habitats have been adversely threatened to varying degrees by one or more of the following—habitat degradation and competition for space, light, water, and nutrients by naturalized, alien vegetation; and habitat degradation and potential predation by feral animals. Because of the low number of extant individuals and severely restricted distributions, populations of these taxa are subject to an increased likelihood of extinction and/or reduced reproductive vigor from stochastic events. This final rule implements the Federal protection and recovery provisions provided by the Act.

EFFECTIVE DATE: This rule becomes effective July 27, 1994.

ADDRESSES: The complete file for this final rule is available for public inspection, by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Pacific Islands Office, 300 Ala Moana Boulevard, Room 6307, P.O. Box 50167, Honolulu, Hawaii 96850.

FOR FURTHER INFORMATION CONTACT: Robert P. Smith, at the above address (808/541-2749).

SUPPLEMENTARY INFORMATION:

Background

Cyanea grimesiana ssp. *obatae* and *Diellia unisora* are endemic to the Waianae Mountain Range on the western side of the island of Oahu, Hawaii. The only known extant population of *Gouania vitifolia* also occurs in the Waianae Mountains, but the species is also known historically from West Maui and the island of Hawaii.

The island of Oahu is formed from the remnants of two large shield volcanoes, the older Waianae Volcano on the west and the younger Koolau Volcano on the east. Because of the loss of their original shield volcano shape as the result of extensive erosion, today these volcanoes are called "mountains" or "ranges," and consist of long, narrow ridges. The Waianae Mountains were built by eruptions that took place primarily along three rift zones. The two principal rift zones run in a northwestward and south-southeastward direction from the summit, and a lesser one runs to the northeast. The range is approximately 40 miles (mi) (64 kilometers (km)) long. The caldera lies between the north side of Makaha Valley and the head of Nanakuli Valley (Macdonald *et al.* 1983). The Waianae Mountains are in the rain shadow of the parallel Koolau Mountains. Except for Mt. Kaala, the highest point on Oahu (4,020 feet (ft)) (1,225 meters(m)), the Waianaes receive much less rainfall (Wagner *et al.* 1990). The median annual rainfall for the Waianae Mountains varies from 20 to 75 inches (in.) (50 to 190 centimeters (cm)), with only the small summit area of Mt. Kaala receiving the highest amount.

The land that supports these three plant taxa is owned by the State of Hawaii, the Federal government, and a private estate. Plants on Federal land are located on portions of Lualualei Naval Reservation, under the jurisdiction of the U.S. Department of Defense.

Discussion of the Three Taxa

Harold St. John (1978) described *Cyanea grimesiana* ssp. *obatae* based upon a specimen collected by John K. Obata in the Kaluaa Gulch of the Waianae Mountains, Oahu, in 1965. St. John named the subspecies in honor of its discoverer.

Cyanea grimesiana ssp. *obatae*, a member of the bellflower family (Campanulaceae), is a shrub, usually unbranched, growing from 3.3 to 10.5 ft (1 to 3.2 m) tall. Its leaves are 10.5 to 23 in. (27 to 58 cm) long by 5.5 to 12.5 in. (14 to 32 cm) wide and are deeply cut into 9 to 12 lobes per side. The plant usually has small prickles on its stem

and leaves. Clusters of 6 to 12 stalked flowers arise from the leaf axils. Sepals are fused to the ovary forming a cup 0.3 to 0.6 in. (0.7 to 1.6 cm) long with small, narrow, triangular lobes at the tips. The petals are purplish or greenish to yellow-white, often washed or striped with magenta, and are about 2 to 3 in. (5.5 to 8 cm) long and 0.2 to 0.4 in. (0.5 to 1 cm) wide. Fruits are elliptical orange berries, 0.7 to 1.2 in. (1.8 to 3 cm) long. This subspecies can be distinguished from the other two subspecies by its short, narrow, calyx lobes which are not fused or overlapping (Lammers 1990, St. John 1978).

