

**50 CFR Part 17****Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for *Solanum Drymophilum* (Erubia)**

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

**ACTION:** Proposed rule.

**SUMMARY:** The Service proposes to determine the plant *Solanum drymophilum* (erubia) to be an endangered species pursuant to the Endangered Species Act (Act) of 1973, as amended. Critical habitat is not proposed. *Solanum drymophilum* is now limited to the lower montane region of southeastern Puerto Rico. The species is affected by housing construction and

deliberate eradication. This proposal, if made final, would implement the Federal protection and recovery provisions afforded by the Act for *Solanum drymophilum*. The Service seeks data and comments from the public on this proposal.

**DATES:** Comments from all interested parties must be received by January 19, 1988. Public hearing requests must be received by January 4, 1988.

**ADDRESSES:** Comments and materials concerning this proposal should be sent to the Field Supervisor, Caribbean Field Office, U.S. Fish and Wildlife Service, P.O. Box 491, Boquerón, Puerto Rico 00622. Comments and materials received will be available for public inspection, by appointment, at this office during normal business hours, and at the Service's Southeast Regional Office, Suite 1282, 75 Spring Street SW., Atlanta, Georgia 30303.

**FOR FURTHER INFORMATION CONTACT:** Mrs. Susan Silander 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**

*Solanum drymophilum* was first collected in 1885 by Paul Sintenis in the Sierra de Cayey, a range of foothills extending to the southeast from the Central Cordillera of Puerto Rico. The species was later found at several scattered locations in these mountains and to the northeast in the Sierra de Naguabo. In the 1950's, R.O. Woodbury found the species near Lares, a town in the lower mountains of western Puerto Rico (Vivaldi and Woodbury 1981). The species has never been observed between these widely disjunct locations. Since its discovery, *Solanum drymophilum* has been extirpated from all known sites except one in the Sierra de Cayey, where approximately 200 plants survive.

*Solanum drymophilum* is a tall evergreen shrub occasionally reaching 18 feet (5.5 meters) in height, sometimes having a single stem, but often branching from the base. Young twigs, leaves, and flowers are covered with whitish, star-shaped hairs, and the leaves and inflorescences are also armed with numerous yellowish, stiff

spines nearly one-half inch (1.25 centimeters) in length. The leaves are alternate, lanceolate to oblanceolate, with entire margins. The bisexual flowers are white, wheel-shaped, fan-folded, and borne in subterminal racemes. The fruits are round, shiny-black berries one-quarter inch (6 to 8 millimeters) in diameter. The species is endemic to evergreen forests on volcanic soils from 1,000 to 3,000 feet (300 to 900 meters) in elevation. The site where the single population remains is an area of volcanic outcrops known as Las Tetas de Cayey. This site is at an elevation of 2,760 feet (840 meters), where there is a mosaic of pasture, remnants of native evergreen forest in draws and on hilltops, and several cleared homesites.

Although the extensive deforestation of the region has caused the loss of known *Solanum drymophilum* populations and probably of other plant species, it is not certain what the actual or potential range and abundance of the species was in the past. It is possible that it was once at least locally common in many parts of eastern Puerto Rico, and may have also been numerous in the western mountains. The loss of plants to land clearing and deliberate eradication has been documented in the Cayey area (Vivaldi and Woodbury 1981).

*Solanum drymophilum* was recommended for Federal listing by the Smithsonian Institution (Ayensu and DeFilippis 1978). The species was included among the plants being considered as endangered or threatened species by the Fish and Wildlife Service, as published in the *Federal Register* (45 FR 82480) dated December 15, 1980. The species was designated category 1 (species for which the Service has substantial information supporting the appropriateness of proposing to list them as endangered or threatened), and was 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 new 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 made subsequent petition findings in October of 1983, 1984, 1985, and 1986 that listing *Solanum drymophilum* was warranted but precluded by other pending listing actions, in accordance with section 4(b)(3)(B)(iii) of the Act. This proposed rule indicates that the petitioned action

is warranted, and constitutes a final required petition finding in accordance with section 4(b)(3)(B)(ii) of the Act.

