

Dated: December 7, 1990.

Bruce Blanchard,  
Acting Director, U.S. Fish and Wildlife  
Service.  
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## 50 CFR Part 17

RIN 1018-AB31

### Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for *Isodendron hosakae* (Aupaka), a Hawaiian Plant

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Final rule.

**SUMMARY:** The U.S. Fish and Wildlife Service (Service) determines a Hawaiian plant, *Isodendron hosakae* (aupaka), to be endangered under the authority of the Endangered Species Act of 1973, as amended (Act). This species grows on three privately-owned cinder cones in the Waikoloa area of the South Kohala District, Hawaii. The destruction of the plant or the degradation of its habitat by grazing domestic cattle, and the potential for fires during the dry season are the greatest immediate threats to the survival of this species. This rule implements the protection provided by the Act for this plant.

**EFFECTIVE DATE:** February 13, 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, P.O. Box 50167, Honolulu, Hawaii 96850.

**FOR FURTHER INFORMATION CONTACT:** Ernest F. Kosaka, Field Supervisor, at the above address (808/541-2749 or FTS 551-2749).

#### SUPPLEMENTARY INFORMATION:

##### Background

*Isodendron hosakae* was first collected by Edward Y. Hosaka on November 4, 1948, near the summit of an unnamed cinder cone, Waikoloa, Hawaii. He made another collection from the same locality three months later. In 1952, Harold St. John published a revision of the genus in which he named the new species in honor of its discoverer (St. John 1952). The species was not seen again until 1980 when it was rediscovered on a cinder cone in the Waikoloa area. The species subsequently was found on two other cinder cones during surveys made in 1981 and 1982. Today the population is estimated at about 275 individuals

growing on 3 privately-owned cinder cones in the Waikoloa area of Hawaii Island. The three known populations are situated within a radius of 1.5 miles (2.4 kilometers) and occupy a total area estimated to be less than 2 acres (0.8 hectares).

*Isodendron hosakae*, a member of the violet family (Violaceae), is a small, erect shrub about 18 to 30 inches (46 to 76 centimeters [cm]) tall. It has narrow, lance-shaped leaves about an inch (2.5 cm) long; the upper portion of the stem is nearly concealed by the persistent leaf stipules. The flowers are about ½ inch (1.3 cm) long and are yellowish-green to whitish in color. The fruit is a capsule, elliptical in shape, about ⅜ inch (1 cm) long and ¼ inch (0.6 cm) wide (Nagata 1982). A combination of characters distinguish *I. hosakae* from the other species in the genus: the pubescent midrib of the sepals and stipules, the pilose greenish-yellow to whitish fragrant flowers whose lower petal is 1.4 to 1.8 cm long, and the narrowly elliptic glossy green terminally acute leaves. *Isodendron hosakae* occurs on the summits or on the northeast-facing slopes of extinct cinder cones between 2800 and 3600 feet (850 and 1095 meters) (Nagata 1982). Generally, the sites are exposed to wind and fog. Fog may contribute substantially to the total amount of moisture available to the plants. Open grassland and scrub is the primary vegetation type for the area (Nagata 1982). Evidence suggests that this species has always been highly restricted in distribution and number. *Isodendron*, a genus of four species in the violet family, is endemic to the Hawaiian Islands.

Probably the greatest immediate threat to the continued survival of this plant is predation and habitat disturbance by domestic cattle. The potential of destruction by range fires during the dry season also is a major threat. The low number of individuals is also considered a potential threat through a reduction in reproductive vigor. A cooperative effort between Federal and State agencies and the private landowner is needed to protect the remaining plants and to provide for the conservation of the species.

The Secretary of the Smithsonian Institution, as directed by section 12 of the Act, prepared a report on those plants considered to be endangered, threatened, or extinct in the United States. This report (House Document No. 94-51) was presented to Congress on January 9, 1975. On July 1, 1975, the Service published a notice in the Federal Register (40 FR 27823) accepting the report as a petition within the context of

section 4(c)(2) of the Act (petition acceptance provisions are now contained in section 4(b)(3)(A)), and giving notice of its intention to review the status of the plant taxa named therein, including *Isodendron hosakae*, which at that time was considered extinct. 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 approximately 1,700 vascular plant species, including *Isodendron hosakae*, to be endangered pursuant to section 4 of the Act. 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) of the withdrawal of 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 82480), including *Isodendron hosakae* as a Category 1 candidate, meaning that the Service had substantial information indicating that preparation of a listing proposal is warranted.