Historically, *C. grimesiana* ssp. *obatae* is known from the southern Waianae Mountains from Puu Hapapa to Kaaikukai (Hawaii Heritage Program (HHP) 1992a1 to 1992a6, Lammers 1990), a distance of about 4 mi (6.5 km). This taxon is known to be extant in Kaluaa Gulch, but may also still exist in Ekahanui and North Palawai Gulches. All populations are on privately owned land (HHP 1992a2, 1992a4, 1992a6; Joel Lau, The Nature Conservancy, Steve Perlman, National Tropical Botanical Garden, and Loyal Mehrhoff, U.S. Fish and Wildlife Service, pers. comms., 1993). Five plants are known from the Kaluaa population and as many as 13 plants may be found in the other 2 populations (J. Lau, pers. comms., 1992, 1993), though these populations have not been seen in the last 10 years. *C. grimesiana* ssp. *obatae* typically grows on steep, moist, shaded slopes in diverse mesic to wet forests at an elevation of 1,800 to 2,200 ft (550 to 670 m) (HHP 1992a2, Lammers 1990). Associated plants include both native and introduced species such as *Pipturus albidus* (mamaki), *Charpentiera* (papala), *Claoxylon sandwicense* (po'ola), *Pisonia* (papala kepau), *Acacia koa* (koa), *Aleurites moluccana* (kukui), *Cyanea membranacea* (haha), and various fern taxa (HHP 1992a2). The major threats to *C. grimesiana* ssp. *obatae* are competition from alien plants such as *Clidemia hirta* (Koster's curse) and *Schinus terebinthifolius* (Christmas berry), predation of seeds or fruits by introduced slugs, and stochastic extinction and/or reduced reproductive vigor due to the small number of extant individuals (HHP 1992a2; L. Mehrhoff, pers. comm., 1993). Habitat degradation by feral pigs is a potential threat (HHP 1992a2).

Donald L. Topping discovered *Diellia unisora* growing on a shaded, mossy bank in Pohakea Pass, Waianae Mountains, Oahu, in 1932. It was first reported and illustrated by Frances Smith (1934) who believed it to be a

specimen of *D. pumila*, although she pointed out several differences between that species and the Topping specimen. Warren H. Wagner, Jr., believing that the plant discovered by Topping merited specific recognition, described the new species, giving it the specific epithet *unisora* in reference to the usually single, marginal spore-producing body (Wagner 1951).

Diellia unisora, in the fern family Polypodiaceae, grows from a slender, erect rhizome (underground stem), 0.2 to 1.2 in. (0.5 to 3 cm) tall and 0.2 to 0.4 in. (0.5 to 1 cm) in diameter, which is covered with the bases of the leaf stalks and a few small black scales. Stalks of the fronds are black and shiny, and about 0.8 to 2 in. (2 to 5 cm) long. The fronds are linear, 3 to 12 in. (8 to 30 cm) tall by 0.2 to 1.2 in. (0.5 to 3 cm) broad, with 20 to 35 pinnae (leaflets) per side, and gradually narrowing towards the apex. The pinnae are usually strongly asymmetrical in outline, unequally triangular, with mostly entire (smooth) margins. There usually is a single marginal sorus (the spore-producing body) running along the upper margin of the underside of the pinna. This species is distinguished from others in the genus by a rhizome completely covered by the persisting bases of the leaf stalks, and few, very small scales, by sori mostly confined to the upper pinnae margins, and by delicate fronds gradually and symmetrically narrowing toward the apex (Wagner 1951, 1952).

Historically, *D. unisora* was known from steep, grassy, rocky slopes on the western side of the Waianae Mountains, Oahu (HHP 1992b1 to 1992b4; Wagner 1951, 1952). This species is known to be extant in three areas of the southern Waianae Mountains—South Ekahanui Gulch, Palawai Gulch, and the Pualii-Napepeiauolelo Ridge (HHP 1992b2 to 1992b4). The three known populations, which are on Lualualei Naval Reservation and on privately owned land, are scattered over a distance of about 2 mi (3 km), and contain approximately 705 to 755 individuals (Center for Plant Conservation 1992; HHP 1992b2 to 1992b4; J. Lau, pers. comm., 1993). *Diellia unisora* is a terrestrial fern which typically grows in deep shade or open understorey in dryland forest at an elevation of 1,750 to 2,500 ft (530 to 760 m) (HHP 1992b2 to 1992b4). Associated species include koa, Christmas berry, *Psidium cattleianum* (strawberry guava), and *Metrosideros polymorpha* ('ohi'a), and a mixture of alien and native grasses, forbs, and shrubs (HHP 1992b2 to 1992b4). The major threat to *D. unisora* is competition from alien plant taxa

