

## DEPARTMENT OF THE INTERIOR

## Fish and Wildlife Service

## 50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for Two Puerto Rican Plants; *Peperomia wheeleri* and *Banara vanderbiltii*

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

**ACTION:** Final rule.

**SUMMARY:** The Service determines two Puerto Rican plants, *Peperomia wheeleri* (Wheeler's peperomia) and *Banara vanderbiltii* (Palo de Ramon), to be endangered species pursuant to the Endangered Species Act (Act) of 1973, as amended. *Peperomia wheeleri* is endemic to seasonal semievergreen open forests on granodiorite boulders along the north coast of Culebra Island, Puerto Rico. The species is endangered by destruction of its habitat through deforestation and the activities of feral and domestic animals. *Banara vanderbiltii* is endemic to semievergreen forests of the karst region of northern Puerto Rico, where a single population of six plants survives. The species is endangered by deforestation for limestone quarrying and yam cultivation. This final rule will implement the Federal protection and recovery provisions afforded by the Act for both plants.

**EFFECTIVE DATE:** February 13, 1987.

**ADDRESSES:** The complete file for this rule is available for inspection, by appointment, during normal business hours at the Caribbean Field Office, U.S. Fish and Wildlife Service, Kilometer 5.1, Carretera 301, P.O. Box 491, Boqueron, Puerto Rico 00622, and at the Service's Regional Office, Suite 1282, 75 Spring Street, SW., Atlanta, Georgia 30303.

**FOR FURTHER INFORMATION CONTACT:** Mr. David Densmore at the Caribbean Field Office address (809/851-7297) or Mr. Richard P. Ingram at the Atlanta Regional Office address (404/331-3583 or FTS 242-3583).

**SUPPLEMENTARY INFORMATION:****Background**

*Peperomia wheeleri* was discovered by Britton and Wheeler during their visit to Culebra Island in 1906. The plants were taken alive to the New York Botanical Garden and the species described from living material. The type specimen was collected from plants at the Garden. The species was not collected from the wild again until 1980 (Vivaldi and Woodbury 1981a).

*Peperomia wheeleri* is an evergreen, hairless, fleshy herb reaching 3 feet (1 meter) in height, with clusters of minute flowers in spikes 4-6 inches (10-15 centimeters) long. The species is locally abundant, but restricted to large granodiorite boulders found on the north slopes of Monte Resaca within the Municipality of Culebra, Puerto Rico. Although the boulder substrate extends over much of the north side of Culebra Island, deforestation and grazing have eliminated or substantially altered the original vegetation. Within the remaining forested areas, foraging by escaped domestic fowl has destroyed or threatens to destroy the humus overlaying the boulders, thus altering the microhabitat required by *Peperomia wheeleri*. The remaining population of this species is located almost entirely within the 375 acre (152 hectare) Monte Resaca Unit of the Culebra National Wildlife Refuge. The number of surviving individuals is difficult to estimate, and nothing is known about the species' regeneration or population dynamics.

*Banara vanderbiltii* was discovered by Amos Arthur Heller in 1899, and named in honor of Cornelius Vanderbilt, who financed his collection in Puerto Rico. The first specimens were collected at Catano and Martin Pena, near the present metropolitan area of San Juan, but have not been found at these locations since that time. *Banara vanderbiltii* was not collected again until the 1950's, when two trees were found in the limestone hills west of Bayamon. These trees were subsequently destroyed when the area was cleared to plant yams, and the species was thought to be extinct. However, further investigation of the same general area yielded five young plants (Vivaldi and Woodbury 1981b). More recently, a sixth plant was found at this site.

*Banara vanderbiltii* is an evergreen shrub or small tree reaching 30 feet (10 meters) in height and 5 inches (12 centimeters) in diameter. The leaves are arranged alternately in a single plane, have a dentate margin, and are densely pubescent on both sides. The species is restricted to a single locality in the semievergreen forests of the limestone karst region of northern Puerto Rico, between Vega Baja and Bayamon. Expansion of human habitation in the San Juan area has been responsible for the destruction of other known populations, and the sole remaining population is threatened by continued development of adjacent areas. Nothing is known of the species' regenerative capacity, thus it is not clear whether the

existing population is capable of maintaining or increasing its size.

