Report this information quarterly for each separate SOG:

—Summaries of any 3-hour exceedances of the SO_2 limit for the SOG.

Report these flags as they occur:

—Measured refinery flasher pitch sulfur content over 3 percent.

—Continuous emission monitoring system measurements of RFG hydrogen sulfide content over 39 grains per 100 dry standard cubic feet.

—Hours during which any fuel other than natural gas is burned in boilers subject to the New Source Performance Standards (NSPS).

It must also be noted in specific language in the permit that if any fuel other than natural gas is burned in the boilers or heaters which are regulated by the New Source Performance Standards (NSPS boilers), the requirements of 40 CFR part 60 will apply. This will assure that the permit does not shield the source from enforcement of the NSPS. It should be noted in the permit that if Shell Oil decides to start burning other fuels than natural gas in the NSPS boilers, the NSPS requirements will change the recordkeeping and reporting requirements for those boilers, possibly necessitating separate fuel input and pollutant emissions measurements for the NSPS boilers.

A federally enforceable operating permit that includes these requirements would address the enforcement deficiencies identified in the above cited June 1, 1989, technical support document to USEPA's satisfaction.

VI. Proposed Rulemaking Action and Solicitation of Public Comment

USEPA proposes to approve the January 4, 1989, submittal as a revision to the Illinois SO_2 SIP for Wood River Township. The submittal consists of amended 35 IAC Sections 214.101, 214.102, 214.104, and 214.382. The emission limits set forth in the submittal have been shown to protect the NAAQS, and the enforceability deficiencies in the rule have been addressed through federally enforceable operating permit conditions. When a federally enforceable operating permit for Shell Oil which includes the reporting and recordkeeping requirements identified by USEPA has been issued and has become effective, USEPA will finalize approval of the January 4, 1989, SIP submittal. If Illinois fails to issue an adequate federally enforceable operating permit for Shell Oil, USEPA will disapprove the January 4, 1989, submittal. Upon final USEPA approval of these rules, the September 28, 1984, SIP call is considered to be satisfied for Wood River Township.

Public comments are solicited on the requested SIP revision and on USEPA's proposal to approve the requested revision. Public comments received by April 23, 1993 will be considered in the development of USEPA's final rulemaking action.

Nothing in this action should be construed as permitting, allowing or establishing a precedent for any future request for revision to any SIP. USEPA shall consider each request for revision to the SIP in light of specific technical, economic, and environmental factors and in relation to relevant statutory and regulatory requirements.

This action has been classified as a Table 2 action by the Regional Administrator under the procedures published in the **Federal Register** on January 19, 1989, (54 FR 2214–2225). On January 6, 1989, the Office of Management and Budget (OMB) waived Table 2 and 3 SIP revisions (54 FR 2222) from the requirements of Section 3 of Executive Order 12291 for a period of 2 years. USEPA has submitted a request for a permanent waiver for Table 2 and 3 SIP revisions. OMB has agreed to continue the temporary waiver until such time as it rules as USEPA's request.

Under the Regulatory Flexibility Act, 5 U.S.C. 600 *et seq.*, USEPA must prepare a regulatory flexibility analysis assessing the impact of any proposed or final rule on small entities. (5 U.S.C. 603 and 604.) Alternatively, USEPA may certify that the rule will not have a significant impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and government entities with jurisdiction over populations of less than 50,000.

SIP approvals under section 110 and subchapter I, part D of the Clean Air Act do not create any new requirements, but simply approve requirements that the State is already imposing. Therefore, because the Federal SIP approval does not impose any new requirements, I certify that it does not have a significant impact on any small entities affected. Moreover, due to the nature of the Federal-State relationship under the Clean Air Act, preparation of a regulatory flexibility analysis would constitute federal inquiry into the economic reasonableness of State action. The Clean Air Act forbids USEPA to base its actions concerning SIPs on such grounds. *Union Electric Co.* v. *USEPA*, 427 U.S. 246, 256–66 (S. Ct. 1976); 42 U.S.C. 7410(a)(2).

List of Subjects in 40 CFR Part 52

Air pollution control, Reporting and recordkeeping requirements, Sulfur oxides.

Note.—Incorporation by reference of the State Implementation Plan for the State of Illinois was approved by the Director of the Federal Register on July 1, 1982.

Authority: 42 U.S.C. 7401–7671q.

Dated: March 2, 1993.

Valdas V. Adamkus,

Regional Administrator.