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 1, 1982, be treated as having been newly submitted on that date. The latter was the case for *Isodendron hosakae* because the Service had accepted the 1975 Smithsonian report as a petition. On October 13, 1983, a further finding was made that listing of *Isodendron hosakae* 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, and 1988. The October 10, 1989, proposal of *Isodendron hosakae* to be endangered (54 FR 41470) constituted the final 12-month finding for this species.

#### Summary of Comments and Recommendations

In the October 10, 1989, 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 rule. 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 "Hawaii Tribune-Herald" on October 23, 1989.

Eight letters of comment were received, including one from the City and County of Honolulu, two from State agencies, and five from environmental groups. Two letters, one from a State agency and one from an environmental group, acknowledged receipt of copies of the proposed rule, but had no comments; the other six letters expressed support for the proposal. Two of the environmental groups encouraged the Service to designate critical habitat for this species. Critical habitat is not being designated at this time as such a determination would result in no known benefit and may be detrimental to the species. The number of individuals of *Isodendron hosakae* is sufficiently small that vandalism could seriously affect the survival of the species. Publishing a detailed description and map of this species' habitat would stimulate public interest and make this species more vulnerable to vandalism and taking by collectors or curiosity seekers.

#### Summary of Factors Affecting the Species

After a thorough review and consideration of all available information, the Service has determined that *Isodendron hosakae* should be classified as an endangered species. Procedures found at Section 4 of the Act (16 U.S.C. 1533) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act have been 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 *Isodendron hosakae* St. John (aupaka) are as follows:

**A. The present or threatened destruction, modification, or curtailment of its habitat or range.** Cattle have been responsible for the modification or destruction of much of the native vegetation in Hawaii. The modification of the vegetation from dense native forest to pasture by cattle has been documented in the Waimea region less than ten miles north of Waikoloa (Anon. 1856). Because cattle have grazed throughout these regions continuously since their introduction in the late 1700's, it is reasonable to assume similar destruction of native vegetation has occurred in Waikoloa as well. Drought

conditions exist throughout the region during much of the year, often forcing the cattle to graze on marginal, less palatable species. Because *I. hosakae* often grows in close proximity to these less palatable species, drought and subsequent modification of cattle feeding habits present another threat to the populations (Nagata 1982). Range fires during the dry season have threatened the species in the past, in one incidence destroying nearly all the plants in one of the populations. Recently, one of the cinder cones on which *Isodendron hosakae* grows was fenced off in a cooperative effort between the State Division of Forestry and Wildlife and the landowner to protect the hill from grazing cattle. This cinder cone has the largest population of *Isodendron* and its protection has greatly alleviated the impact of cattle on the species, but has not completely removed them as a threat. It is too soon to determine the long term effect of the fencing project on the protection of the species; fencing small areas and establishing sanctuaries of a few acres have had mixed results in Hawaii. Feral pigs have been observed in the area. While there is no documented evidence of outright destruction of *Isodendron* by feral pigs, disturbance by their rooting would result in plants and seedlings being dug up and represents another potential threat. On several occasions in the past, the entire area was leased by the landowner to the U.S. military for ground troop training exercises. Disturbance by troop movement and other training activities and the associated risk of fires also are potential threats to the species. Several cinder cones in the area, including one supporting a small population of *Isodendron*, are being quarried for their cinder; although the quarrying is not impacting the plant at present, it poses yet another threat to the species in the future.

**B. Overutilization for commercial, recreational, scientific, or educational purposes.** *Isodendron hosakae* is not currently a component of the commercial trade in native plants. However, because of its small and easily accessible populations, it is vulnerable to taking and vandalism that could result from increased specific publicity.

**C. Disease or predation.** All known extant plants grow on three cinder cones located in a pasture. Although there is no documentation that the plants have been destroyed by grazing in the past, there also is no indication that they are considered unpalatable by cattle. In addition to habitat modification by

cattle, as discussed in section A above, predation by grazing livestock is considered a threat to the species.

**D. The inadequacy of existing regulatory mechanisms.** There are no existing regulatory mechanisms to protect this plant. However, Federal listing will automatically invoke listing under Hawaii State law, which prohibits taking and encourages conservation by State government agencies. Funds for activities required for the conservation, management, enhancement, or protection of the species can be made available under Section 6 of the Act (State Cooperative Agreements). Additional protection is extended to the species by a 1988 amendment to the Act which prohibits removing, cutting, digging up, damaging, or destruction 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 extant populations (varying in size from 8 to 260 plants each in 3 populations, and occupying an area of less than 2 acres) make *Isodendron hosakae* especially sensitive to any perturbation, natural or man-caused, that diminishes its habitat or numbers. Further reduction of the already depauperate gene pool and genetic variability in these small populations potentially could have catastrophic effects on the survival of the species. Although seedlings are present within the population, seed production appears to be very low. As the populations are composed of plants of varying ages, the species is reproducing successfully, but probably only marginally. However, evidence indicates that the taxon probably has always been highly restricted and small in numbers, so the low reproductive rate may not be due to reduced reproductive vigor.