#### Summary of Factors Affecting the Species

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 set forth the procedures for adding species to the Federal lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Solanum drymophilum* Schulz (erubia) are as follows:

**A. The present or threatened destruction, modification, or curtailment of its habitat or range.** Modification of habitat and direct destruction of plants appear to have been, and continue to be, significant factors reducing the numbers of *Solanum drymophilum*. Of four populations documented by the collection of specimens, only one is known to survive. All of the approximately 200 known individuals at the remaining site occur on private land, most within a pasture surrounded by lots being cleared and developed for private homes, as well as one communications facility operated by the Puerto Rico Telephone Company. It is likely that deforestation prior to creation of pasturelands destroyed many plants at this and other sites in the region. However, it is also possible that, given this species' apparent ability to recolonize disturbed sites, new plants became established within these pastures, and were subsequently eradicated because of their perceived threat to livestock. It has been reported (Vivaldi and Woodbury 1981) that this species is viewed as a pest, and is cut whenever encountered in the fields. *Solanum drymophilum* is extremely spiny, and in some cases the concern for injury to livestock may be justified. Nevertheless, mature plants become progressively less spiny, and the foliage is generally out of the reach of most browsers. Only the young plants are readily accessible to animals, and these were observed to be quite numerous in the remaining pasture supporting most of the known population. Thus, either the species reproduces more rapidly than it can be cut, or there is now less concern regarding its threat to animals.

**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.

**C. Disease or predation.** Disease and predation have not been documented as factors in the decline of this species.

**D. The inadequacy of existing regulatory mechanisms.** The Commonwealth of Puerto Rico has adopted a regulation that recognizes and provides protection for certain Commonwealth listed species. However, *Solanum drymophilum* is not yet on the Commonwealth list. Federal listing would provide interim protection and, if the species is ultimately placed on the Commonwealth list, enhance its protection and possibilities for funding needed research.

**E. Other natural or manmade factors affecting its continued existence.** The most important factor affecting this species' continued survival is its restricted distribution, with approximately 200 plants known to inhabit a five-acre area that is subject to commercial development. Continued cutting of the plants to alleviate perceived threats to livestock may not drive the species to extinction, but intensive land alteration at the only known population site could lead to that result. The species appears well-adapted to low levels of disturbance, and readily reseeds open areas. However, total land clearance, as is being practiced on surrounding lands, would eliminate potential sources of seed.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to propose this rule. Based on this evaluation, the preferred action is to list *Solanum drymophilum* as endangered. Although the species seems to produce viable seed in good quantity, and may only require protection from land clearing and deliberate cutting to survive and increase its numbers in the Cayey area, only this single population and limited area of occurrence are known. Therefore, endangered rather than threatened status seems an accurate assessment of the species' condition. The reasons for not proposing critical habitat for this species are discussed below in the "Critical Habitat" section.

#### 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 which 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 this species at this

time. The number of individuals of *Solanum drymophilum* is sufficiently small that vandalism could seriously affect the survival of the species. Publication of critical habitat descriptions and maps in the Federal Register would increase the likelihood of such activities. The Service believes that Federal involvement in the areas where this plant occurs can be identified without the designation of critical habitat. All involved parties and landowners have been or will be notified of the location and importance of protecting this species' habitat. Protection of this species' habitat will also be addressed through the recovery process and through the section 7 jeopardy standard. Therefore, it would not be prudent to determine critical habitat for *Solanum drymophilum* 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 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)(4) 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 subsequently listed, 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 *Solanum drymophilum*, as discussed above. Federal involvement is not expected where the species is known to occur.

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, would 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 *Solanum drymophilum* will ever be sought or issued, since the species is not known to be in cultivation and is 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, U.S. Fish and Wildlife Service, Washington, DC 20240 (703/235-1903).

#### Public Comments Solicited

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, any comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning any aspect of 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 *Solanum drymophilum*;
- (2) The location of any additional populations of *Solanum drymophilum*, 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 and distribution of this species; and

(4) Current or planned activities in the subject areas and their possible impacts on *Solanum drymophilum*.

Final promulgation of the regulation on *Solanum drymophilum* will take into consideration the comments and any additional information received by the Service, and such communications may lead to adoption of a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be filed within 45 days of the date of the proposal. Such requests must be made in writing and addressed to the Field Supervisor, Caribbean Field Office, U.S. Fish and Wildlife Service, P.O. Box 491, Boquerón, Puerto Rico 00622.

#### 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, DC. xv + 403 pp.
- Vivaldi, J.L., and R.O. Woodbury. 1981. Status report on *Solanum drymophilum* Schulz. Unpublished status report submitted to the U.S. Fish and Wildlife Service, Atlanta, Georgia. 24 pp.

#### Author

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

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

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

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

3751; Pub. L. 96-159, 93 Stat. 1225; Pub. L. 97-304, 96 Stat. 1411 (16 U.S.C. 1531 *et seq.*); Pub. L. 99-625, 100 Stat. 3500 (1986), unless otherwise noted.

2. It is proposed to amend § 17.12(h) by adding the following, in alphabetical order under Solanaceae, 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					
Solanaceae—Nightshade family	.	.	.	.	.	.
<i>Solanum dymophilum</i>	Erubia	U.S.A. (PR)	E		NA	NA

Dated: October 22, 1987.

Susan Recce,

Acting Assistant Secretary for Fish and Wildlife and Parks.

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