[FR Doc. 93–6724 Filed 3–23–93; 8:45 am]

BILLING CODE 6560–50–M

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AB88

Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for Three Plants from the Island of Nihoa, Hawaii

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) proposes endangered status pursuant to the Endangered Species Act of 1973, as amended (Act), for three plants: *Amaranthus brownii* (no common name (NCN)), *Pritchardia remota* (loulu), and *Schiedea verticillata* (NCN). These three species are endemic to the island of Nihoa, Hawaiian Islands. Two of the species are threatened by competition with the one widespread alien plant that has established on the island. Two of the species grow in steep, rocky habitats and are threatened by natural and human-caused substrate loss such as erosion and rock slides. Because of the steep and easily disturbed habitat, these species are threatened by degradation of their environment due to human impact. Because of the small numbers of existing individuals and populations and their narrow distributions, which are limited to the 0.25 square mile (sq mi) (0.65 sq kilometer (km)) island, these species are subject to an increased likelihood of extinction and/or reduced reproductive vigor from stochastic events. This proposal, if made final, would implement the Federal protection and recovery provisions provided by the Act. Comments and materials related to this proposal are solicited.

DATES: Comments from all interested parties must be received by May 24, 1993. Public hearing requests must be

received by May 10, 1993.

ADDRESSES: Comments and materials concerning this proposal should be sent to Robert P. Smith, Field Supervisor, Pacific Islands Office, U.S. Fish and Wildlife Service, 300 Ala Moana Boulevard, room 6307, P.O. Box 50167, Honolulu, Hawaii 96850. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Robert P. Smith, at the above address (808/541–2749 or FTS 551–2749).

SUPPLEMENTARY INFORMATION:

Background

Amaranthus brownii, Pritchardia remota, and *Schiedea verticillata* are endemic to the island of Nihoa, Hawaii. Nihoa is the largest and highest of the uninhabited islands of Hawaii. The Hawaiian Archipelago is made up of 132 islands, reefs, and shoals forming an arch 1,600 statute mi (2,580 km) long in the middle of the Pacific Ocean. The eight major Hawaiian Islands occur in the southeast 400 mi (650 km) of the arch. Northwest of Niihau, small islands and atolls are widely scattered over the remaining 1,100 mi (1,750 km) of the arch and make up the Northwestern Hawaiian Islands (NWHI) (formerly called the Leeward Islands) (Department of Geography 1983, Macdonald *et al.* 1983, Walker 1990). Nihoa, the largest of the lava islands west of Niihau, is the closest to the main islands, situated 170 mi (275 km) northwest of Kauai. Over many years, waves driven by prevailing trade winds eroded the island into its current shape, which is the remnant southwest quadrant of the original huge volcanic cone. The east, west, and north sides of Nihoa are sheer cliffs, and the south coast comprises low cliffs with rock benches and one small beach (Cleghorn 1987, Gagne and Conant 1983, Macdonald *et al.* 1983). The island, formed about 7.5 million years ago by a single shield volcano, now measures only 0.85 mi (1.4 km) long, an average of 0.3 mi (0.5 km) wide, and 156 acres (ac) (63.1 hectares (ha)) in area (Macdonald *et al.* 1983, Walker 1990). The highest point, 896 feet (ft) (273 meters (m)) in elevation (Conant 1985), is located at one of the two peaks on Nihoa, which are separated by a depression dissected by six valleys (Macdonald *et al.* 1983). The elevation of the island is not sufficient to increase precipitation from that which would fall on a flat island, and the yearly rainfall of 20 to 30 inches (in) (508 to 762 millimeters (mm)) per year, usually concentrated in the winter months, is the result of unpredictable rain squalls passing over the island (Carlquist 1980, Cleghorn 1987). Valleys are deep and have little sediment, indicating that their streams were once powerful, but the only water on the island now is found in three freshwater seeps (Cleghorn 1987).

