**50 CFR Part 17**

## Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for Ptilimnium nodosum

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

**ACTION:** Final rule.

**SUMMARY:** The Service determines *Ptilimnium nodosum* (harperella) as an endangered species, under the authority of the Endangered Species Act of 1973, as amended (Act). This annual plant, which is a member of the carrot family, occurs in Alabama, Georgia, North and South Carolina, West Virginia, and Maryland. *P. nodosum* has been eliminated from over half of its known historical population sites rangewide. None of the ten currently known viable populations is in Federal ownership or other permanently protected status, although The Nature Conservancy has an easement on a small portion of one population in West Virginia and is trying to protect populations in other States. This action implements Federal protection provided by the Act for *Ptilimnium nodosum*.

**EFFECTIVE DATE:** October 28, 1988.

**ADDRESSES:** The complete file for this rule is available for public inspection, by appointment, during normal business hours at Ecological Services Field Office, 1825 Virginia Street, Annapolis, Maryland 21401.

**FOR FURTHER INFORMATION CONTACT:** Judy Jacobs, Endangered Species Biologist at the above address (301/269-5448).

**SUPPLEMENTARY INFORMATION:**

### Background

In 1902 Dr. Roland M. Harper discovered a previously undescribed plant growing in a shallow pineland pond in Schley County, Georgia. Three years later, Dr. Harper collected what appeared to be a second, closely related species from a rock stream bed in DeKalb County, Alabama. These plants were named *Harperella nodosa* and *Harperella fluviatilis* respectively, in honor of their discoverer (Rose 1905, 1911). Mathias (1936) noted that despite their very different leaf structure, these plants were not generically distinct from members of the genus *Ptilimnium*. Thus, they became *Ptilimnium nodosum* and *P. fluviatile*, although they are still referred to by the common name, harperella.

In a recent examination of these taxa, Kral (1981) concluded that their observable differences in morphology and phenology were very likely due to environmental factors, rather than to inherent genetic differences. This is supported by the observation that both forms have six chromosome pairs (Easterly 1957). Kral (1981) observed that the riverine form, *P. fluviatile*, is shorter and develops roots at the nodes, probably because the plants are frequently inundated and toppled by swift-flowing water in the stream situations they inhabit. Conversely, the taller, erect and non-proliferous plants referred to as *P. nodosum* occur in the fringe of grass and sedge around ponds, where they are less likely to be knocked down by floodwaters. That these morphological differences were environmentally induced was particularly evident to Kral (1981) in the Little River population of "*P. fluviatile*" in Alabama; there, the plants from the higher seep areas, where flooding is infrequent, were more clearly assignable to the "*P. nodosum*" type. Differences in flowering time between the pond and river forms are also likely due to environmental factors, such as differences in temperature and time of flooding (R. Kral, Vanderbilt University, pers. comm., 1987). Because there is no apparent way to take into account their variation and yet to distinguish the two taxa, Kral (1981) synonymized the two under *P. nodosum*, the earlier name. In this rule, the Service follows Kral's treatment; thus, references to *P. nodosum* will be meant to include *P. fluviatile*, unless otherwise indicated.

*P. nodosum*, an annual plant, is a member of the carrot family (Apiaceae) that grows to a height of 0.2–1.0 meter. Unlike those of the more common members of this genus, the leaves of *P. nodosum* are reduced to hollow, quill-like structures. The small white flowers occur in heads not unlike those of "Queen Annes lace" (*Daucus carota*), and may appear from May to frost. *P. nodosum* typically occurs in two habitat types: (1) Rocky or gravel shoals and margins of clear, swift-flowing stream sections, and (2) the edges of intermittent pineland ponds or low, wet savannah meadows in the coastal plain (Kral 1983). In Georgia, the only known extant population occurs on a granite outcrop seep. This seemingly atypical setting actually has a water regime not unlike that of more characteristic pond habitat for this plant (Rawinski and Cassin 1986).