(Christmas berry, *Melinis minutiflora* (moulasses grass), *Passiflora suberosa* (huehue haole), and (strawberry guava). Habitat degradation by feral pigs is a potential threat (HHP 1992b2, 1992b4).

Gouania vitifolia was first collected on dry hills in the district of Waianai [Waianae] during the U.S. Exploring Expedition in 1840. Asa Gray was given the task of preparing a report on all of the foreign plants collected by the expedition. Of the two volumes he produced concerning these specimens, only one was published, and in it *G. vitifolia* was described as a new species (Gray 1854). The species epithet was derived from the Latin *vitis*, a vine or grapevine, and *folium*, leaf, as the toothed leaves of this species resemble those of the grape. The Maui Island population of this species, first collected above Lahaina on West Maui by Edward F. Bishop, probably in the 1870s, was described and named *G. bishopii* in honor of its discoverer by William Hillebrand (1888). In his monograph of the genus, St. John (1969) described *G. hawaiiensis* as a new species based upon a collection made in the Kau District of Hawaii Island in 1853 by Jules Remy. Both of these taxa are currently considered synonyms of *G. vitifolia* (Wagner *et al.* 1990).

Gouania vitifolia, a member of the buckthorn family (Rhamnaceae), is a climbing shrub or woody vine with tendrils. Leaves are papery in texture with a moderate to dense covering of short, soft hairs on both surfaces. The leaves are elliptic to broadly oval in outline with toothed or lobed margins and 1.2 to 3.2 in. (3 to 8 cm) long by 0.8 to 1.9 in. (2 to 4.8 cm) wide. Flowers are arranged in axillary spikes 0.3 to 2.8 in. (0.8 to 7 cm) long. The flowers are small with sepals and petals ranging from 0.03 to 0.04 in. (0.7 to 1.1 mm) in length. Both the sepals and petals are white. The 2- or 3-winged fruit are about 0.4 in. (9 to 10 mm) long. Seeds are oval, glossy, dark brown, and about 0.1 to 0.2 in. (3.4 to 5 mm) long. This species is the only Hawaiian member of the genus with tendrils and toothed leaf margins (St. John 1969, Wagner *et al.* 1990).

Historically, *G. vitifolia* was known from West Maui, the Kau District of the island of Hawaii, and the northwestern portion of the Waianae Mountains in Makaleha, Keaau, and Waianae Kai Valleys (Degener and Greenwell 1947, HHP 1992c1 to 1992c5, St John 1969, Wagner *et al.* 1990). A single population of five individuals was discovered in 1990 on the slopes of Waianae Kai Ridge on State-owned land (Anon. 1991, HHP 1992c5). The five plants are close to one another, growing in a single patch in a forest of mostly naturalized, non-native

taxa (HHP 1992c5), and may represent clones of a single individual (Joel Lau, HHP, pers. comm., 1992). A second, smaller patch was discovered near the first, and probably represents a second clone. Information is scant, but data from herbarium labels indicate that *G. vitifolia* prefers dry, rocky ridges and slopes in dry shrubland or dry to mesic forests at an elevation of about 2,000 ft (610 m). Associated taxa include strawberry guava, kukui, Christmas berry, huehue haole, and mamaki (HHP 1992c5). The major threats to *G. vitifolia* are competition from alien plant taxa such as strawberry guava and Christmas berry, habitat destruction by feral pigs, and stochastic extinction and/or reduced reproductive vigor due to the small number of extant individuals, all of which may be genetically identical (HHP 1992c5).