Nihoa, with the most diverse flora and fauna of any of the NWHI, presents a relatively intact low-elevation dryland ecosystem with a complement of plants, arthropods, and birds (Gagne 1982). Such areas were probably common in the main Hawaiian Islands prior to their disturbance by Polynesian agricultural practices (Cuddihy and Stone 1990). Nihoa was inhabited, beginning in the thirteenth century by a small group of Polynesian settlers, who terraced and cultivated most of the gently sloping area of the island, a total of 12 to 31 ac (4.9 to 12.5 ha) or 7.7 to 20 percent of the area of the island. Most of the island was unsuitable for cultivation, and habitation did not persist for a long period of time, so much of the natural ecosystem remained intact (Cleghorn 1987, Emory 1928, Harrison 1990). Animals now found on or near Nihoa include: a small, resident population of *Monachus schauinslandi* (Hawaiian monk seal), a listed endangered species; *Chelonia mydas* (green sea turtle), a listed threatened species; 17 species of breeding seabirds; several migratory seabirds; 2 endemic land birds, *Acrocephalus familiaris* (Nihoa millerbird) and *Telespyza ultima* (Nihoa finch), both listed endangered species; 6 species of endemic land snails; and 35 endemic and 26 indigenous arthropods, many only recently discovered. A total of 26 vascular plant species have been found on Nihoa: 3 species endemic to Nihoa, *Amaranthus brownii, Pritchardi remota* (loulu), and *Schiedea verticillata*; 9 species endemic to the Hawaiian Islands, *Chamaesyce celastroides* var. *celastroides* ('akoko), *Chenopodium oahuense* ('aheahea), *Eragrostis variabilis* (kawelu), *Panicum torridum* (kakonakona), *Portulaca villosa* ('ihi), *Rumex albescens* (hu'ahu'ako), *Sesbania tomentosa* ('ohai), *Sicyos pachycarpus* (kupala), and *Solanum nelsonii* (popolo); 8 species indigenous to Hawaii, *Boerhavia diffusa* (alena), *Heliotropium curassavicum* (seaside heliotrope), *Ipomoea indica* (koali 'awa), *Ipomoea pes-caprae* ssp. *brasiliensis* (pohuehue), *Portulaca lutea* ('ihi), *Sida fallax* ('ilima), *Solanum americanum* (glossy nightshade), and *Tribulus cistoides* (nohu); and 6 alien species which have naturalized in Hawaii, *Cenchrus echinatus* (common sandbur), *Nephrolepis multiflora* (sword fern), *Paspalum* sp., *Portulaca oleracea* (pigweed), *Setaria verticillata* (bristly foxtail, and *Tetragonia tetragonioides* (New Zealand spinach) (Conant 1985, Conant and Herbst 1983, Gagne and Conant 1983, Harrison 1990, Herbst 1977).

Bare rock and unvegetated soil make up about one-third of the surface of Nihoa. All vegetation is classified as being part of Coastal Communities, including Coastal Dry Communities and a Coastal Mesic Community. Coastal Dry Shrublands include two forms of 'Ilima (*Sida*) Shrubland; prostrate plants near the shore and erect plants in more sheltered sites. The 'Aweoweo (*Chenopodium* or 'aheahea) Coastal Shrubland includes 'aheahea and popolo as codominants, as well as 'ilima and several other less frequent species. The Loulu (*Pritchardia*) Coastal Forest, a type of Coastal Mesic Forest, contains *Pritchardia remota* as the only dominant (Gagne and Cuddihy 1990).

Nihoa is owned by the Federal government and is included within the boundaries of the City and County of Honolulu. It is part of the State of Hawaii Wildlife Refuge and is classified as Conservation District land, the island itself in the Protective Subzone and the surrounding water in the Resource Subzone. Nihoa is part of the Hawaiian Islands National Wildlife Refuge, which is managed by the Service, and has been designated a Research Natural Area (Clapp *et al.* 1977; Conant 1985; Department of the Interior 1986a, 1986b; Harrison 1990; Honolulu 1988; Miller 1983).

Discussion of the Three Species Proposed for Listing

Amaranthus brownii was first collected by Edward L. Caum during the Tanager Expedition in 1923. Erling Christophersen and Caum named it in honor of Dr. F.B.H. Brown in 1931.

Amaranthus brownii, a member of the amaranth family (Amaranthaceae), is an annual herb with leafy upright or ascending stems, 1 to 3 ft (30 to 90 centimeters (cm)) long. The slightly hairy, alternate leaves are long and narrow, 1.6 to 2.8 in (4 to 7 cm) long, 0.06 to 0.16 in (1.5 to 4 mm) wide, and more or less folded in half lengthwise. Flowers are either male or female, and both sexes are found on the same plant. The green flowers are subtended by two oval, bristle-tipped bracts about 0.04 in (1 mm) long and 0.03 in (0.7 m m) wide. Each flower has three bristle-tipped sepals which are lance-shaped and 0.05 in (1.3 mm) long by 0.03 in (0.8 mm) wide in male flowers and spatula-

shaped and 0.03 to 0.04 in (0.8 to 1 mm) long by 0.01 to 0.02 in (0.2 to 0.5 mm) wide in female flowers. Male flowers have three stamens; female flowers have two stigmas. The flattened, oval fruit, which does not split open at maturity, is 0.03 to 0.04 in (0.8 to 1 mm) long and 0.02 to 0.03 in (0.6 to 0.8 mm) wide and contains one shiny, lens-shaped, reddish black seed. This species can be distinguished from other Hawaiian members of the genus by its spineless leaf axils, its linear leaves, and its fruit which does not split open when mature (Wagner *et al.* 1990).

