

#169-91

DEPARTMENT OF THE INTERIOR**Fish and Wildlife Service****50 CFR Part 17****RIN 1018-AB73****Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for the Plant *Echinacea laevigata* (Smooth Coneflower)****AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Proposed rule.

SUMMARY: The Service proposes to list *Echinacea laevigata* (smooth coneflower), a perennial herb limited to 19 populations in Virginia, North Carolina, South Carolina, and Georgia, as an endangered species under the authority of the Endangered Species Act of 1973, as amended (Act). *Echinacea laevigata* is endangered by collecting, encroachment of woody vegetation, residential and industrial development, highway construction and improvement, and roadside and power line right-of-way maintenance. This proposal, if made final, would implement Federal protection provided by the Act for *Echinacea laevigata*. The Service seeks data and comments from the public on this proposal.**DATES:** Comments from all interested parties must be received by February 7, 1992. Public hearing requests must be received by January 23, 1992.**ADDRESSES:** Comments and materials concerning this proposal should be sent to the Field Supervisor, Asheville Field Office, U.S. Fish and Wildlife Service, 330 Ridgely Court, Asheville, North Carolina 28806. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Ms. Nora Murdock at the above address (704/665-1195).

SUPPLEMENTARY INFORMATION:

Background

Echinacea laevigata is a rhizomatous perennial herb described by Boynton and Beadle in Small (1903) from material collected in South Carolina in 1888. This coneflower grows up to 1.5 meters tall from a vertical root stock; stems are smooth, with few leaves. The largest leaves are the basal leaves, which reach 20 cm in length and 7.5 cm in width, have long stems, and are elliptical to broadly lanceolate, tapering to the base, and smooth to slightly rough. The mid-stem leaves have shorter stems or no stems and are smaller in size than the basal leaves. The flowers are light pink to purplish, 2 to 2.5 cm broad, and usually solitary. The rays (petal-like structures) usually droop. Flowering occurs from May through July. The fruit is a gray-brown, oblong-prismatic achene, usually four-angled, and 4 to 0.5 mm long; seeds are .5 cm long (Kral 1983, Radford *et al.* 1964, McGregor 1968, Cronquist 1980, Gaddy 1991, and Wofford 1989). The smooth coneflower can be distinguished from its most similar relative, the purple coneflower (*E. purpurea*), by its leaves, which in the smooth coneflower are never cordate like those of the purple coneflower. In addition, the awn of the pale in the smooth coneflower is incurved, while that of *E. purpurea* is straight (Kral 1983, Gaddy 1991, and Wofford 1989).

The reported historical range of *Echinacea laevigata* included Pennsylvania, Maryland, Virginia, North Carolina, South Carolina, Georgia, Alabama, and Arkansas. The species is now known to survive only in Virginia, North Carolina, South Carolina, and Georgia. Four populations survive in Virginia, six in North Carolina, six in South Carolina, and three in Georgia. Three additional populations in South Carolina (two in Aiken County and one in Allendale County) are believed to have been introduced. The habitat of smooth coneflower is open woods, cedar barrens, roadsides, clearcuts, dry limestone bluffs, and power line rights-of-way on magnesium- and calcium-rich soils associated with limestone (in Virginia), gabbro (in North Carolina and Virginia), diabase (in North Carolina and South Carolina), and marble (in South Carolina and Georgia). Optimal sites are characterized by abundant sunlight and little competition in the herbaceous layer (Gaddy 1991). Natural fires, as well as large herbivores, including elk and bison, are part of the

history of the vegetation in this species' range; many of the associated herbs are also cormophytic, sun-loving species, which depend on periodic disturbances to reduce the shade and competition of woody plants (Kral 1983 and Gaddy 1991).

