

50 CFR Part 17

RIN 1018-AB42

Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for Two Na Pali Coast Plants: *Hedyotis st.-johnii* (Na Pali Beach Hedyotis) and *Schiedea apokremnos* (Ma'oli'oli)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) determines two plants, *Hedyotis st.-johnii* (Na Pali beach hedyotis) and *Schiedea apokremnos* (ma'oli'oli), to be endangered pursuant

to the Endangered Species Act of 1973, as amended (Act). These species are known only from the northwest (Na Pali) coast of the island of Kauai, Hawaii. *Hedyotis st.-johnii* is known from 5 populations totaling less than 200 individuals, and *S. apokremnos* from 5 known populations totaling about 100 plants. The latter species is threatened by predation and habitat degradation by feral goats, and both species are threatened by competition from alien plant species. The small number and size of populations are a considerable threat to both species, as the limited gene pool may depress reproductive vigor, or a single environmental disturbance could destroy a significant

percentage of the extant individuals. This rule implements the protection and recovery provisions provided by the Act for these plants.

EFFECTIVE DATE: October 30, 1991.

ADDRESSES: The complete file for this rule is available for public inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, 300 Ala Moana Boulevard, room 6307, Honolulu, Hawaii 96813.

FOR FURTHER INFORMATION CONTACT: Joan E. Canfield, at the above address (808/541-2749 or FTS 551-2749).

SUPPLEMENTARY INFORMATION:

Background

Hedyotis st.-johnii was first collected in 1947 by Harold St. John, E.J. Britten, and R.S. Cowan on the vertical sea cliffs between Kalalau and Honopu valleys on Kauai. The next collection was made by B.C. Stone in 1956 from the same location. Two years later Stone and Lane (1958) described the plant as a new species, naming it in honor of its discoverer. All subsequent collections have been from a 4.5 mile (mi) (7.2 kilometer (km)) long section of the Na Pali coast: between Kalalau and Honopu Beaches, and from Nualolo Valley, Nualolo Kai, and Milolii Beach.

Hedyotis st.-johnii is still extant in all of those areas except perhaps Nualolo Kai, which has not been resurveyed in 11 years (Carolyn Corn and Robert Hobdy, State Division of Forestry and Wildlife, and Steven Perlman, Hawaii Plant Conservation Center (HPCC), pers. comms., 1990). Less than 200 individuals have been seen, with some populations numbering as low as 1 plant (Corn 1984, Hawaii Heritage program (HHP) 1990b, HPCC 1990a). Similar, inaccessible habitat might harbor as yet undiscovered individuals (C. Corn and R. Hobdy, pers. comms., 1990). Known only from State-owned land, *H. st.-johnii* is restricted to Na Pali Coast State Park.

Schiedea apokremnos was first collected in the early 1900's by J.M. Lydgate from an unrecorded locality on Kauai. Harold St. John made the next collection at Nualolo Kai on the Na Pali coast in 1965. Five years later, he described the taxon as a new species (St. John 1970), naming it for the plant's habitat of steep cliffs. All subsequent collections have been from Kaaweiki Ridge and three areas along a 6.5 mi (10.5 km) long section of the Na Pali coast: Milolii Valley, Kalalau Beach, and between Kaaalahina and Manono ridges. The species is probably extant at all locations except Nualolo Kai, although the Kalalau and Milolii populations have not been revisited for over 6 years (C. Corn, Timothy Flynn,

National Tropical Botanical Garden, and R. Hobdy, pers. comms., 1990). A total of about 100 plants has been seen, with only the Kaaalahina-Manono population numbering more than 5 individuals (Corn 1984; HHP 1990c; HPCC 1990b; T. Flynn and S. Perlman, pers. comms., 1990). As with *Hedyotis st.-johnii*, more plants could exist in similar, inaccessible habitat (R. Hobdy and S. Perlman, pers. comms., 1990). In addition, a *Schiedea* recently collected from a gulch near the head of Kalalau Valley, if identified as *S. apokremnos*, would extend the known range of this species (R. Hobdy, pers. comm., 1990). Like *H. st.-johnii*, *S. apokremnos* is known strictly from State-owned land. The Kaaweiki population is in Puu Ka Pele Forest Reserve, while all others are in Na Pali Coast State Park.