When *Amaranthus brownii* was first collected in 1923, it was "most common on the ridge leading to Millers Peak, but abundant also on the ridges to the east" (Herbst 1977). The 2 known populations are separated by a distance of 0.25 mi (0.4 km) and contain approximately 35 plants: about 23 plants near Millers Peak and about a dozen plants in Middle Valley. During its growing season of December through July, *Amaranthus brownii* typically grows on rocky outcrops in fully exposed locations at elevations between 390 and 700 ft (120 and 213 m). Associated species include 'aheahea, kakonakona, and kupala. Pigweed, an invasive alien species, is widespread on Nihoa and grows in habitat similar to *Amaranthus brownii*. Because it grows on rocky outcrops, *Amaranthus brownii* is more likely to be affected by substrate changes. Due to the small numbers of populations and individuals and its limited distribution, this species is threatened by stochastic extinction and/or reduced reproductive vigor. This species may have experienced a reduction in total numbers due to disturbances resulting from Polynesian settlement of Nihoa. Seeds have been collected for cultivation, but resulting germination and survival rates were very low, indicating that there may have been a reduction in the reproductive vigor of the species (Hawaii Heritage Program (HHP) 1990a1, 1990a2; Wagner *et al.* 1985, 1986, 1990).

In 1858, Dr. Rooke brought seed of a palm from Nihoa and planted it on the palace grounds in Honolulu (Hillebrand 1888). A Hillebrand specimen, probably collected from this cultivated tree, was used by Odoardo Beccari (1890) to describe *Pritchardia remota*. Otto Kuntze transferred the species to other genera, resulting in *Washingtonia remota* (Kuntze 1891) and later *Eupritchardia remota* (Kuntze 1898). In their 1921 monograph of the genus, Beccari and Joseph Rock included the species in *Pritchardia*, as do the authors of the current treatment (Read and Hodel 1990).

Pritchardia remota, a member of the palm family (Arecaceae), is a tree 13 to 16 ft (4 to 5 m) tall with a ringed, wavy trunk about 5.9 in (15 cm) in diameter. The rather ruffled, fan-shaped leaves are about 31 in (80 cm) in diameter and are somewhat waxy to pale green with a few tiny scales on the lower surface. The flowering stalks, up to 12 in (30 cm) long, are branched and have flowers arranged spirally along the hairless stalks. Below each flower is a bract 0.08 to 0.1 in (2 to 3 mm) long. The flower consists of a cup-shaped, three-lobed caly (fusxed sepals); three petals, each about 0.2 in (6 mm) long; six stamens; and a three-lobed stigma. The pale greenish brown fruit is almost globose, 0.7 to 0.8 in (1.9 to 2 cm) long and about 0.7 in (1.8 to 1.9 cm) in diameter. This is the only species of *Pritchardia* on Nihoa and can be distinguished from other species of the genus in Hawaii by its wavy leaves; its short, hairless inflorescences; and its small, globose fruits (Beccari and Rock 1921, Read and Hodel 1990).