Harperella is always found on saturated substrates and readily tolerates periodic, moderate flooding. This tolerance may, in fact, be of key importance to the plant's survival, for few potential competitors are adapted to such water fluctuations. In riverine situations, short-duration spring floods annually scour the gravel bars or rock crevices where *P. nodosum* grows, preventing substantial soil accumulations in which weedy competitors might gain a foothold. When floodwaters subside harperella seeds germinate in shallow, rocky areas and complete their life cycle with their root systems submerged or saturated. Similarly, pond sites are normally full of water in the spring and, depending on the rainfall, often well into the summer. The plants have completed their life cycle by late summer or fall, when the ponds are often devoid of standing water and competing species have moved in. As in the riverine situation, it appears that *P. nodosum* has survived by its adaptation to changing water levels that few other plants can tolerate.

Because of its very specific habitat requirements, harperella can be easily extirpated from an area even by seemingly minor perturbations. In riverine situations, for example, prolonged or intensified flooding, as a result of upstream land use changes, could wash away its substrate and its seed bank. Conversely, reductions or lack of flooding, as from upstream impoundments, could decrease the species' competitive edge over more common streamside plants. In pond situations, ditching and draining for

irrigation and/or agriculture would be of obvious detriment to harperella. Conversion to permanent ponds could also eliminate this species. Additional threats facing *P. nodosum* include siltation of its stream habitat from construction and mining activities upsteam, habitat loss resulting from bank stabilization and landowner access to waterfront, and water quality degradation from excessive nutrient loading of streams.

Because harperella generally occurs in areas with a high potential for human use, these threats have already impacted *P. nodosum* at various locations throughout its range. In Alabama, one of the three known historic sites for the species is under a reservoir and another has been eliminated by excessive siltation and water quality degradation (R. Kral, pers. comm; pers. obs.). Numerous coastal plain ponds in South Carolina and Georgia, including the type locality, have been drained or otherwise severely disturbed. In West Virginia, ten thousand plants were destroyed in 1984 by construction at a housing subdivision. Throughout its range, over 50 percent of the known harperella populations have been destroyed.

State heritage programs and interested individuals have conducted intensive searches for *P. nodosum*. In West Virginia, over 260 miles of stream habitat, comprising nearly all the suitable habitats in the State, have been checked (R. Bartgis, West Virginia Natural Heritage Program, pers. comm., 1987); In Maryland also, surveys have been made of nearly all known suitable habitats for the species (D. Boone, Maryland Heritage Project pers. comm. 1987), and in South Carolina, a total of 360 coastal plain ponds have been examined in an effort to locate this plant (D. Rayner, South Carolina Heritage Trust, pers. comm., 1987). In Georgia extensive searches have been made of both granite outcrops and coastal plain ponds (T. Patrick, Georgia Natural Heritage Inventory; R. Carter, Valdosta State College, pers. comms. 1987). Georgia and Alabama sections of the Little River have also been checked (D. Whetstone, Jacksonville State University pers. comm. 1987). Despite these searches, *Ptilimnium nodosum* is presently known from only ten populations rangewide. These include six stream populations, in Alabama (Dekalb Co.), Maryland (Allegany Co.), North Carolina (one each in Granville and Chatham Cos.) and West Virginia (two Morgan Co.) and four pond populations, in Georgia (one known extant, in Greene Co.) and South Carolina (three viable populations in Aiken and Saluda Cos. The species may be present in small numbers at two additional sites in South Carolina, but its presence has not been confirmed recently and these are not considered to have long-term viability). Stream populations typically consist of tens of thousands of individuals patchily distributed along short stream sections. Location of these patches and number of individuals may change from year to year. Pond populations are more spatially predictable and typically number in the hundreds. However, numbers of individuals in these populations too may fluctuate considerably from year to year.

Federal government actions on this species began as a result of section 12 of the Endangered Species Act of 1973, which directed the Secretary of the Smithsonian Institution to prepare a report on those plants considered to be endangered, threatened, or extinct. This report (House Document No. 94–51) was presented to Congress on January 9, 1975.