Hedyotis st.-johnii is a succulent perennial herb of the coffee family (Rubiaceae) with slightly woody, trailing, quadrangular stems up to 1 foot (ft) (30 centimeters (cm)) long. The fleshy leaves are clustered toward the base of the stem and are broadly ovate to broadly elliptic, 2 to 6 inches (in) (5.5 to 15 cm) long and about 2 in (3.5 to 7.5 cm) wide. Clusters of flowers are borne on 3 to 6 in (7 to 15 cm) long flowering stems. The leafy, broadly ovate calyx lobes are about 0.1 in (3 to 4 millimeters (mm)) long and wide, enlarging in fruit to about 0.4 in (8 to 11 mm) long and wide. The green petals are fused into a tube about 0.2 in (5 to 8 mm) long and wide. The fruit consists of kidney-shaped capsules with dark brown to blackish angular seeds. *H. st.-johnii* is distinguished from related species by its succulence, basally clustered fleshy leaves, shorter floral tube, and large leafy calyx lobes when in fruit (Wagner *et al.* 1990).

Schiedea apokremnos is a low, branching shrub of the pink family (Caryophyllaceae) that is 8 to 20 in (20 to 50 cm) tall. The leaves are oppositely arranged, oblong, somewhat fleshy and glabrous, and about 1 to 2 in (3 to 5 cm) long and 0.2 to 0.5 in (0.6 to 1.2 cm) wide. The flowers lack petals and are in clusters with green and often purple-tinged bracts and sepals; the sepals are about 0.1 in (2 to 3 mm) long. The round to kidney-shaped seeds are produced in capsules. *Schiedea apokremnos* is distinguished from related species by shorter sepals, nectaries, and capsules (Wagner *et al.* 1990).

Hedyotis st.-johnii and *Schiedea apokremnos* grow in the crevices of near-vertical coastal cliff faces. While *H. st.-johnii* is confined to north-facing, nearly vertical sea cliffs within the spray zone below 250 ft (75 meters (m)) elevation, *S. apokremnos* extends 0.3 mi

(0.5 km) inland, occupying cliffs and rock outcrops from 200 to 1,100 ft (60 to 330 m) elevation (Carr 1982; HHP 1990b; HPCC 1990a, 1990b; C. Corn and T. Flynn, pers. comms., 1990). Sparse dry coastal shrub vegetation with *Artemisia australis* ('ahinahina), *Chamaesyce celastroides* ('akoko), and the alien *Pluchea symphytifolia* (sourbush) is typical of the habitat of *H. st.-johnii* and lower elevation sites of *S. apokremnos* (HHP 1990b, 1990c; HPCC 1990a, 1990b; S. Perlman, pers. comm., 1990). The upper elevation site of *S. apokremnos* is dominated by the introduced *Leucaena leucocephala* (koa haole), with natives *Wilkesia hobbdi* (dwarf iliau), *Lipochaeta connata* (nehe), and *Lobelia niuhauensis* (T. Flynn, pers. comm., 1990).

The greatest immediate threat to the survival of *Schiedea apokremnos* is predation and habitat degradation by feral goats. As a result of past goat activity, *Hedyotis st.-johnii* is almost entirely restricted to sites inaccessible to goats, where the plants are now threatened by competition from alien plant species. Alien plants are a threat to at least one population of *S. apokremnos* as well. The small size of most populations and a restricted distribution are serious potential threats to these two species. The limited gene pool may depress reproductive vigor, or a single environmental disturbance could destroy a significant percentage of the extant individuals. Landslides and fire pose additional potential threats to both species. Some *S. apokremnos* individuals are functionally female and must be cross-pollinated to set seed. This reproductive strategy may threaten populations with few individuals (Stephen Weller, University of California at Irvine, pers. comm., 1990).

Federal action on *Hedyotis st.-johnii* began as a result of section 12 of the Act, which directed the Secretary of the Smithsonian Institution to prepare a report on plants considered to be endangered, threatened, or extinct in the United States. This report, designated as House Document No. 94-51, was presented to Congress on January 9, 1975. In that document, *H. st.-johnii* was considered to be endangered; *S. apokremnos* was not included. 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 taxa 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, including *H. st.-johnii*. 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.

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 that portion of the June 16, 1976, proposal that had not been made final, along with four other proposals that had expired. The Service published an updated notice of review for plants on December 15, 1980 (45 FR 82479), including *Hedyotis st.-johnii* as a Category 1 candidate. 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. In the updated notice of review for plants published by the Service on September 27, 1985 (50 FR 39525), and February 21, 1990 (55 FR 6183), *Schiedea apokremnos* was included along with *H. st.-johnii* as a Category 1 candidate.