Previous Federal Action

Federal action on these plants began as a result of section 12 of the Endangered Species 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. *Diellia unisora* was considered threatened and *Gouania vitifolia* was considered extinct in that document. On July 1, 1975, the Service published a notice in the *Federal Register* (40 FR 27823) of its 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 giving notice of its intention to review the status of the plant species named therein. As a result of that review, on June 16, 1976, the Service 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 species. *Gouania vitifolia* was considered endangered in the proposed rule, but *D. unisora*, as a threatened species, was not included. The list of 1,700 plant species 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.

General comments received in response to the 1976 proposal are summarized in an April 26, 1978, *Federal Register* publication (43 FR 17909). In 1978, amendments to the Act required that all proposals over 2 years old be withdrawn. A 1-year grace period was given to proposals already over 2

years old. On December 10, 1979, the Service 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. The Service published updated notices of review for plants on December 15, 1980 (45 FR 82479), September 27, 1985 (50 FR 39525), and February 21, 1990 (55 FR 6183). *Gouania vitifolia* was included as a Category 1* species on all three notices of review. Category 1* species are those for which the Service has on file substantial information on biological vulnerability and threats in the recent past, but which may have already become extinct. Because a population of *G. vitifolia* was discovered in 1990, it is considered herein for listing. *Diellia unisora* was considered a Category 1 species on the 1980 and 1985 notices, but was changed to a Category 1* species on the 1990 notice. Category 1 species are those for which the Service has on file substantial information on biological vulnerability and threats to support preparation of listing proposals. *Cyanea grimesiana* ssp. *obatae* first appeared on the 1990 notice, as a category 2 species. Category 2 species are those for which there is some evidence of vulnerability, but for which there are not enough data to support listing proposals at the time. Additional recently acquired biological information supports listing of *C. grimesiana* ssp. *obatae*. The September 30, 1993, *Federal Register* (58 FR 51143) notice of review indicated all three of these species were proposed for listing.

Section 4(b)(3)(B) of the Act requires the Secretary to make findings on certain pending petitions within 12 months of their receipt. Section 2(b)(1) of the 1982 amendments further requires that all petitions pending on October 13, 1982, be treated as having been newly submitted on that date. On October 13, 1983, the Service found that the petitioned listing of these species was warranted but precluded by other pending listing actions, in accordance with section 4(b)(3)(B)(iii) of the Act; notification of this finding was published on January 20, 1984 (49 FR 2485). Such a finding requires the petition to be recycled, pursuant to section 4(b)(3)(C)(i) of the Act. The finding was reviewed in October of 1984, 1985, 1986, 1987, 1988, 1989, 1990, and 1991. Publication of the proposed rule constituted the final 1-year finding for these species.

On December 14, 1992, the Service published in the *Federal Register* (57 FR 39066) a proposal to list the three plant taxa from the Waianae Mountains,

island of Oahu, as endangered. This proposal was based primarily on information supplied by the Hawaii Heritage Program and observations by botanists and naturalists. The Service now determines the three species primarily from the Waianae Mountains to be endangered with the publication of this final rule.

Summary of Comments and Recommendations

In the December 14, 1992, proposed rule and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the

development of a final listing decision. The public comment period ended on January 28, 1993. Appropriate State agencies, county governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. A newspaper notice inviting public comment was published in the "Honolulu Advertiser" on December 26, 1993. Two letters of comment were received—one from a conservation organization and the other from a concerned citizen—supporting the listing of these taxa from the Waianae Mountains, island of Oahu, but raising no specific issues.