A total of 58 populations of *Echinacea laevigata* have been reported historically from 24 counties in 8 States. The reports from Alabama and Arkansas are now believed to have been misidentifications (Gaddy 1991). Of the 19 remaining populations (located in Pulaski, Montgomery, Campbell, and Franklin Counties, Virginia; Durham and Granville Counties, North Carolina; Oconee County, South Carolina; and Stephens County, Georgia), 7 occur on land managed by the U.S. Forest Service, 2 are on U.S. Army Corps of Engineers lands, 1 is on North Carolina Department of Agriculture land, 1 site is owned by The Nature Conservancy, 1 site is within a right-of-way maintained by the South Carolina Department of Highways and Public Transportation, and the remaining 7 are on privately owned lands. Several of these populations are in or near transmission line corridors of various utility companies or are near highway rights-of-way. Extirpated populations are believed to have succumbed due to the absence of natural disturbance (fire and/or grazing), highway construction and improvement, gas line installation, and residential and industrial development. The continued existence of *Echinacea laevigata* is threatened by these activities, as well as by collecting, herbicide use, and possibly by encroachment of exotic species.

Federal government actions on this species began with section 12 of the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*), which directed the Secretary of the Smithsonian Institution to prepare a report on those plants considered to be endangered, threatened, or extinct. This report, designated as House Document number 94-51, was presented to Congress on January 9, 1975. The Service published a notice in the July 1, 1975, **Federal Register** (40 FR 27832) of its acceptance of the report of the Smithsonian Institution as a petition within the context of section 4(c)(2) (now section 4(b)(3)) of the Act and of its intention thereby to review the status of the plant taxa named within.

On December 15, 1980, the Service published a revised notice of review for native plants in the **Federal Register** (45 FR 82480); *Echinacea laevigata* was included in that notice as a category 2 species. Category 2 species are those

species for which listing as endangered or threatened may be warranted but for which substantial data on biological vulnerability and threats are not currently known or on file to support proposed rules.

Subsequent revisions of the 1980 notice have maintained *Echinacea laevigata* in category 2. Recently completed status survey work has provided sufficient data to support the current proposal.

Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered Species Act 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 endangered or threatened due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Echinacea laevigata* (Boynton and Beadle) Blake (smooth coneflower) are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* *Echinacea laevigata* has been and continues to be endangered by destruction or adverse alteration of its habitat. Since discovery of the species, 67 percent of the known populations have been extirpated, partly as a result of conversion of habitat for silvicultural and agricultural purposes and for industrial and residential development. Fire suppression appears to be a problem for this species and will be discussed in detail under Factor E below. Of the 39 populations that have been extirpated, one is known to have been eliminated by highway construction, another by construction of a gas pipeline, and a third by conversion of the site to pine plantation. Causes for the extirpation of the others are unknown. Many of the remaining populations are on the edges of highways or utility rights-of-way. The largest population remaining is in Cranville County, North Carolina. This population, which contains one-third of the total smooth coneflower plants in existence, occupies a site that has recently been proposed for construction of a regional hazardous waste incinerator. Eleven of the 19 remaining populations are currently declining in numbers of plants; only 7 are considered stable, and 1 is increasing. Eighteen of the remaining 19 populations are currently threatened by habitat alterations (Gaddy 1991).

Half of the remaining populations survive along roadsides. Two

populations remain on utility line rights-of-way, another is along an abandoned railroad right-of-way, and a fourth is on the edge of a motorbike trail in a wooded area. Most of the populations are small, with 10 containing less than 100 plants each. Three of these contain less than 10 plants each. Such small populations are inherently vulnerable to extirpation as a result of highway and right-of-way improvement, particularly if herbicides are used.

The extreme narrowness of geographic range and the scarcity of seed sources, as well as appropriate habitat, increase the severity of the threats faced by *Echinacea laevigata*. As stated in the "Background" section above, this species requires some form of disturbance to maintain its open habitat and can withstand mowing and timber-harvesting operations, if properly done. It cannot withstand bulldozing or direct application of broadleaf herbicides. In addition, the small populations that survive on road edges could be easily destroyed by highway improvement projects or by right-of-way maintenance activities if these are not done in a manner consistent with protecting the species.