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, and 1989. On August 3, 1990, the Service published in the Federal Register (55 FR 31612) a proposal to list *Hedyotis st.-johnii* and *Schiedea apokremnos* as endangered. This proposal was based primarily on information supplied by the Hawaii Heritage Program, several reports from the Hawaii Division of Forestry and

Wildlife, and observations of botanists and naturalists. The Service now determines *Hedyotis st.-johnii* and *Schiedea apokremnos* to be endangered species with the publication of this rule.

Summary of Comments and Recommendations

In the August 3, 1990, 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 October 2, 1990. Appropriate State agencies, county and city governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. A newspaper notice was published in The Garden Island on August 15, 1990, which invited general public comment. The one comment that was received was from a conservation organization that noted it had no information or advice to add to the proposed rule.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that *Hedyotis st.-johnii* and *Schiedea apokremnos* should be classified as endangered species. Procedures found at section 4 of the Endangered Species Act (16 U.S.C. 1533) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act were followed. 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 *Hedyotis st.-johnii* B. Stone and Lane (Na Pali beach hedyotis) and *Schiedea apokremnos* St. John (ma'oli'oli) are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

Feral goats and cattle have altered and degraded the vegetation of much of Kauai, including the valleys and slopes where *Hedyotis st.-johnii* and *Schiedea apokremnos* have been collected (Corn *et al.* 1979, HHP 1990a). Goats have inhabited these rugged areas of the island for over 150 years (Cuddihy and Stone 1990). An estimated 1,650 goats inhabited the Na Pali coast in 1982; they are still abundant throughout the portion of the coast that *H. st.-johnii* and *S. apokremnos* inhabit (HHP 1990d, Tomich 1986). These goats are managed by the State as a game species with a limited hunting season (Tomich 1986).

The restriction of these two plant species to inaccessible cliffs suggests that goat predation may have eliminated them from more accessible locations, as is the case for other rare plants of the Na Pali coast (Corn *et al.* 1979; R. Hobdy, pers. comm., 1990). While browsing on *S. apokremnos* and vegetation adjacent to both species, goats disturb the ground, which limits seedling development, accelerates erosion, reduces habitat, and promotes the invasion of more aggressive alien plants (Carr 1982, Corn *et al.* 1979, HHP 1990a, Herbst 1989, Scott *et al.* 1986). Koa haole and *Hyptis pectinata* (comb hyptis) are common invasive alien species at the Kaaweiki site of *S. apokremnos* (T. Flynn, pers. comm., 1990). Most of the other populations of *S. apokremnos* and some populations of *H. st.-johnii*, confined to sparsely vegetated cliff crevices, are apparently not threatened by alien plants (R. Hobdy, pers. comm., 1990). However, alien plants do constitute the primary threat to other populations of *H. st.-johnii*, with sourbush being the main competitor (C. Corn and S. Perlman, pers. comms., 1990).

Landslides are another potential threat to *Hedyotis st.-johnii* (HPCC 1990a) and *Schiedea apokremnos* (C. Corn, pers. comm., 1990). Vegetation was destroyed by a recent landslide near Honopu Beach on a cliff similar to habitat of *H. st.-johnii* (C. Corn, pers. comm., 1990). Corn *et al.* (1979) consider fire an immediate serious threat to the rare plants of the cliff faces and valleys of the Na Pali coast. Under dry conditions, human-set fires would spread rapidly and destroy these plants, due to the strong prevailing winds and dry fuel load on cliff ledges (Corn *et al.* 1979). Fire poses a potential and growing threat to *H. st.-johnii* and *S. apokremnos*, especially as already heavy recreational use of the Na Pali Coast State Park increases (Corn *et al.* 1979, Culliney 1988, HHP 1990d). Because of their inaccessible location, however, it is unlikely that these two species would be otherwise threatened by proposed park development (C. Corn and Wayne Souza, Division of State Parks, pers. comms., 1990).

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Illegal collecting for scientific or horticultural purposes or excessive visits by people interested in seeing rare plants could result from increased publicity and could seriously affect the species (HHP 1990d). The co-occurrence at one site of *Schiedea apokremnos* and

dwarf iliau, currently proposed for listing as an endangered species (Herbst 1989), could bring additional publicity and visitation. Disturbance to the accessible areas by trampling would promote erosion and greater ingress by competing alien species.

