

## 50 CFR PART 17

RIN 1018-AB73

**Endangered and Threatened Wildlife and Plants; *Echinacea laevigata* (Smooth Coneflower) Determined To Be Endangered****AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Final rule.

**SUMMARY:** The Service determines the plant *Echinacea laevigata* (smooth coneflower), a perennial herb limited to 21 populations in Virginia, North Carolina, South Carolina, and Georgia, to be 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 certain types of roadside and power line right-of-way maintenance. This action implements Federal protection provided by the Act for *Echinacea laevigata*.

**EFFECTIVE DATE:** November 9, 1992.

**ADDRESSES:** The complete file for this rule is available for inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, 330 Ridgefield Court, Asheville, North Carolina 28806.

**FOR FURTHER INFORMATION CONTACT:** Ms. Nora Murdock at the above address (704/685-1195, Ext. 231).

**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 rays of the flowers (petal-like structures) are light pink to purplish, usually drooping, and 5 to 8 cm long. Flower heads are usually solitary. Flowering occurs from May through July. The fruit is a gray-brown, oblong-prismatic achene, usually four-angled, and 4 to 4.5 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 (heart-shaped) 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. Five populations survive in Virginia, six in North Carolina, seven 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, usually 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, 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 59 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 21 remaining populations (located in Pulaski, Montgomery, Campbell, and Franklin Counties, Virginia; Durham and Granville Counties, North Carolina; Oconee and Anderson Counties, 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 owned by the South Carolina Heritage Trust Program, 1 site is within a right-of-way maintained by the South Carolina Department of Highways and Public Transportation, 1 is on land managed by Clemson University, 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 Act (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.

Section 4(b)(3)(B) of the Act, as amended in 1982, 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 that all petitions pending on October 13, 1982, be treated as having been newly submitted on that date. This was the case for *Echinacea laevigata* because the Service had accepted the 1975 Smithsonian report as a petition. In each October from 1983 through 1990, the Service found that the petitioned listing of this species was warranted but precluded by other listing actions of a higher priority, and that additional data on vulnerability and threats were still being gathered.

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. However, recently completed status survey work provided sufficient data to support proposing the species as endangered, and indicated the species to have a listing priority of 2 (see **Federal Register** of September 21, 1983 (48 FR 43098) for discussion of priority guidelines). A proposal was published on December 9, 1991 (56 FR 64229) to list *Echinacea laevigata* as endangered, and constituted the final 12-month finding for this species under Section 4(b)(3)(B) of the Act.

### Summary of Comments and Recommendations

In the December 9, 1991, 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. Newspaper notices inviting public comment were published in the *Durham Herald* (North Carolina) on December 29, 1991, and the *Roanoke Times and World News* (Virginia) on December 27, 1991.

Twenty-one comment letters were received. Nineteen of these expressed support for the proposal, and two presented additional information without stating a position.

### Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that *Echinacea laevigata* should be classified as an endangered species. Procedures found at section 4(a)(1) of the Act and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act were followed. 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, 64 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 38 populations that have been extirpated, one is known to have been eliminated by highway construction, another by construction of a gas line, 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

Granville 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. Of the 21 extant populations, 13 are currently declining in numbers of plants, only 7 are considered stable, and 1 is increasing. Nineteen of the populations are currently threatened by habitat alterations (Gaddy 1991).

Half of the remaining populations survive along roadsides. Three populations remain on utility line rights-of-way, another is along an abandoned railroad right-of-way, and a fifth is on the edge of a motorbike trail in a wooded area. Most of the populations are small, with 11 containing less than 100 plants each. Four 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.

Highly restricted distribution 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 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 for 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 and Wagner 1990). As stated by Steven Foster (Consultant, Eureka Springs, Arkansas, 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, almost 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 nationally threatened (Rayner *et al.* 1984), in Georgia as threatened (McCollum and Ertman 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. Suppl. 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 the 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 nationally 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 will 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 in 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 21 remaining populations, 15 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 make this rule final. 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 21 remaining in existence, and based upon its dependence on some form of active management, it definitely warrants protection under the Act. Endangered status appropriate because of the imminent serious threats facing all but one of the remaining populations. The largest population remaining, which contains 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 designate critical habitat at the time the species is determined 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, take 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 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 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)(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.

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 a 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 prohibit 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 N. Fairfax Drive, room 432, Arlington, Virginia 22203 (703/358-2104).

#### 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).

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**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.

**Regulation Promulgation**

Accordingly, part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, is amended 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; Public Law 99–625, 100 Stat. 3500; unless otherwise noted.

2. Amend § 17.12(h) by adding the following, in alphabetical order under the family 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	481	NA	NA

Dated: September 23, 1992.  
**Richard N. Smith,**  
 Acting Director, Fish and Wildlife Service.  
 [FR Doc. 92-24440 Filed 10-7-92; 8:45 am]  
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