Summary of Factors Affecting the Species

Section 4 of the Act and regulations (50 CFR Part 424) promulgated to implement the Act set forth the procedures for adding species to the Federal lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Cyanea grimesiana* ssp. *obatae* St. John (haha), *Diellia unisora* W.H. Wagner (no common name (NCN)), and *Gouania vitifolia* A. Gray (NCN) are as follows (Table 1):

TABLE 1.—SUMMARY OF THREATS

Species	Alien animals			Alien plants	Limited numbers*
	Pigs	Goats	Rodents		
<i>Cyanea grimesiana</i> ssp. <i>obatae</i>	P	P	P	X	X1,2
<i>Diellia unisora</i>	P	P	P	X	X1
<i>Gouania vitifolia</i>	X	P	P	X	X1,2

X=Immediate and significant threat.
 P=Potential threat.
 *No more than 100 individuals and/or no more than 5 populations.
 1 No more than 5 populations.
 2 No more than 10 individuals.

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* The habitats of the plants included in this final rule have undergone extreme alteration because of past and present land management practices, including deliberate alien plant and animal introductions, agricultural development, and military use (Frierson 1973, Wagner et al. 1985). Competition with alien plants and degradation of habitat by feral pigs are considered the greatest present threats to the three taxa.

All of the three species are threatened by competition from one or more alien plant taxa. *Schinus terebinthifolius* (Christmas berry), an aggressive tree introduced to Hawaii before 1911 as an ornamental, has had particularly detrimental impacts (Cuddihy and Stone 1990). This fast-growing alien plant is able to form dense thickets, displacing other plants, and also may release a chemical that inhibits the growth of other species (Smith 1985). As early as the 1940s, Christmas berry had invaded the dry slopes of Oahu and it is now replacing the native vegetation of much of the southern Waianae Mountains (Cuddihy and Stone 1990). Christmas berry is gradually invading other areas of the Waianae Mountains as well, and now threatens to occupy the habitat of the three endangered plant

taxa (HHP 1992a2, 1992b2 to 1992b4, 1992c5).

Psidium cattleianum (strawberry guava), a pervasive alien tree in the southern Waianae Mountains, is distributed mainly by feral pigs and fruit-eating birds (Smith 1985). Like Christmas berry, strawberry guava is capable of forming dense stands to the exclusion of other plant taxa (Cuddihy and Stone 1990). Populations of *Diellia unisora* and *Gouania vitifolia* are immediately threatened by competition with this alien plant (HHP 1992b3, 1992c5).

Clidemia hirta (Koster's curse), a noxious shrub first cultivated in Wahiawa on Oahu, spread to the Koolau Mountains in the early 1960s, where it is now rapidly displacing native vegetation. Koster's curse spread to the Waianae Mountains around 1970 and is now widespread throughout Honouliuli (Cuddihy and Stone 1990, Culliney 1988). This species forms a dense understory, shading other plants and hindering plant regeneration. At present, Koster's curse is the major threat to *Cyanea grimesiana* ssp. *obatae* (HHP 1992a2).

The native vegetation of the leeward ridges of the Waianae Mountains is being replaced by *Melinis minutiflora* (molasses grass), another aggressive alien plant species. Molasses grass ranges from the dry lowlands to the

lower wet forests, especially in open areas with sparse vegetation. This fire-adapted grass produces a dense mat capable of smothering plants, provides fuel for fires, and carries fires into areas with native woody plants (Cuddihy and Stone 1990). One population of *Diellia unisora* is vulnerable to molasses grass (HHP 1992b2, 1992b4).

Passiflora suberosa (huehue haole), a vine that smothers small plants in the subcanopy of dryland habitats (Smith 1985), poses an immediate threat to some populations of *Diellia unisora* (HHP 1992b2, 1992b3). With its major infestations in the Waianae Mountains, it is also a probable threat to the only known extant population of *Gouania vitifolia* (HHP 1992c5).

Feral pigs (*Sus scrofa*) have been in the Waianae Mountains for about 150 years and are known to be one of the major current modifiers of forest habitats (Stone 1985). Pigs damage the native vegetation by rooting and trampling the forest floor and encourage the expansion of alien plants that are better able to exploit the newly tilled soils than are native taxa (Stone 1985). Pigs also disseminate alien plant taxa through their feces and on their bodies, accelerating the spread of alien plant taxa within the native forest. Present throughout the Waianae Mountains in low numbers, feral pigs pose a potential threat as some pig trails and rooting

have been seen in the general areas of all three plant taxa included in this rule. The rooting was localized and no direct damage to any of the three plant taxa was noted. However, this situation could change very quickly (HHP 1992a2, 1992b2, 1992b3, 1992c5).