C. Disease or Predation

Predation by feral goats is probably the greatest present threat to the survival of *Schiedea apokremnos* (T. Flynn, R. Hobdy, and S. Perlman, pers. comms., 1990). Goat browsing on this species has been observed at the Kaaweiki population for the past several years (T. Flynn, pers. comm., 1990). At precisely the same locality, grazing damage by increasing numbers of goats is recognized as a serious present threat to another rare species, dwarf iliau (Carr 1982, Herbst 1989). The most accessible population of *Hedyotis st.-johnii*, behind Kalalau Beach, is threatened by goat predation (S. Perlman, pers. comm., 1990). Other than that site, however, goat predation has apparently already eliminated *H. st.-johnii* from all sites goats are capable of reaching (C. Corn, R. Hobdy, and S. Perlman, pers. comms., 1990). No evidence of disease or predation by other species has been reported for either species.

D. The Inadequacy of Existing Regulatory Mechanisms

All populations of *Hedyotis st.-johnii* and *Schiedea apokremnos* are located on State-owned park or forest reserve land. State regulations prohibit the removal, destruction, or damage of plants found on these lands. However, the regulations are difficult to enforce because of limited personnel. Hawaii's Endangered Species Act (Hawaii Revised Statutes (HRS), sect. 195D-4(A)) states, "Any species of aquatic life, wildlife, or land plant that has been determined to be an endangered species pursuant to the (Federal) Endangered Species Act (of 1973) 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 *H. st.-johnii* and *S. apokremnos* will therefore reinforce and supplement the protection available to the species under State law. The Federal Act will also offer additional protection to the two species, because it is a violation of the

Act for any person to remove, cut, dig up, damage, or destroy an endangered plant in an area not under Federal jurisdiction in knowing violation of any 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 size of the extant populations (totaling 100 individuals of *Schiedea apokremnos* and less than 200 of *Hedyotis st.-johnii*) is in itself a considerable threat to these species. The limited gene pool may depress reproductive vigor, or a single fire, landslide, or other natural or human-caused environmental disturbance could destroy a significant percentage of the known individuals. Reproduction of *S. apokremnos* may also be potentially threatened by the species' breeding system: Some progeny of one individual are known to be unisexual, requiring cross-pollination to set seed (S. Weller, pers. comm., 1990). If those plants do not flower simultaneously or are too widely separated for pollination, no seed will be set.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by these two species in determining to make this rule final. Based on this evaluation, the preferred action is to list *Hedyotis st.-johnii* and *Schiedea apokremnos* as endangered. For the two species, only about 200 and 100 individuals respectively are known in the wild, and they face threats from feral goat predation and habitat degradation. Competing alien plants, fires, and landslides pose additional threats. Small population size makes these species particularly vulnerable to extinction from stochastic events. Because these two species 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 these species for reasons discussed in the "Critical Habitat" section of this 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 concurrently with determining a species to be endangered or threatened. The Service finds that designation of critical habitat is not presently prudent for these two species. Such a determination would result in no known benefit to the species. The publication of descriptions

and maps required when critical habitat is designated would increase the degree of threat of trampling (causing erosion and invasion of alien plants), vandalism, and taking at the Kaaweiki site of *Schiedea apokremnos*. *Hedyotis st.-johnii* might be subject to an increased threat of taking and vandalism as well. The listing of these species as endangered publicizes the rarity of the plants and, thus, can make them attractive to researchers, curiosity seekers, or collectors of rare plants.

All involved parties and the landowner have been notified of the location and importance of protecting the habitat of these two species. Protection of the species' habitat will be addressed through the recovery process and, if applicable, the section 7 consultation process. Therefore, the Service finds that designation of critical habitat for *Hedyotis st.-johnii* and *Schiedea apokremnos* 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 conservation of these species.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain activities. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States 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 or threatened 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)(2) of the Act requires Federal agencies to insure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed 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. There are no known Federal activities that might affect either of these species.

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 plants. With respect to *Hedyotis st. johnii* and *Schiedea apokremnos*, all trade prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61, 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 these species in interstate or foreign commerce; remove and reduce to possession any such species from areas under Federal jurisdiction; maliciously damage or destroy any such species on any area under Federal jurisdiction; or remove, cut, dig up, damage, or destroy listed plants 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 these two species are not common in cultivation or in the wild. Requests for copies of the regulations on plants and inquiries regarding them may be addressed to the Office of Management Authority, U.S. Fish and Wildlife Service, 4401 North Fairfax Drive, room 432-ARLSQ, Arlington, Virginia 22203-3507 (703/358-2104 or FTS 921-2093).