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* *Echinacea laevigata*, although it is offered for sale by a few native plant nurseries, is not currently a significant component of the commercial trade in native plants. However, many of the more common native coneflowers are in demand for horticultural use and are a significant part of the commercial trade. Publicity could generate an increased demand of this attractive species, which might exceed the currently available sources of cultivated material. Because of its small and easily accessible populations, it is vulnerable to taking and vandalism that could result from increased specific notoriety.

Overshadowing the potential threat of taking for horticultural purposes is the threat of commercial collection for the pharmaceutical trade. For over a century, Midwestern species in this genus have been harvested and sold in European and American markets under the trade name "Kansas snake root" (McGregor 1968). In Germany alone, over 280 products made from various species of this American genus are registered for medicinal use (Bauer 1990). As stated by Steven Foster (personal communication, 1990):

The potential danger of inadvertent harvest of plants for commercial markets may be the greatest hidden danger to *Echinacea laevigata* * * * we have been able to document that three endemic species have also been

harvested without proper attention to species identity in the Midwest. These include the Ozark endemics, *E. paradoxa* and *E. simulata*, as well as *E. atrorubens*.

Documented harvests have reached as high as 200,000 pounds collected from a single Kansas county in 1 year. Given the fact that at least 8 to 10 dried roots are required to make up 1 pound, this single harvest represented the collection of approximately two million roots. Dr. Ronald McGregor, director emeritus of the herbarium at the University of Kansas and the leading authority on the genus *Echinacea* (in Foster 1991), noted drastic declines in Kansas populations of *Echinacea pallida* as a result of commercial harvests in the 5 years prior to 1987. Although most of the commercial supply of *Echinacea purpurea* now comes from cultivated sources, the demand for the roots far outstrips the commercial supply and is resulting in increasing pressure on wild populations of nearly every species in the genus.

In 1987, 7,000 individuals of the Ozark endemic *Echinacea paradoxa* were stolen from a Missouri State park (Wallace 1987). Wallace further stated, "Diggers do not discriminate between species, collecting all *Echinaceas*." Foster (1991) further states:

Unfortunately, a number of the endemic and more unusual *Echinacea* species are entering commercial lots, dug by unwitting harvesters. In the Ozarks, this author has observed *Echinacea simulata*, harvested by the truck load. Roadside populations have decreased dramatically in South Central Missouri. The plant is much less common in northern Arkansas. Commercial harvest of this species from the wild cannot be sustained. If harvested at current levels over the next 10 years, its fate will be extinction.

Although such devastation of *Echinacea laevigata* populations for the commercial pharmaceutical trade has not yet been documented, over two-thirds of the originally known populations of this species are gone. Those remaining are small, easily accessible, and highly vulnerable.

C. *Disease or predation.* *Echinacea angustifolia* is known to be a host plant for certain species of leaf beetle (family Chrysomelidae) (Wilcox 1979). Beetles in this family have been observed on *Echinacea laevigata* in North Carolina, but it is unknown what effect they have on the plants. At this time there is no known threat to this species from disease.

D. *The inadequacy of existing regulatory mechanisms.* *Echinacea laevigata* is listed in North Carolina as

endangered (Sutter 1990), in South Carolina as threatened (Rayner *et al.* 1984), as threatened in Georgia (McCollum and Eitman 1987), and in Alabama as endangered (Freeman *et al.* 1979). The species is not listed in Virginia.

In North Carolina, *Echinacea laevigata* is afforded legal protection by North Carolina general statutes, § 106-202.122, 106-202.19 (Cum. Supp. 1985). This legislation provides for protection from intrastate trade (without a permit), provides for monitoring and management of State-listed species, and prohibits taking of plants without written permission of landowners. In Georgia the species is afforded legal protection under the Wildflower Preservation Act of 1973, Code of Georgia Ann., title 43, section 43-1801 to 43-1806. Georgia legislation prohibits taking of listed plants from public lands (without a permit) and regulates the sale and transport of plants within the State. Although South Carolina and Alabama recognize this species as threatened and endangered, respectively, neither State offers legal protection for plants. State prohibitions against taking are difficult to enforce and do not cover adverse alterations of habitats, such as exclusion of fire. The Endangered Species Act would provide additional protection and encouragement of active management for *Echinacea laevigata*.