The Service published a notice in the July 1, 1975, **Federal Register** (40 FR 27823), of its acceptance of the report of the Smithsonian Institution as a petition within the context of section 4(c)(2) (petition provisions are now found in section 4(b)(3)) of the Act and its intention thereby to review the status of the plant taxa named therein. On June 16, 1976, the Service published a proposal in the **Federal Register** (41 FR 24523), to determine approximately 1700 vascular plant taxa to be endangered species pursuant to section 4 of the Act. *Ptilimnium nodosum* and *P. fluviatile*) were included in the July 1, 1975, and June 1976 **Federal Register** documents. General comments received in relation to the 1976 proposal were summarized in an April 26, 1978, **Federal Register** publication (43 FR 17909). The Endangered Species Act Amendments of 1978 required that all proposals over 2 years old be withdrawn. A 1-year grace period was given to proposals already over 2 years old. In the December 10, 1979, **Federal Register** (44 FR 70796), the Service published a notice of withdrawal of the June 6, 1976, proposal, along with four other proposals that had expired.

On December 15, 1980, the Service published in the **Federal Register** a revised Notice of Review for Native Plants (45 FR 82480). *P. nodosum* and *P. fluviatile* were included in that notice as Category 2 species. Category 2 includes those taxa for which listing as endangered or threatened species may be warranted but for which substantial data on biological vulnerability and threats is not currently known or on file to support proposed rules. On November 28, 1983, the Service published in the **Federal Register** a supplement to the Notice of Review for Native Plants (48 FR 53640); the plant notice was again revised September 27, 1985 (50 FR 39526). *Ptilimnium nodosum* and *P. fluviatile* were included in both of these revisions as Category 2 species. As stated above, the Service now considers these to be a single species, *Ptilimnium nodosum*.

In 1985 the Service contracted with The Nature Conservancy's Eastern Regional Office to conduct status survey work on *Ptilimnium nodosum* (including *P. fluviatile*) and several other Federal candidate species. Their report (Rawinski and Cassin 1986) and other information indicate that. *P. nodosum* and *P. fluviatile* are appropriately considered a single taxon, that the number of extant sites for *P. nodosum* has declined significantly, and that there is a high degree of threat to remaining populations.

Section 4(b)(3)(B) of the Endangered Species Act, as amended in 1982, requires the Secretary to make certain findings on 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 *Ptilimnium nodosum*, because the 1975 Smithsonian report had been accepted as a petition. On October 13, 1983; October 12, 1984; October 11, 1985; October 10, 1986; and October 11, 1987, the Service found that the petitioned listing of *Ptilimnium nodosum* 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 February 25, 1988, the Service published in the **Federal Register** a proposal to list *Ptilimnium nodosum* as an endanger species (53 FR 5736). That proposal constituted the final finding required by the Endangered Species Act.

**Summary of Comments and Recommendations**

In the February 25, 1988, proposed rule, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. Copies of the February 25, 1988, proposed rule were sent to appropriate Federal and State agencies, county officials, scientific organizations and other interested parties, with a request to provide factual information that might

contribute to the development of a final rule. Newspaper notices inviting comment from the general public were published in the *Aiken Standard* (Aiken, South Carolina), *Atlanta Constitution* (Atlanta, Georgia), *Durham Herald* (Durham, North Carolina), *Fort Payne Times-Journal* (Ft. Payne, Alabama), *Hagerstown Herald* (Hagerstown, Maryland), and *Martinsburg Evening Journal* (Martinsburg, West Virginia). As a result of these notifications, eight comments were received. Four of these comments were from state agencies, two were from private sector conservation groups and two from private individuals.

The conservation groups, namely, The Nature Conservancy and the Maryland Enviromental Trust, wrote in full support of the listing action and indicated their willingness to assist with further conservation efforts for harperella. The West Virginia, Maryland, and North Carolina Departments of Natural Resources also indicated that they fully support this listing. Two of these letters pointed out additional potential threats to harperella, as follows.

Preliminary planning has begun for the development of an industrial plant upstream of the harperella population on the Deep River in North Carolina. This project could alter the hydrology of the river. Secondly, in West Virginia, the Department of Commerce is considering proposals to construct a ski resort development at Cacapon State Park, which might require the diversion of water from the Cacapon River for winter snowmaking and summer irrigation of the Park's golf course. This also has the potential for altering the hydrology of the river, thereby potentially impacting harperella. The two letters from private citizens were related to this project in West Virginia. Both expressed opposition to the listing on the basis that this action would interfere with the development of the state park facilities, thus adversely impacting economic growth and orderly development of this area of Morgan County. Section 4 of the Endangered Species Act as amended (Act) and regulations set forth to interpret and implement this section, require that listing determinations be made *solely* on the basis of the best available information regarding a species' status, without reference to economic or other impacts of such a determination. The information presently available on these projects is not sufficient to assess impacts to harperella at this time. If there is Federal involvement with these projects, it is likely that they will require consultation, as specified in section 7 of the Act. These projects might require modifications to accommodate the needs of harperella; however, it has been the experience of the Service that nearly all section 7 consultations are resolved so that the species is protected and the project objectives are met.