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, 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

Carr, G.D. 1982. Unpublished status survey of *Wilkesia hobbayi* St. John (Hobby's iliau). U.S. Fish and Wildlife Service, Honolulu, Hawaii. 24 pp.

Corn, C.A. 1984. Na Pali botanical findings, July 16-21, 1984. Div. of Forestry and Wildlife, Dept. of Land and Natural Resources, Honolulu, Hawaii. Unpubl. 119 pp.

Corn, C., G. Clarke, L. Cuddihy, and L. Yoshida. 1979. A botanical reconnaissance of Kalalau, Honopu, Awaawapuhi, Nualolo, and Milolii Valleys and Shorelines—Na Pali, Kauai. Endangered Species Program, Div. of Forestry and Wildlife, Dept. of Land and Natural Resources, Honolulu, Hawaii. Unpubl. 34 pp.

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

Culliney, J.L. 1988. Islands in a far sea: nature and man in Hawaii. Sierra Club Books, San Francisco. 410 pp.

Hawaii Heritage Program. 1990a. Biological database and reconnaissance survey of Na Pali Coast State Park, Island of Kauai. Prepared for Dept. of Land and Natural Resources, Div. of State Parks, Honolulu. Unpubl. 70 pp.

Hawaii Heritage Program. 1990b. Element Occurrence Record for *Heāyotis st. johnii*, dated July 22, 1989, Honolulu. Unpubl. 2 pp.

Hawaii Heritage Program. 1990c. Element Occurrence Record for *Schiedea apokremnos*, dated July 9, 1989, Honolulu. Unpubl. 2 pp.

Hawaii Heritage Program. 1990d. Management recommendations for Na Pali Coast State Park, Halelea District, Island of Kauai. Prepared for Div. of State Parks, Honolulu, Hawaii. Unpub. 18 pp.

Hawaii Plant Conservation Center. 1990a. Accession data for *Hedyotis st. johnii* (905273.000), dated June 9, 1990, Lawai, Kauai. Unpubl. 1 p.

Hawaii Plant Conservation Center. 1990b. Accession data for *Schiedea apokremnos* (905272.000), dated June 8, 1990, Lawai, Kauai. Unpubl. 1 p.

Herbst, D.R. 1989. Proposed rule for *Wilkesia Hobbayi* (Dwarf iliau). Federal Register 54(189):40444-40447.

St. John, H. 1970. The "staminodia" of the genus *Schiedea* (Caryophyllaceae) and

three new Hawaiian species. Hawaiian plant studies 32 [i.e., 33]. Pacific Sci. 24:245-254.

Scott, J.M., S. Mountainspring, F.L. Ramsey, and C.B. Kepler. 1986. Forest bird communities of the Hawaiian Islands: their dynamics, ecology, and conservation. Stud. Avian Biol. 9:1-431.

Stone, B.C., and I. Lane. 1956. A new *Hedyotis* from Kauai, Hawaiian Islands. Pacific Sci. 12:139-145.

Tomich, P.Q. 1986. Mammals in Hawaii. 2nd ed. Bishop Museum Special Publ. 76. Bishop Museum Press, Honolulu. 375 pp.

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

Author

The primary author of this final rule is Dr. Joan E. Canfield, Fish and Wildlife Enhancement, Pacific Islands Office, U.S. Fish and Wildlife Service, 300 Ala Moana Boulevard, Room 6307, P.O. Box 50167, Honolulu, Hawaii 96850 (808/541-2749 or FTS 551-2749).

List of Subjects in 50 CFR Part 17

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

Regulations Promulgation

PART 17—[AMENDED]

Accordingly, part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, is amended as set forth below:

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; Public Law 99-625, 100 Stat. 3500; unless otherwise noted.

2. Amend § 17.12(h) by adding the following, in alphabetical order under the families Caryophyllaceae and Rubiaceae, respectively, to the List of Endangered and Threatened Plants:

§ 17.12 Endangered and threatened plants.

* * * * *
(h) * * *

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Caryophyllaceae—Pink family:						
<i>Schiedea apokremnos</i>	Ma'oli'oli	U.S.A. (HI)	E	441	NA	NA
Rubiaceae—Coffee family:						

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
<i>Hedyotis st. johnii</i>	Na Pali beach hedyotis.....	U.S.A. (HI).....	E	441	NA	NA

Dated: September 20, 1991.

Bruce Blanchard,

Acting Director, Fish and Wildlife Service.

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