Pritchardia remota is known from two presently extant populations along 0.1 mi (0.2 km) of the length of each of two valleys which are about 0.4 mi (0.6 km) apart on opposite sides of Nihoa. Including seedlings, 680 plants are found in scattered groups: 387 plants in West Palm Valley and 293 in East Palm Valley (Herbst 1977). Earlier totals were somewhat smaller, probably because younger seedlings were not counted (Herbst 1977). An uncollected palm, no longer extant, was observed growing on Laysan Island and may have been this species (Ely and Clapp 1973, Rock 1913). Most of the populations of *Pritchardia remota* are crowded into scattered, small groves on abandoned agricultural terraces lower in the valleys. A few trees also grow at the bases of basaltic cliffs on the steep outer slopes of each of the two valleys. Plants grow from 660 to 2600 ft (200 to 800 m) in elevation (Wagner *et al.* 1990). *Pritchardia remota* is unusual among Hawaiian members of the genus in that it occurs in a dry area. Fossil loulu stems have been found near sea level on Oahu, which may indicate that the genus was more widespread before so much lowland habitat was altered for human use (Carlquist 1980, Cuddihy and Stone 1990). Within the Loulu Coastal Forest Community, *Pritchardia remota* assumes complete dominance with a closed canopy and thick layers of fallen fronds in the understory (Gagne and Cuddihy 1990). Plants growing near the groves and in association with the single individuals include 'aheahea, 'ilima, popolo, and some 'ohai. Lichens grow on the trunks of the trees (Sheila Conant, University of Hawaii, pers. comm., 1991; Derral Herbst, U.S. Fish and Wildlife Service (USFWS), pers. comm., 1991). *Pritchardia remota* provides nesting and other habitat for *Sula sula rubipes* (red-footed boobies) as well as occasional perching space for *Anous stolidus pileatus* (brown noddies), two of the resident seabirds on Nihoa (Conant 1985). *Pritchardia remota* is in cultivation in several botanical gardens. The species is threatened by stochasitc extinction due to the small number of populations and the plant's narrow range (Conant 1985; Karen Shigematsu, Lyon Arboretum, pers. comm., 1991).

The first specimens of *Schiedea verticillata* were collected near Derbys Landing in 1923. Brown (in Christophersen and Caum 1931) chose the specific epithet to refer to the verticillate (whorled) arrangement of the leaves. Although Sherff (1944) transferred the species to the genus *Alsinidendron*, current workers (Wagner *et al.* 1990) consider it to be a species of *Schiedea*.

Schiedea verticillata, a member of the pink family (Caryophyllaceae), is a perennial herb which dies back to an enlarged root during dry seasons. The stems, which can reach 1.3 to 2 ft (0.4 to 0.6 m) in length, are upright or sometimes pendent. The stalkless leaves are fleshy, broad, and pale green; are usually arranged in threes; and measure 3.5 to 5.9 in (9 to 15 cm) long and 2.8 to 3.5 in (7 to 9 cm) wide. Flowers are arranged in open, branched clusters, usually 6.7 to 9.8 in (17 to 25 cm) long. Opposite or whorled pale green bracts, located at inflorescence branches and underneath the flowers, measure 0.2 to 1.6 in (6 to 40 mm) long at the central branch and 0.1 to 0.2 in (3.5 to 6 mm) long on the side branches and underneath the flowers. Each petalless flower is positioned on a stalk 0.2 to 0.8 in (5 to 20 mm) long and has 5 lance-shaped sepals 0.3 to 0.4 in (8 to 10 mm) long, 5 nectaries, 10 stamens, and 4 or 5 styles. The ovoid capsule measures 0.3 to 0.4 in (7 to 9 mm) long and releases reddish to grayish brown seeds, about 0.03 in (0.7 to 0.8 mm) long. This species, the only member of its genus to grow in the NWHI, is distinguished from other species of the genus by its exceptionally large sepals and the usually three leaves per node (Wagner *et al.* 1990).

All historically known populations of *Schiedea verticillata* are known to be extant. Five populations are scattered in the western 10 percent of the island in an area about 0.06 mi (0.1 km) by 0.4 mi (0.6 km), and a sixth population is

found on the far eastern end of the island 0.7 mi (1.2 km) away. The 6 populations contain a total of 385 to 414 individuals: At Dogs Head, at least 95 plants have been observed; a population at Devils Slide consists of 96 to 100 plants; in West Palm Valley, 2 or 3 plants have been seen in the upper portion and 30 to 38 plants have been counted in the lower portion; the Pinnacle Peak population contains 12 to 25 individuals; at Millers Peak, 2 to 5 plants have been observed; and another population on the east spur of the island contains 148 plants (HHP 1990b1 to 1990b6). *Schiedea verticillata* typically grows in soil pockets and cracks on coastal cliff faces at elevations between 100 and 890 ft (30 and 270 m) (Wagner *et al.* 1990, Weller *et al.* 1990). Associated species include 'aheahea, beach morning glory, koali 'awa, kupala, kawelu, and lichens on surrounding rock. *Schiedea verticillata* is threatened by competition with pigweed, which is widespread on Nihoa and grows in habitats similar to this species. It is also threatened by stochastic extinction due to its very restricted range and the vulnerability of plants to disturbance events in their steep, rocky habitat (Conant 1985; S. Conant, pers. comm., 1991).