*Peperomia wheeleri* and *Banara vanderbiltii* were recommended for Federal listing by the Smithsonian Institution (Ayensu and DeFilippis 1978). In August 1979, the Service contracted with Dr. Jose L. Vivaldi, a resident botanist of Puerto Rico, to conduct a status survey of plants considered to be candidates for listing as endangered or threatened in Puerto Rico and the Virgin Islands. Reports (Vivaldi and Woodbury 1981a, 1981b) and documentation resulting from this survey recommended that both *Peperomia wheeleri* and *Banara vanderbiltii* be proposed for listing as endangered species. The species were included among the plants being considered as endangered or threatened species by the Fish and Wildlife Service, as published in a Notice of Review in the **Federal Register** (45 FR 82480) dated December 15, 1980. Both species were designated Category 1 (species for which the Service has substantial information supporting the appropriateness of proposing to list them as endangered or threatened) and were retained in Category 1 in the November 28, 1983, update (48 FR 53640) of the 1980 notice and the September 27, 1985, revised notice (50 FR 39526).

In a notice published in the **Federal Register** on February 15, 1983 (48 FR 6752), the Service reported the earlier acceptance of the taxa in the Smithsonian's 1978 book as under petition within the context of section 4(b)(3)(A) of the Act, as amended in 1982. The Service subsequently found on October 13, 1983, October 13, 1984, and October 13, 1985, that the listing of *Peperomia wheeleri* and *Banara vanderbiltii* was warranted but precluded by other pending listing actions, in accordance with section 4(b)(3)(B)(iii) of the Act. In two separate documents the Service proposed in the **Federal Register** on April 10, 1986, to list *Peperomia wheeleri* (51 FR 12457) and *Banara vanderbiltii* (51 FR 12455).

**Summary of Comments and Recommendations**

In the two April 10, 1986, proposed rules and their associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. Appropriate agencies of the Commonwealth of Puerto Rico, municipal governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. Newspaper notices inviting general public comment on *Peperomia wheeleri* were published

in the *San Juan Star* (in English) and in *El Nuevo Dia* (in Spanish) on May 5, 1986. Similar notices for the *Banara vanderbiltii* were published in the same two papers on May 5 and May 3, respectively. Four letters of comment were received and are discussed below. No public hearing was requested; therefore none was held.

Comments were received from an Assistant Secretary of the Puerto Rico Department of Natural Resources, the Administrator of the Botanical Garden of the University of Puerto Rico, a professional botanist in Puerto Rico, and a private citizen. All comments supported the proposed listings of *Peperomia wheeleri* and *Banara vanderbiltii*. However, the professional botanist, Dr. José Vivaldi, criticized the Service's decision not to designate critical habitat for these species. The reasons for this decision are stated below under "Critical Habitat".

#### Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that both *Peperomia wheeleri* and *Banara vanderbiltii* should be classified as endangered species. Procedures found at section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) 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 *Peperomia wheeleri* Britton (Wheeler's peperomia) are as follows (a similar analysis follows for the other plant):

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

Modification and destruction of habitat appear to be the most serious threats to *Peperomia wheeleri*. The species' habitat on Culebra Island has been largely modified or destroyed through deforestation, grazing by cattle and goats, and foraging by domestic fowl, thus eliminating the species throughout most of its former range. Few plants exist outside the boundaries of the Monte Resaca Unit of the Culebra National Wildlife Refuge, where measures are being taken to exclude livestock. However, until this work is complete and a management plan developed to protect *Peperomia wheeleri*, some additional losses of habitat and individuals are likely. Further deforestation within the Refuge

is not expected to occur, although such activities along the Refuge boundaries could cause additional losses by altering the structure and microclimate of the forest edge.

