DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AB36

Endangered and Threatened Wildlife and Plants; Threatened Status for Sagittaria secundifolia (Kral's water-plantain)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The Service determines an aquatic plant, *Sagittaria secundifolia* (Kral's water-plantain), to be a threatened species under the authority contained in the Endangered Species Act (Act) of 1973, as amended. This species is currently known only from a single population in the Little River system in northeast Alabama (DeKalb and Cherokee Counties) and northwest Georgia (Chattooga County). A historical population from Town Creek (DeKalb County, Alabama) has not been located and is believed destroyed. This species is extremely vulnerable due to its restricted range and the clearing of the river banks for silvicultural, residential, agricultural or mining purposes. This action will extend the Act's protection to *Sagittaria secundifolia*.

EFFECTIVE DATE: May 14, 1990.

ADDRESSES: The complete file for this rule is available for inspection, by appointment, during normal business hours at the Jackson, Mississippi, Field Office, U.S. Fish and Wildlife Service, Jackson Mall Office Center, 300 Woodrow Wilson Avenue, Suite 316, Jackson, Mississippi 39213.

FOR FURTHER INFORMATION CONTACT: Cary Norquist, at the above address (601/965-4900 or FTS 490-4900).

SUPPLEMENTARY INFORMATION:

Background

Kral (1982) described *Sagittaria secundifolia* from material collected by Cusick in 1972 from the Little River in Alabama. However, during his studies, Kral discovered earlier collections made in 1899 by the Biltmore Herbarium collectors from Little River and from Town Creek on Sand Mountain by Harper in 1951 (Kral 1982, Whetstone 1988). The Town Creek population in DeKalb County, Alabama has not been relocated despite extensive searches and is believed destroyed (Kral 1982, 1983; Whetstone 1988). Currently, *Sagittaria secundifolia* is only known to occur in the Little River drainage system on Lookout Mountain. This species is primarily located in the upper free-flowing reaches of the Little River in Cherokee and DeKalb Counties, Alabama. It has been collected from a single site in the East Fork of the Little River in Chattooga County, Georgia (Whetstone 1988, Whetstone et al. 1988). On rate occasions, individuals have been located near the mouth of tributaries (Whetstone 1988). Extensive surveys of other river systems with suitable habitat in northeast Alabama and northwest Georgia have been unsuccessful at locating additional populations (Whetstone 1988).

This species is a member of the water-plantain family (Alismataceae) and is in the "graminea" complex of *Sagittaria*. Distinguishing characters include a stout, elongated rhizome, hairy filaments, linear leaves and spreading or reflexed sepals (Kral 1982, Whetstone 1988).

Sagittaria secundifolia is a submersed to emersed aquatic perennial arising from a stiff elongated rhizome up to 10 centimeters (cm) (4 inches) in length. The leaves are of two types, depending upon the velocity and depth of the water it inhabits. In swift shallows, the leaves are linear, rigid and sickle-shaped, 5–8 cm (2–3 inches) long and 2–5 millimeters (mm) (0.08–0.20 inches) wide. In quiet, deep waters, the leaves are more quill-like, being longer (10–30 cm) (4–12 inches), linear in shape and tapering. Separate male and female flowers are produced on a stalk, 10–50 cm (4–20 inches) long. The petals are inconspicuous in the female flowers; however, in the male flowers, they are white and 1.0–1.5 cm (0.4–0.6 inches) long. The fruit consists of a cluster of achenes approximately 2 mm (0.08 inch) in length. Although infrequent, flowering occurs from May into July and intermittently into the fall (Kral 1982, 1983).