Previous Federal Action

Federal action on these plants began as a result of section 12 of the Act, which directed the Secretary of the Smithsonian Institution to prepare a report on plants considered to be endangered, threatened, or extinct in the United States. This report, designated as House Document No. 94–51, was presented to Congress on January 9, 1975. In that document, *Pritchardia remota* was considered to be endangered. 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 taxa. *Amaranthus brownii* and *Schiedea verticillata* were considered to be endangered in the proposed rule, but *Pritchardia remota* was not included. 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 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). In these notices, *Amaranthus brownii and Schiedea verticillata,* which were in the proposed rule, were treated as Category 1 candidates for Federal listing. Category 1 taxa are those for which the Service has on file substantial information on biological vulnerability and threats to support preparation of listing proposals. The two taxa that were proposed as endangered in the June 16, 1976, proposed rule were considered Category 1 candidates on all three of these notices. *Pritchardia remota* was included as a Category 1 species on the 1980 notice and remained so on the 1985 and 1990 notices.

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 all petitions pending on October 13, 1982, be treated as having been newly submitted on the date. On October 13, 1983, the Service found that the petitioned listing of these taxa 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 present proposal constitutes the final 1-year finding for these species.

Summary of Factors Affecting the Species

Section 4 of the Endangered Species Act (16 U.S.C. 1533) 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). The threats facing these three species are summarized in Table 1.

TABLE 1.—SUMMARY OF THREATS

Species	Rats	Alien plants	Fire	Substrate loss*	Human impacts	Limited numbers**
Amaranthus brownii		X	P	X	X	X[1,2]
Pritchardia remota	P	P	P		X	X[1]
Schiedea verticillata	P	X	P	X	X	

X = Immediate and significant threat.
P = Potential threat.
* = Substrate loss includes erosion, rock slides, and landslides.
** = No more than 100 individuals and/or no more than 5 populations.
1 = No more than 5 populations.
2 = No more than 50 individuals.

These factors and their application to *Amaranthus brownii* Christoph. & Caum (NCN), *Pritchardia remota* Becc. (loulu), and *Schiedea verticillata* F. Brown (NCN) are as follows:

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

Nihoa's plant populations, as well as its many birds, are vulnerable to the intentional or inadvertent introduction of alien animals. The difficulty in landing on the island provides a degree of protection from animal introductions, but a wrecked fishing boat might accidentally introduce rats, which could cause a severe and rapid degradation of both the flora and fauna of Nihoa.

Alien plant species naturalizing on Nihoa compete with native plant species for space, water, nutrients, and light and would disturb ecosystems which include not only native plants, but also native arthropods and birds. Six alien plant species, which are naturalized in other parts of the Hawaiian Islands, have been found on Nihoa. Three alien plant species were first recorded in the area of Millers Peak, where a military installation was located during the 1960s. Common sandbur was first noticed between 1961 and 1969. In 1962, a soldier's towel at the military camp was found with six sandbur fruits stuck to it. This was burned, but it illustrates how easily alien propagules can be brought to Nihoa by human visitors. Service policy has been to destroy all sandbur plants, and none were seen after 1969 until 1981, when 1 plant with fewer than 10 fruits was discovered and destroyed. An unidentified species of the grass genus *Paspalum* was observed in 1962 near the military camp, but it has not been found since so has evidently not established. Three small colonies of pigweed were found in 1977 near the military installation. It has now spread over the entire island, having become the only widespread exotic plant present. Pigweed grows in shallow soil pockets, especially near ridge tops, the sort of habitat in which *Amaranthus brownii* and *Schiedea verticillata* grow. It may be replacing individuals of two native species of *Portulaca* and potentially could threaten *Amaranthus brownii* and *Schiedea verticillata*. Two introduced species have been found near the southern coast. Bristly foxtail was found in 1969 but has not been collected since, so it has probably not become established. New Zealand spinach was collected in 1977 and again in 1991. In 1981 one colony of sword fern, an alien species established in the main Hawaiian Islands, was found in the southern part of Nihoa some distance from the usual landing site. Two other colonies were found in 1983 in the northwestern part of the island. This is the first fern naturalized in the main Hawaiian Islands to have reached the NWHI and is thought to have arrived by wind dispersal. Caution on the part of personnel working on the island and frequent monitoring of the vegetation and removal of alien plants have helped keep established exotics to a minimum on Nihoa (Conant 1983a, 1983b, 1985; Herbst 1980; Marshall 1964).