**Summary of Factors Affecting the Species**

After a thorough review and consideration of all information available, the Service has determined that harperella should be classified as an endangered species. Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1513 *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 *Ptilimnium nodosum* (Rose) Mathias (harperella) are as follows:

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

The effects of human activities upon the habitat types in which *Ptilimnium nodosum* occurs have resulted in the permanent elimination of the plant and its habitat in many locations throughout its range. In Alabama, siltation, eutrophication and an impoundment have eliminated the plant from two of its three known historic localities. In Georgia and South Carolina, at least four *Ptilimnium nodosum* populations were obliterated when the ponds they inhabited were drained and converted to agriculture or otherwise severly disturbed. Of the five populations known to remain in South Carolina, two have been so severely disturbed that they are no longer considered viable (D. Rayner, pers. comm.). In West Virginia, an estimated ten thousand harperella plants were recently destroyed during construction of a vacation home subdivision (Rawinski and Cassin 1986). Approximately 90 percent of the plants remaining at this site are now restricted to a 300-foot section of stream, where they are vulnerable to trampling and/or streamside alterations.

Other cases of habitat disruption may be less obvious yet no less detrimental to the plants. Harperella populations occurring at Harper's Ferry, West Virginia in the 1830's and at Hancock, Maryland, in the early 1900's have been eliminated, probably by industrial development and the operation of riverside canals and railroads. Water quality degradation may also be threatening certain stream populations of harperella. The stretch of the Little River in which it occurs in Alabama may be receiving both excessive nutrient loading from insufficient sewage treatment and acid runoff from unreclaimed surface mines. This population is also threatened by the existence upstream of two unstable impoundments that could break and eliminate or degrade remaining harperella habitat in Alabama (D. Whetstone, pers. comm). Maryland's one known harperella population was threatened by siltation and runoff associated with the construction of a highway nearby. Although corrective measures have been taken, it is not certain that the threat to this site has been totally eliminated. Additional potential threats that have come to light include the development of an industrial plant upstream of the harperella population on the Deep River In North Carolina and the proposed water withdrawal from the Cacapon River associated with the developments at Cacapon State Park in West Virginia.

The estimated loss of 50 percent of known populations of *Ptilimnium nodosum* may actually be conservative; the species was known historically from a few traditional "good" collecting spots, but since it occupies habitat types that have been so extensively altered by human activities, it is likely that other populations were destroyed without being discovered.

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

Harperella has not been a target for collection, since it is not a showy plant and would not survive under normal garden conditions. Although the plant has been collected for scientific study, this does not constitute a threat for the species.

*C. Disease or Predation*

In its pond habitat, *P. nodosum* may occasionally be subject to grazing or trampling, where it occurs along the margins of ponds that have been altered for use by livestock. However, the disruption of its habitat, rather than any occasional grazing, poses the more severe threat. Disease is not known to be a problem for this species.

*D. The Inadequacy of Existing Regulatory Mechanisms*

*Ptilimnium nodosum* is not known to occur on Federal land and presently receives no protection under any Federal law. The species' habitat receives limited protection under section 404 of the Federal Water Pollution

Control Act; however, section 404 does not assure that the habitat of an unlisted species will not be adversely modified. Some populations do occur on State-owned land, in streams over which States have jurisdiction, or on preserves owned by The Nature Conservancy. In North Carolina and Maryland, the plant is protected from trade and unauthorized take. However, except in Maryland, where it receives limited protection, it is not protected from habitat loss, the primary threat to its survival. The Nature Conservancy and State Natural Heritage Programs, particularly in West Virginia and South Carolina, have been actively pursuing both easements and voluntary protection agreements with landowners. The agreements, while potentially very useful in protecting the plants, have no legal authority.