The Service has carefully assessed the best scientific and commercial information available regarding past, present, and future threats faced by this species in determining to make this rule final. Based on this evaluation, the preferred action is to list *Isodendron hosakae* as endangered. Its limited numbers and remaining habitat in light of present vulnerability to natural and anthropogenic threats indicate that *Isodendron hosakae* is in danger of extinction throughout all or significant portions of its range, and therefore fits the Act's definition of endangered.

#### Critical Habitat

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

prudent and determinable, the Secretary designate any habitat of a species that is considered to be critical habitat at the time the species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not prudent for *Isodendron hosakae* at this time. Such a determination would result in no known benefit and may be detrimental to the species.

Publishing a detailed description and map of this species' habitat would stimulate public interest and make this species more vulnerable to vandalism and taking by collectors or curiosity seekers. None of the remaining populations of this species occur on Federal lands. Publication of critical habitat descriptions and maps would make *Isodendron hosakae* more vulnerable and increase enforcement problems. All involved parties and principal landowners have been notified of the general location and importance of protecting this species' habitat. Protection of this species' habitat will be addressed through the recovery process and through the consultation process under section 7 of the Act. Therefore, it would not be prudent to determine critical habitat for *Isodendron hosakae* at this time.

#### Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the 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 Act provides for possible land acquisition and cooperation with the States, and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. Since *Isodendron hosakae* occurs on privately owned land, cooperation between Federal and State agencies and the private landowner is necessary to ensure its continued existence and to provide for its recovery. 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) requires Federal agencies to ensure 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. The area that includes the habitat of *Isodendron hosakae* has been leased to the U.S. military in the past for temporary use for ground troop training exercises. If the Department of Defense leases the area again for troop training, it would be required to enter into consultation with the Service if the action may affect the species.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 set forth a series of general trade prohibitions and exceptions that apply to all endangered plant species. With respect to *Isodendron hosakae*, 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 in interstate or foreign commerce; or 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, if any, trade permits would ever be sought or issued, since the species is not common in cultivation nor 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, Arlington, Virginia 22203-3507 (703/358-2104 or FTS 921-2232).

#### National Environmental Policy Act

The Fish and Wildlife Service has determined that an environmental assessment, as defined pursuant to the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to Section 4(a) of the Act. 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

- Anonymous. 1856. The influence of cattle on the climate of Waimea and Kawaihae, Hawaii. Hawaiian Planter's Record 30: 289-292.
- Nagata, K. 1982. Unpublished status survey of *Isodendron hosakae* St. John (*oupaka*). U.S. Fish and Wildlife Service. 31 pp.
- St. John, H. 1952. Monograph of the genus *Isodendron* (Violaceae). Hawaiian plant studies 21. Pac. Sci. 6:213-255.

#### Author

The primary author of this final rule is Dr. Derral R. Herbst, U.S. Fish and Wildlife Service, Pacific Islands Office, 3200 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.

#### Regulation & Promulgation

#### PART 17—[AMENDED]

Accordingly, part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, is hereby 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; Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.

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

§ 17.12 Endangered and threatened plants.

\* \* \* \* \*

(h) \* \* \*

Scientific name	Common name	Species	Historic range	Status	When listed	Critical habitat	Special rules
Violaceae—Violent family.....							
<i>Isodendron hosakae</i>	Aupaka		U.S.A. (HI)	E	414	NA	NA

Dated: December 21, 1990.  
**Bruce Blanchard,**  
 Acting Director, U.S. Fish and Wildlife Service.  
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**50 CFR Part 17**  
**RIN 1018-AB38**

**Endangered and Threatened Wildlife and Plants; Endangered Status for the Florida Salt Marsh Vole**

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Final rule.

**SUMMARY:** The Service determines the Florida salt marsh vole (*Microtus pennsylvanicus dukecampbelli*) to be an endangered species pursuant to the Endangered Species Act (Act) of 1973, as amended. The vole is known only from one site in Levy County, Florida. The population level is very low, and the species could be extirpated by storm events. This action implements the protection of the Act for the Florida salt marsh vole.