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* Illegal collecting for scientific or horticultural purposes or excessive visits by individuals interested in seeing rare plants could result from increased publicity. This is a potential threat to all of the taxa included in this final rule, but especially to *Cyanea grimesiana* ssp. *obatae*, which is known from only a single population of five plants, and *Gouania vitifolia*, which is known from only one population of two probable clones. Collection of whole plants or reproductive parts of these taxa could cause an adverse impact on the gene pool and threaten the survival of the taxa. Disturbance to the area by human trampling also could promote erosion and greater ingress by competing alien taxa.

C. *Disease or predation.* Introduced slugs have been observed to feed on ripe fruits and seeds of *Cyanea grimesiana* ssp. *obatae*. This predation could seriously affect the reproduction of this taxon (L. Mehrhoff, pers. comm., 1993). In addition, rats (*Rattus* spp.) and feral goats (*Capra hircus*), as well as feral pigs, are known from the area and damage to fruits, seeds, and plants from their foraging on other plant taxa has been observed.

D. *The inadequacy of existing regulatory mechanisms.* Of the three taxa in this final rule, two have populations located on private land, one on State land, and one on Federal land. *Diellia unisora* is known only from Federal and private lands; *Gouania vitifolia* is known only from State land; *Cyanea grimesiana* ssp. *obatae* is known only from private lands. Federal listing automatically results in listing under Hawaii State law, which prohibits taking of endangered plants in the State and encourages conservation by State agencies. State regulations prohibit the removal, destruction, or damage of plants found on State lands. However, the regulations are difficult to enforce because of limited personnel. Hawaii's Endangered Species Act (HRS, Sect. 195D-4(a)) states, "Any species of aquatic life, wildlife, or wild plant that has been determined to be an endangered species pursuant to the [Federal] Endangered Species Act shall be deemed to be an endangered species under the provisions of this chapter * * *". Further, the State may enter into agreements with Federal agencies to

administer and manage any area required for the conservation, management, enhancement, or protection of endangered species (HRS, sect. 195D-5(c)). Funds for these activities could be made available under section 6 of the Federal Act (State Cooperative Agreements). Listing of these three plant taxa, therefore, reinforces and supplements the protection available to the taxa under State law. The Federal Act also offers additional protection to these three taxa because it is a violation of the Act for any person to remove, cut, dig up, damage, or destroy any such plant in an area not under Federal jurisdiction in knowing violation of State law or regulation or in the course of any violation of a State criminal trespass law.

E. *Other natural or manmade factors affecting its continued existence.* The small number of populations and individuals of all of these taxa increases the potential for extinction from stochastic events. The limited gene pool may depress reproductive vigor, or a single human-caused or natural environmental disturbance could destroy a significant percentage of the individuals or the only known extant population. All three taxa in this rule are known from three or fewer populations.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by these taxa in determining to issue this final rule. Based on this evaluation, the preferred action is to list these three plant taxa as endangered. These taxa are known from fewer than five populations. The three taxa are threatened by one or more of the following: Habitat degradation and competition from alien plants; habitat degradation and potential predation by feral animals, particularly pigs; and lack of legal protection or difficulty in enforcing laws which are already in effect. Small population size and limited distribution make these taxa particularly vulnerable to extinction and/or reduced reproductive vigor from stochastic events. Because these three taxa are in danger of extinction throughout all or a significant portion of their ranges, they fit the definition of endangered as defined in the Act.