E. *Other natural or manmade factors affecting its continued existence.* As mentioned in "Background" section of this proposed rule, many of the remaining populations are small in numbers of individual stems and of area covered by the plants. Therefore, there may be low genetic variability within populations, making it more important to maintain as much habitat and as many of the remaining colonies as possible. Much remains unknown about the demographics and reproductive requirements of this species in the wild, although several of the other species in the genus are readily cultivated and grown from seed. A few commercial nurseries specializing in native plants are currently propagating this species and are offering cultivated specimens for sale.

Fire or some other suitable form of disturbance, such as well-timed mowing or careful clearing, is essential to maintaining the glade remnants occupied by *Echinacea laevigata*. Without such periodic disturbance, this type of habitat is gradually overtaken and eliminated by shrubs and trees of the adjacent woodlands. As the woody species increase in height and density, they overtop *Echinacea laevigata*.

which, like most other coneflowers, is intolerant of dense shade. In addition, the species seems to require bare soil for germination of seeds. The current distribution of the species is ample evidence of its dependence on disturbance. Of the 19 remaining populations, 13 are on roadsides, in utility or railroad rights-of-way, or adjacent to trails.

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 *Echinacea laevigata* as endangered. With over two-thirds of the species' populations already having been eliminated and only 19 remaining in existence, and based upon its dependence on some form of active management, it definitely warrants protection under the Act. Endangered status seems appropriate because of the imminent serious threats facing all but one of the remaining populations. The largest population remaining, containing almost a third of the total surviving plants, occupies the site of a proposed regional hazardous waste incinerator.

Critical habitat is not being designated for the reasons discussed below.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that, to the maximum extent prudent and determinable, the Secretary propose critical habitat at the time the species is proposed to be endangered or threatened. The Service finds that designation of critical habitat is not presently prudent for *Echinacea laevigata*. As discussed in Factor B in the "Summary of Factors Affecting the Species," *Echinacea laevigata* is threatened by taking, an activity only regulated by the Act with respect to plants in cases of (1) removal and reduction to possession of endangered plants from lands under Federal jurisdiction or their malicious damage or destruction on such lands; and (2) removal, cutting, digging up, or damaging or destroying in knowing violation of any State law or regulation, including State criminal trespass law. Half of the populations are located on Federal land while the rest are on State or private land. Two of the four States with known populations have no restrictions on taking. The other two have limited restrictions—Georgia prohibits taking on public lands without a permit, and North Carolina prohibits taking without permission from the landowner. However, taking provisions

are difficult to enforce, regardless of land ownership, and publication of critical habitat descriptions and maps in the Federal Register and local newspapers would make *Echinacea laevigata* more vulnerable and would increase enforcement problems. All involved parties and principal landowners have been notified of the location and importance of protecting this species' habitat. Protection of this species' habitat will be directed through the recovery process and through the section 7 consultation process. Therefore, it would not now be prudent to determine critical habitat for *Echinacea laevigata*.

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, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against certain activities involving listed plants are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(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 the destruction or adverse modification of proposed critical habitat. If the species is listed subsequently, 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.

Federal activities that could impact *Echinacea laevigata* and its habitat in the future include, but are not limited to, the following: power line construction,

maintenance, and improvements; highway construction, maintenance, and improvements; forest management activities; and permits for mineral exploration and mining. The Service will work with the involved agencies to secure protection and proper management of *Echinacea laevigata* while accommodating agency activities to the extent possible.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 set forth a series of general prohibitions and exceptions that apply to all endangered plants. 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, transport in interstate or foreign commerce in the course of commercial activity, sell or offer for sale this species in interstate or foreign commerce, or to remove and reduce to possession the species from areas under Federal jurisdiction. In addition, for endangered plants, the 1988 amendments (Pub. L. 100-478) to the Act prohibited the malicious damage or destruction on Federal lands and the removal, cutting, digging up, damaging or destroying of endangered plants in knowing violation of any State law or regulation, including 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 species under certain circumstances.