With its low amount of rainfall, Nihoa often has much dry vegetation, which is very susceptible to fire. An 1885 trip to Nihoa by a group led by Queen Liliuokalani illustrates this vulnerability. The group had to leave the island abruptly after they started a fire which quickly swept across the island (Culliney 1988). Fires caused by smoking or cooking remain potential threats.

Erosion, landslides, rock slides, and flooding due to natural causes potentially could result in the death of individual plants as well as habitat destruction. This especially affects the continued existence of taxa or populations with limited numbers and/or narrow ranges, including all three proposed species. Evidence of heavy flash floods has been noted in the lower part of East Palm Valley, where there are specimens of *Pritchardia remota* (Kramer 1962). *Amaranthus brownii* and *Schiedea verticillata* grow on rocky outcrops and cliff faces, making these plants vulnerable to substrate changes. This process can be exacerbated by human disturbance.

Because of the steep slope and rocky nature of Nihoa, people walking from place to place on the island can cause a great deal of damage. Currently, the only legal visitors are those with Service approval, usually Refuge personnel or scientific researchers who are very aware of the fragile nature of the island's environment (Conant 1985). Access to this island for Hawaiian religious ceremonies would be a permitted action, but visitors would be accompanied by Refuge personnel (Jerry Leinecke, USFWS, pers. comm., 1991). With increased commercial fishing in the NWHI, a policy adopted by the State of Hawaii and supported by the Department of Land and Natural Resources (Harrison 1985), there is a greater possibility of mishaps and unauthorized landings on Nihoa (Gagne and Conant 1983). Recreational boaters might be tempted to land illegally on the island. Conant (pers. comm., 1991) related a 1981 incident in which people on a yacht had an inflatable boat ready to approach the island, but, upon seeing the camp of researchers working on the island, they made a hasty retreat.

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

Illegal collecting for scientific or horticultural purposes or visits by individuals interested in seeing rare plants could result from increased publicity, and would threaten these three species, especially *Amaranthus brownii* and *Schiedea verticillata*. The limited legal access to Nihoa and the island's distance from the inhabited main Hawaiian Islands reduces the effect of this impact. However, the island's isolation also decreases the amount of monitoring which can be provided by Federal and State authorities.

C. Disease or Predation

Rattus spp. (rats) and *Mus musculus* (house mouse), which have made their way to several small islands and islets in the Hawaiian chain (Tomich 1986), could be introduced to Nihoa from a nearby ship. Rodent predation could prove disastrous for *Pritchardia remota*; predation of seeds by rodents has reduced the reproductive capacity of other Hawaiian *Pritchardia* species (Center for Plant Conservation (CPC) 1990b. Cuddihy and Stone 1990). Rodents might also find the fleshy roots of *Schiedea verticillata* palatable (CPC 1990a). The former presence of *Felis catus* (house cat) and the current presence of *Lepidodactylus lugubris* (gecko) and at least 70 species of alien insects are proof that introductions to the island occur (Beardsley 1966; Bryan 1978; Conant *et al.* 1984; John Strazanac, Bishop Museum, pers. comm., 1991). *Tetranychus cinnabarinus* (carmine spider mite) has been collected several times on Nihoa and could threaten *Schiedea verticillata* (CPC 1990a; J. Strazanac, pers. comm., 1991).

D. The Inadequacy of Existing Regulatory Mechanisms

Hawaii's Endangered Species Act 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 shall be deemed to be an endangered species under the provisions of this chapter * * *" (HRS, sect. 195D–4(a)). Federal listing would automatically invoke listing under Hawaii State law, which prohibits taking of endangered plants in the St and encourages conservation by State agencies (HRS, sect. 195D–4).

All populations of the three proposed species are located on Federal land which is within the boundaries of the City and County of Honolulu and the State of Hawaii and is managed as a National Wildlife Refuge by the Service. The land is also classified as a State Wildlife Refuge (Miller 1983), although all management is performed by the Federal government. All populations of the three proposed species occur on land classified within conservation districts. Lands in these districts, among other purposes, are regarded as necessary for the protection of endemic biological resources and the maintenance or enhancement of the conservation of natural resources (HRS, sect. 205–2). 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)). If these species were listed, funds for these activities could be made available under section 6 of the Federal Act (State Cooperative Agreements). Despite the existence of various State laws and regulations which give protection to Hawaii's native plants, their enforcement is difficult due to limited funding and personnel. Listing of these three plant species would reinforce and supplement the protection available under the State Act and other laws.