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

In West Virginia, the exotic grass *Arthraxon hispidus* is seen as a potential competitor to *P. nodosum*. Over the past decade, this aggressive Asian introduction has become widespread in many parts of the State. As an annual, it can compete directly with harperella for occupation of ephemeral habitats; without control, *A. hispidus* could overrun and locally extirpate harperella.

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 *Ptilimnium nodosum* as endangered. At least eight populations are known to have been destroyed, and over half of the remaining known populations, together constituting over 95 percent of the known individuals, are faced with continuing habitat degradation. Although stream populations may be large in terms of number of individuals, destruction or degradation of their habitat would be equally effective at extirpating them regardless of their number.

**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 *Ptilimnium nodosum*. In its pond habitats, if its location were specifically delineated, as though the publication of critical habitat maps, it could be easily extirpated by vandals or curiosity seekers. Because it does not occur on Federal land, such taking would not be prohibited by the Endangered Species Act. In stream situations also, these plants would be vulnerable to vandalism if the stream sections in which they occur were specifically located. The State agencies and landowners involved in managing the habitat of this species have been informed of the plant's general locations and of the importance of protection. Therefore, the determination of critical habitat would not be prudent, and no additional benefit would result from it.

**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 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. 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.

At present, the Service has not identified any ongoing projects with Federal involvement known to have potential impacts to *P. nodosum*. The Maryland population is being monitored by Maryland Natural Heritage Program biologists to ensure the effectiveness of erosion control measures associated with the construction of Route 48 in Western Maryland. The biology and dynamics of this population are also being studied. Other federally funded or permitted actions which could affect this plant include, but are not limited to, SCS watershed management activities, FERC-permitted hydroelectric projects, construction projects involving Federal Highway Administration or Farmers Home Administration funds, or those within the jurisdiction of the Corps of Engineers.

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, would 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. Certain exceptions can 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. In the case of *Ptilimnium nodosum*, it is anticipated that few trade permits would ever be sought or issued since the species is not common in cultivation or in the wild. Requests for copies of the regulations on plants and inquiries regarding them may be addressed to the Office of Management Authority, U.S. Fish and Wildlife Service, P.O. Box 27329, Washington, DC 20036 (202/343-4955).

**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**

Easterly, N.W. 1957. A morphological study of *Ptilimnium*. Brittonia 9:136-145.

Kral, R. 1981. Notes on some quill-leaved umbellifers. Sida 9:124-134.

Kral, R. 1983. A report on some rare, threatened or endangered forest-related vascular plants of the South. Tech. Publ. R8-TP-2. USDA—Forest Service, paper 258.

Mathias, M.E. 1936. Studies in the Umbelliferae V. Brittonia 2:239–245.
Rawinski, T. and J. Cassin. 1986. Final Status survey for 32 plants. TNC Unpbl. Rept. submitted to U.S.FWS, Newton Corner, Massachusetts.
Rose, J.N. 1905. Two new umbelliferous plants from the coastal plain of Georgia. Proc. Nat. Acad. Sci. 29:441–3.
Rose, J.N. 1911. Two new species of *Harperella*. Contr. U.S. Nat. Herb. 13:289–90.

## Author

The primary author of this final rule is Judy Jacobs, Annapolis Field Office, U.S. Fish and Wildlife Service, 1825 Virginia Street, Annapolis, Maryland 21401 (301/269–5448).

## List of Subjects in 50 CFR Part 17

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

## 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:** 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. Amend § 17.12(h) by adding the following, in alphabetical order under the Family Apiaceae, 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 | | | | | |
| Apiaceae—Parsley Family: | | | | | | |
| * | * | * | * | * | * | |
| *Ptilimnium nodosum* (= *P. fluviatile*). | Harperella | U.S.A. (AL, GA, MD, NC, SC, WV)... | E | 332 | NA | NA |
| * | * | * | * | * | * | |

Dated: September 2, 1988.

**Susan Recce,**

*Acting Assistant Secretary for Fish and Wildlife and Parks.*

[FR Doc. 88–22151 Filed 9–27–88; 8:45 am]

BILLING CODE 4310–55–M