Critical habitat is not being designated for the three taxa included in this rule, for reasons discussed in the "Critical Habitat" section of this final rule.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that, to the maximum

extent prudent and determinable, the Secretary designate critical habitat at the time a species is listed as endangered or threatened. The Service finds that designation of critical habitat is not presently prudent for these taxa. The publication of precise maps and descriptions of critical habitat in the **Federal Register** and local newspapers as required in a proposal for critical habitat would increase the degree of threat to these plants from take or vandalism and, therefore, could contribute to their decline and increase enforcement problems. The listing of these taxa as endangered publicizes the rarity of the plants and thus can make these plants attractive to researchers, curiosity seekers, or collectors of rare plants. All involved parties and the major landowners have been notified of the importance of protecting the habitat of these taxa. Protection of the habitat of the taxa will be addressed through the recovery process. Although one of these taxa is located on a federally owned military reservation, it is on steep slopes near the reservation boundaries where it is unlikely to be impacted by Federal activities. Therefore, the Service finds that designation of critical habitat for these taxa is not prudent at this time, because such designation would increase the degree of threat from vandalism, collecting, or other human activities and because it is unlikely to aid in the conservation of these taxa.

Available Conservation Measures

Conservation measures provided to species listed as endangered under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain activities. Recognition through listing results in public awareness and conservation actions by Federal, State, and local agencies, private organizations, and individuals. The Act provides for possible land acquisition and cooperation with the State and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against certain activities involving listed plants are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) requires Federal agencies to confer informally with the Service on

any action that is likely to jeopardize the continued existence of species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) requires Federal agencies to insure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service. One of these plant taxa, *Diellia unisora*, is located on the Lualualei Naval Reservation under the jurisdiction of the U.S. Department of Defense. However, because the plant is located on steep slopes near the reservation boundaries, it is unlikely to be impacted by Federal activities. There are no other known Federal activities that occur within the present known habitat of these three plant taxa.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 set forth a series of general prohibitions and exceptions that apply to all endangered plant species. With respect to the three endangered plant taxa, all prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61, would apply. These prohibitions, in part, make it illegal with respect to any endangered plant for any person subject to the jurisdiction of the United States to import or export; transport in interstate or foreign commerce in the course of a commercial activity; sell or offer for sale in interstate or foreign commerce; remove and reduce to possession any such species

from an area under Federal jurisdiction; maliciously damage or destroy any such species on any area under Federal jurisdiction; or remove, cut, dig up, damage, or destroy any such species on any other area in knowing violation of any State law or regulation or in the course of any violation of a State criminal trespass law. Certain exceptions apply to agents of the Service and State conservation agencies. The Act and 50 CFR 17.62 and 17.63 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered plant species under certain circumstances. It is anticipated that few trade permits would ever be sought or issued because the plants are not common in cultivation nor in the wild.

Requests for copies of the regulations concerning listed plants and inquiries regarding prohibitions and permits may be addressed to the Office of Management Authority, U.S. Fish and Wildlife Service, 4401 North Fairfax Drive, Room 432, Arlington, Virginia 22203-3507 (703/358-2104).

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment or Environmental Impact Statement, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

A complete list of all references cited herein, as well as others, is available upon request from the Pacific Islands Office (see ADDRESSES section).

Authors

The primary authors of this rule are Marie M. Bruegmann, Loyal A. Mehrhoff, and Derral R. Herbst of the Fish and Wildlife Service Pacific Islands Office (see ADDRESSES section).

List of Subjects in 50 CFR Part 17

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

Regulation Promulgation

Accordingly, part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, is hereby amended 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. Section 17.12(h) is amended by adding the following, in alphabetical order under the families indicated, and by adding a new family "Polypodiaceae—Fern family," in alphabetical order, to the List of Endangered and Threatened Plants to read as follows:

§ 17.12 Endangered and threatened plants.
 * * * * *
 (h) * * *

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Campanulaceae—Bellflower family:						
<i>Cyanea grimesiana</i> ssp. <i>obatae</i>	Haha	U.S.A. (HI)	E	540	NA	NA
Polypodiaceae—Fern family:						
<i>Diellia unisora</i>	None	U.S.A. (HI)	E	540	NA	NA
Rhamnaceae—Buckthorn family:						
<i>Gouania vitifolia</i>	None	U.S.A. (HI)	E	540	NA	NA

Dated: June 6, 1994.

Mollie H. Beattie,

Director, Fish and Wildlife Service.

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