It is anticipated that some trade permits will be sought because the species is already in cultivation and is a part of the commercial trade in native plants. Commercial sources of cultivated material should be encouraged in order to reduce pressure on wild populations. Requests for copies of the regulations on listed 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 (703/358-2104).

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 the

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 this species;

(2) The location of any additional populations of this 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 this species; and

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

Final promulgation of the regulation on this species 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 a public hearing on this proposal, if requested. Requests must be received within 45 days of the date of publication of the proposal. Such requests must be made in writing and should be addressed to the Field Supervisor, Asheville Field Office (see **ADDRESSES** section).

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

- Bauer, R., and H. Wagner. 1990. *Echinacea*: Handbuch Für Ärzte, Apotheker und Andere Naturwissenschaftler. Wissenschaftliche Verlagsgesellschaft mbH, Stuttgart, Germany. 182 pp.
- Cronquist, A. 1980. Vascular Flora of the Southeastern United States; Volume 1, Asteraceae. University of North Carolina Press, Chapel Hill, NC. P. 29.
- Foster, S. 1991. *Echinacea*—Nature's Immune Enhancer. Healing Arts Press, Rochester, VT. 150 pp.
- Freeman, J., A. Causey, J. Short, and R. Haynes, 1979. Endangered, Threatened, and Special Concern Plants in Alabama. Botany and Microbiology Series No. 3. Alabama Agricultural Experiment Station, Auburn, AL. 24 pp.
- Gaddy, L.L. 1991. The Status of *Echinacea laevigata* (Boynton and Beadle) Blake. Unpublished report to the U.S. Fish and Wildlife Service, Asheville, NC. 24 pp. plus appendices and maps.
- Kral, R. 1983. A Report on Some Rare, Threatened, or Endangered Forest-related Vascular Plants of the South. USDA, Forest Service. Technical Publication R8-TP2. Pp. 1135-1138.
- McCollum, J., and D. Ettman. 1987. Georgia's Protected Plants. Revised Edition. Georgia Department of Natural Resources, Atlanta, GA. 64 pp.
- McGregor, R. 1968. The Taxonomy of the Genus *Echinacea* (Compositae). The University of Kansas Science Bulletin 48:113-142.
- Radford, A., H. Ahles, and C. Bell. 1964. Manual of the Vascular Flora of the Carolinas. University of North Carolina Press, Chapel Hill, NC. P. 1110.
- Rayner, D., and committee. 1984. Native Vascular Plants Endangered, Threatened, or Otherwise in Jeopardy in South Carolina. South Carolina Wildlife and Marine Resources Department, Columbia, SC. 25 pp.
- Small, J.K. 1903. Manual fo the Southeastern Flora. New York, NY. P. 1421

- Sutter, R. 1990. List of North Carolina's Endangered, Threatened, and Candidate Plant Species. Plant Conservation Program, North Carolina Department of Agriculture, Raleigh, NC. 18 pp.
- Wallace, G. 1987. Coneflower Alert. Petal Pusher; Missouri Native Plant Society 2(3):3.
- Wilcox, J. 1979. Leaf Beetle Host Plants in Northeastern North America. Biological Research Institute of America, Inc. World Natural History Publications, Kinderhook, NY. P. 11.
- Wofford, B.E. 1989. Guide to the Vascular Plants of the Blue Ridge. University of Georgia Press, Athens, GA. P. 164.

Author

The primary author of this proposed rule is Ms. Nora Murdock (see **ADDRESSES** section).

List of Subjects in 50 CFR Part 17

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

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: 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 Asteraceae, 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					
Asteraceae—Aster family:						
<i>Echinacea laevigata</i>	Smooth coneflower	U.S.A. (GA, MD, NC, PA, SC, VA)	E	.	NA	NA

Dated: November 13 1991.

Richard N. Smith,

Acting Director, Fish and Wildlife Service.

[FR Doc. 91-29400 Filed 12-6-91; 8:45 am]

BILLING CODE 4310-55-M