**EFFECTIVE DATE:** February 13, 1991.

**ADDRESSES:** The complete file for this rule is available for inspection, by appointment, during normal business hours at the Jacksonville Field Office, U.S. Fish and Wildlife Service, 3100 University Boulevard South, Suite 120, Jacksonville, Florida 32216.

**FOR FURTHER INFORMATION CONTACT:** Mr. David J. Wesley, Field Supervisor, at the above address (telephone 904/791-2580; FTS 946-2580).

**SUPPLEMENTARY INFORMATION:**

**Background**

The Florida salt marsh vole (*Microtus pennsylvanicus dukecampbelli*) was described in 1982 (Woods *et al.* 1982) based on specimens from near Cedar Key, Levy County, Florida. It is a small (178-198 mm in total length), short-tailed rodent with a blunt head and short ears. The fur is black-brown dorsally and dark gray ventrally. The Florida salt marsh vole is related to the widespread meadow vole (*Microtus p. pennsylvanicus*). It differs from that subspecies in its larger size, darker

coloration, relatively smaller ears, and certain skull characteristics. Most of the known information on the Florida salt marsh vole comes from Woods *et al.* (1982), who discovered the vole during seaside sparrow (*Ammodramus maritimus*) studies in west coast Florida marshes. The following background information is based on those authors.

The vole is known from only one site, where it occurs in a salt marsh with vegetation consisting of smooth cordgrass (*Spartina alterniflora*), black rush (*Juncus roemerianus*), and saltgrass (*Distichlis spicata*). The nearest existing population of *Microtus pennsylvanicus* to the salt marsh vole is located approximately 500 kilometers to the north in Georgia. However, fossil *Microtus pennsylvanicus* have been found in late Pleistocene deposits at four sites in Alachua, Citrus, and Levy Counties in Florida, indicating a much more extensive distribution in Florida in the past. The ages of these fossils may be from 8,000-30,000 years before the present. Lower sea levels in the past exposed large areas of coastal lands along Florida's west coast that are now submerged. About 10,000 years ago, sea level may have been 25 meters lower than at present, exposing land as far as 100 kilometers west of the current shoreline. This coastal corridor is believed to have consisted of savanna and prairie vegetation that would have provided much more extensive meadow vole habitat than now exists. The Florida salt marsh vole is believed to represent a relictual population that has persisted at the Waccasassa Bay site after a long-term reduction in range. Woods *et al.* (1982) concluded that the salt marsh vole existed in low numbers under harsh ecological conditions and was vulnerable to natural storm events. This view is supported by the fact that, following a hurricane passing through the Waccasassa Bay area in 1985, only one salt marsh vole was taken during intensive trapping in 1987 and 1988 (Woods 1988).

Service involvement with the Florida salt marsh vole began with the inclusion of this species in category 2 of its vertebrate review notice published on September 18, 1985 (50 FR 37958); the vole was retained in the same category in the Service's animal review notice

published on January 6, 1989 (54 FR 554). Category 2 species are those for which the Service believes that listing may be appropriate, but for which additional biological data are necessary to support a proposed listing regulation. Additional searches for this species were subsequently done under contract with the Service's Cooperative Fish and Wildlife Research Unit (Woods 1988) and by the Service's Jacksonville, Florida, Field Office (Bentzen 1989). The Service proposed to list the Florida salt marsh vole as an endangered species on April 11, 1990 (55 FR 13576).

**Summary of Comments and Recommendations**

In the April 11, 1990, proposed rule and associated notifications, all interested parties were requested to submit factual reports of information that might contribute to the development of a final rule. Appropriate State agencies, county governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. Newspaper notices were published in the *Levy County Journal* in Bronson, Florida, on April 26, 1990; and in the *Gainesville Sun* in Gainesville, Florida, on April 29, 1990. On June 8, 1990, the trustee of the land where the Florida salt marsh vole occurs requested that the comment period be extended because he had been out of town during the comment period. On August 17, 1990 (55 FR 33737), the Service reopened the comment period on the proposal.

Two comments were received. The Florida Game and Fresh Water Fish Commission supported the listing of the Florida salt marsh vole as an endangered species. An attorney representing the trustee of the land where the vole occurs commented in regard to the following issues: Since only a single male vole was trapped in the last survey of the property, there can be no reproduction occurring on the site. Since that individual vole is unlikely to survive at the present time, no colony can now exist at the site. The single specimen taken was in mixed habitat, suggesting integration (sic). If future research shows the species to exist on the property, the Service should provide