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

*Peperomia wheeleri* is restricted to a very small area (375 acres, 150 hectares) and taking or vandalism could severely threaten this single locality if they were to occur. Increased publicity regarding the location of this plant could increase the chance of taking and/or vandalism occurring. The species is known to be in cultivation in at least one botanical garden. This plant has no known commercial value at this time.

##### C. Disease or Predation

Disease and predation have not been documented as factors in the decline of this species, although it is likely that some grazing or browsing of plants has occurred. Destruction of *Peperomia wheeleri* habitat by grazing is discussed above in Factor "A."

##### D. The Inadequacy of Existing Regulatory Mechanisms

The Commonwealth of Puerto Rico has recently adopted a regulation that recognizes and provides protection for certain Commonwealth listed species. However, *Peperomia wheeleri* is not yet on the Commonwealth list. Federal listing will provide some protection and, if the species is ultimately placed on the Commonwealth list, enhance its protection and possibilities for funding needed research and management. All plants existing on National Wildlife Refuges are protected from collecting (50 CFR 27.51); the population of *Peperomia wheeleri* on Culebra National Wildlife Refuge is protected by this prohibition, to the extent that it is enforceable.

##### E. Other Natural or Manmade Factors Affecting its Continued Existence

There is insufficient information on the regenerative capacity of *Peperomia wheeleri* to determine whether the present populations will be maintained. The species' habitat requirements are poorly understood, although it appears that maintenance of the forest canopy and humus layer are minimal requirements.

These same five factors and their application to *Banara vanderbiltii* Urban (Palo de Ramon) are as follows:

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

Modification of habitat or direct destruction of plants through deforestation appear to be the most serious threats to *Banara vanderbiltii*. The species has been extirpated by deforestation from all but one of the sites where it has been known to exist. The remaining plants occupy a site less than 165 square feet (16 square meters) in extent inside a stand of remnant forest and are less than 660 feet (200 meters) from a major highway. Further clearing, modification of the forest edge, or encroachment by plant species adapted to disturbance could lead to reduced survivorship or extinction of *Banara vanderbiltii*.

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

Taking for these purposes has not been a documented factor in the decline of this species, but could become so in the future. The species occurs near inhabited areas, and could be removed or destroyed incidentally or deliberately. Cultivation of the species has not been attempted. This plant has no known commercial value at this time.

##### C. Disease or Predation

Disease and predation have not been documented as factors in the decline of this species, although threats to the young plants and fruits have not been studied.

##### D. The Inadequacy of Existing Regulatory Mechanisms

In the recent Commonwealth of Puerto Rico regulation that recognizes and provides protection for certain Commonwealth listed species, *Banara vanderbiltii* is listed as endangered, which extends legal protection in the form of criminal penalties for the destruction or removal of listed plant species from both public and private lands. Federal listing will further enhance its protection and possibilities for funding needed research and management.

##### E. Other Natural or Manmade Factors Affecting its Continued Existence

*Banara vanderbiltii* is known to occur only as a single small, compact population. The species' restriction to specialized habitat, small geographically limited range, and population size on only six plants intensifies any adverse effects upon the population or habitat of this plant. Although the species has bisexual flowers, its regenerative

requirements are unknown. The fruits of this species have only recently been discovered by Service personnel, and the frequency or viability of fruit and seed production are unknown.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by both species in determining to make this rule final. Based on this evaluation, the preferred action is to list both *Peperomia wheeleri* and *Banara vanderbiltii* as endangered. Since there are relatively few individuals of both species remaining and there is a continuing risk of damage to the plants and/or their habitat, endangered status seems an accurate assessment of both species' conditions. It is not prudent to designate critical habitat because doing so would increase the risk to each species, as detailed below.