E. Other Natural or Manmade Factors Affecting its Continued Existence

The very limited range of all three of the proposed species, the small number of populations of two of the species, and the small number of individuals of one of the species 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 an entire population. All three of the proposed species, *Amaranthus brownii, Pritchardia remota,* and *Schiedea verticillata,* are restricted in their natural range to small portions of an island with an area of only 0.25 sq mi (0.65 sq km). Two of the species, *Amaranthus brownii* and *Pritchardia remota,* have only two populations each. Fewer than 40 individuals of *Amaranthus brownii* have ever been counted. Attempts to grow *Amaranthus brownii* in cultivation have not succeeded, with only a few seeds germinating and those seedlings not surviving (Conant 1985).

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by these species in determining to propose this rule. Based on this evaluation, the preferred action is to list these three plant species as endangered. Two of the species proposed for listing are known from only two populations; the other species is known from only one population. One of the species numbers fewer than 40 individuals. Each of the three species is threatened by one or more of the following: Competition with the alien plant pigweed, substrate loss, and increased likelihood of extinction and/or reduced reproductive vigor due to small numbers of individuals and populations and their extremely limited range. Because these three 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. Therefore, the determination of endangered status for these three plant species appears warranted.

Critical habitat is not being proposed for these species for reasons discussed in the "Critical Habitat" section of this proposal.

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 determined to be endangered or threatened. The Service finds that determination of critical habitat is not presently prudent for *Amaranthus brownii, Pritchardia remota,* and *Schiedea verticillata.* Such a determination would result in no known benefit to the species. 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 by making them more vulnerable to take or vandalism and their fragile habitat more susceptible to damage. The listing of these species as endangered also publicizes their rarity and, thus, can make these plants attractive to researchers, collectors, and those wishing to see rare plants. This could contribute to their decline and/or increase enforcement problems. The only known populations of the proposed species occur on land owned and managed by the Federal government, which is aware of the general location and importance of protecting the plants and their habitat. Protection of the species' habitat will be addressed through the recovery process and, in some cases, through the section 7 consultation process. All the plants are located on a National Wildlife Refuge, one of the policies of which is to conserve native vegetation, so it is unlikely that Federal activities would negatively affect the continued existence of these plants.

Therefore, the Service finds that designation of critical habitat for these species 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 species.

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 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 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) of the Act, requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species 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 such a 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. All populations of the three proposed species occur on land managed by the Service as a National Wildlife Refuge. There are no other known Federal activities that occur within the present known habitat of these three plant species.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 for endangered species set forth a series of general prohibitions and exceptions that apply to all endangered plant species. With respect to the three plant species from the island of Nihoa, all trade 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 these species in interstate or foreign commerce; or to 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 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 species are not common in cultivation nor in the wild.

Requests for copies of the regulations on 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 or FTS 921–2104; FAX 703/358–2281).

Public Comments Solicited

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule are hereby solicited. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to these species;

(2) The location of any additional populations of these species and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;

(3) Additional information concerning the range, distribution, and population size of these species; and

(4) Current or planned activities in the subject area and their possible impacts on these species.

The final decision on this proposal will take into consideration the comments and any additional information received by the Service, and such communications may lead to a final regulation that differs from this proposal.

The Endangered Species Act provides for at least one public hearing on this proposal, if requested. Hearing requests must be received within 45 days of the date of publication of the proposal. Such requests must be made in writing and addressed to the Field Supervisor (see **ADDRESSES** section).

National Environmental Policy Act

The 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 is available upon request from the Pacific Islands Office (see **ADDRESSES** section).

Author

The primary author of this proposed rule is Zella E. Ellshoff, 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).

List of Subjects in 50 CFR Part 17

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

Proposed Regulations Promulgation

Accordingly, it is hereby proposed 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. It is proposed to amend § 17.12(h) by adding the following, in alphabetical order under the families indicated, 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					
• •	•	•	•	•		•
Amaranthaceae—Amaranth family:						
• •	•	•	•	•		•
Amaranthus brownii	None	U.S.A. (HI)	E	NA	NA	
• •	•	•	•	•		•
Arecaceae—Palm family:						
• •	•	•	•	•		•
Pritchardia remota	Loulu	U.S.A. (HI)	E	NA	NA	

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
•	•	•	•	•	•	•
Caryophyllaceae—Pink family:						
•	•	•	•	•	•	•
Schiedea verticillata	None	U.S.A. (HI)	E	NA	NA	
•	•	•	•	•	•	•

Dated: March 11, 1993.

Richard N. Smith

Acting Director, Fish and Wildlife Service.

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