#### Critical Habitat

Section 4(a)(3) of the Act, 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 designation of critical habitat is not prudent for either species at this time. The populations of *Peperomia wheeleri* are sufficiently restricted (375 acres, 150 hectares) that unauthorized collecting or vandalism could significantly affect their numbers. *Banara vanderbiltii* is even more restricted to less than 200 square yards (200 square meters). Publication of critical habitat descriptions and maps in the **Federal Register** would increase the likelihood of such activities. In addition, the Service believes that Federal involvement in the areas where these plants occur can be identified without designation of critical habitat. The populations of *Peperomia wheeleri* are located on a National Wildlife Refuge, and refuge personnel are aware of the plant's locations and management needs. All involved parties and landowners will be notified of the location and importance of protecting the habitat of *Banara vanderbiltii*. Protection of both these species' habitats will also be addressed through the recovery process and through the section 7 jeopardy standard. Therefore, it would not be prudent to designate critical habitat for either *Peperomia wheeleri* or *Banara vanderbiltii* at this time.

#### 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 practices. Recognition through listing encourages and results in conservation actions by Federal, Commonwealth, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the Commonwealth, and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required of Federal agencies and the prohibitions against taking 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 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 and were revised June 3, 1986 (51 FR 19926). 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 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. No critical habitat is being proposed for either species, as discussed above.

At present, Federal involvement with *Peperomia wheeleri* is possible only where habitat or plants may be affected by actions of the U.S. Fish and Wildlife Service. This species may be later found on private lands. Federal involvement with *Banara vanderbiltii* is possible only where habitat or plants may be affected by actions of the Federal Highway Administration. In the event that the highway in the immediate vicinity of this population of this species is widened or realigned, proper protection and management planning will be needed to protect *Banara vanderbiltii*. Project engineers and work crews would need to be altered so that the plants are considered and their habitat protected.

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 plants. 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 for any person subject to the jurisdiction of the United States to import or export any endangered plant, transport it in interstate or foreign commerce in the course of a commercial activity, sell or offer it for sale in interstate or foreign commerce, or remove it from areas under Federal jurisdiction and reduce it to possession. Certain exceptions can apply to agents of the Service and Commonwealth 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 species under certain circumstances. It is anticipated that few trade permits for either plant will ever be sought or issued since the species are rarely cultivated and are uncommon in the wild. Requests for copies of the regulations on plants and inquiries regarding them may be addressed to the Federal Wildlife Permit Office (600 Broyhill Building), U.S. Fish and Wildlife Service, Washington, DC 20240 (703/235-1903).

#### 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

- Ayensu, E.S., and R.A. DeFilippis.* 1978. Endangered and Threatened Plants of the United States. Smithsonian Institution and World Wildlife Fund, Washington, D.C. xv + 403 pp.
- Vivaldi, J.L., and R.O. Woodbury.* 1981a. Status report on *Peperomia wheeleri* Britton. Status report submitted to the U.S. Fish and Wildlife Service, Mayaguez, P.R. 30 pp.
- Vivaldi, J.L., and R.O. Woodbury.* 1981b. Status report on *Banara vanderbiltii* Urban. Unpublished status report submitted to the U.S. Fish and Wildlife Service, Mayaguez, P.R. 35 pp.

#### Author

The primary author of this final rule is Mr. David Densmore, Caribbean Field Office, U.S. Fish and Wildlife Service, P.O. Box 491, Boqueron, Puerto Rico 00622 (809/851-7297).

#### List of Subjects in 50 CFR Part 17

Endangered and threatened wildlife, Fish, Marine mammals, Plants (agriculture).

Regulation Promulgation

3751; Pub. L. 96-159, 93 Stat. 1225; Pub. L. 97-304, 96 Stat. 1411 (16 U.S.C. 1531 *et seq.*).

**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: Pub. L. 93-205, 87 Stat. 884; Pub. L. 94-359, 90 Stat. 911; Pub. L. 95-632, 92 Stat.

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

**§ 17.12 Endangered and threatened plants.**

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(h) \* \* \*

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Flacourtiaceae— Flacourtiaceae family. <i>Banara vanderbiltii</i>	Palo de Ramon.....	U.S.A. (PR)	E	254	NA	NA
Piperaceae—Pepper family: <i>Peperomia</i> <i>wheelerii</i>	Wheeler's peperomia.....	U.S.A. (PR)	E	254	NA	NA

Dated: December 31, 1986.

**P. Daniel Smith,**  
*Acting Assistant Secretary for Fish and  
Wildlife and Parks.*

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