This taxon typically occurs on frequently exposed shoals or rooted among loose boulders in quiet pools up to 1 meter (3 feet) in depth. Plants are locally distributed, where suitable habitat exists, and grow in pure stands or in association with various submergents including *Potamogeton*, *Najas*, and *Myriophyllum* and emergents such as *Justicia americana*, *Lindernia*, and *Polygonum*. The immediate banks are often dominated by a thicket of shrubs including *Alnus*, *Rhododendron*, *Kalmia*, *Lyonia*, and *Ilex*. Sphagnous seeps are frequent with *Carex*, *Rhynchospora*, *Eriocaulon*, *Panicum*, *Xyris*, and *Rhexia* among the common genera present. The stream bottoms are typically narrow and bounded by steep slopes (Kral 1982, Whetstone 1988). Two endangered plants, *Sarracenia oreophilia* and *Ptilimnion nodosum*, and several candidate plants (*Cuscuta harperi*, *Coreopsis pulchra*, *Allium speculae*) occur in associated habitats at several sites.

Approximately 40 percent of the habitat in Little River is owned by the Alabama Power Company, and 20 percent by the Alabama Department of Conservation and Natural Resources (DeSoto State Park). The remainder is in private ownership.

On September 27, 1985, the Service published a revised Notice of Review for plants in the **Federal Register** (50 FR 39526), which included *Sagittaria secundifolia* as a category 2 species. Category 2 comprises those taxa for which listing as endangered or threatened may be appropriate but existing information is insufficient to support a proposed rule. In 1986, the Service contracted a status survey to assess its rarity and evaluate threats to this species and its habitat. This report (Whetstone 1988) and other information supported its proposed listing. On October 18, 1989, the Service published in the **Federal Register** (54 FR 42816), a proposal to list *Sagittaria secundifolia* as a threatened species.

Summary of Comments and Recommendations

In the October 18, 1989, 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 Times-Journal", Fort Payne, Alabama, on November 4, 1989, and the "Walker County Messenger", Lafayette, Georgia, on November 3, 1989.

Six comments were received, four from private sources and two from State agencies. Five were supportive; however, one of these commenters recommended this *Sagittaria* be listed as endangered rather than threatened. The Service's rationale for threatened status is addressed in the following section, "Summary of Factors Affecting the Species" (see last paragraph in that section).

Opposition to the listing was expressed by one private company (Georgia Farm Bureau Federation) who addressed the following concerns/issues: listing may interfere with agricultural and silvicultural practices of private individuals; the species may be more abundant; the species could be protected by means other than listing; and critical habitat should be determined. The Service must consider biological impacts only, not economic, in determining to propose a species for listing. Furthermore, the Service does not foresee this listing as significantly impacting the agricultural/silvicultural practices of private individuals (see "Available Conservation Measures"). The Service will seek the voluntary cooperation of private landowners to protect this species where such activities appear to be impacting plants. The Service contracted for a survey on this species to assess its rarity and no additional populations were located despite an extensive search of suitable habitat. *Sagittaria secundifolia* receives no protection under any State laws or regulations (see "factor D" in the following section). Critical habitat is not being designated for reasons discussed under the "Critical Habitat" section of this rule.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that *Sagittaria secundifolia* should be classified as a threatened species. Procedures found at section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act were followed. A species may be determined to be endangered or threatened due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Sagittaria secundifolia* Kral (Kral's water-plantain) are as follows:

A. *The present or threatened destruction, modification or curtailment of its habitat or range. Sagittaria secundifolia* is only known from the Little River drainage system in northeast Alabama and northwest Georgia. A major threat to this species is the elimination or adverse modification of its already limited habitat. Clearing of the adjacent river banks for silvicultural, residential-recreational development, surface mining or agricultural purposes poses a significant threat for this species. These activities contribute to water quality degradation and increase stream turbidity and siltation from erosion (Kral 1983, Whetstone 1988). Similar impacts likely caused the loss of the population and much of the suitable habitat in the Town Creek watershed (Kral 1982, 1983). The Little River population may be adversely affected by eutrophication from garbage dumping and leaking sewage systems. Large quantities of human coliform bacteria were present in water samples taken at several sites along the Little River (Whetstone 1988). This eutrophication increases the presence of filamentous algae, which clings to individuals of *Sagittaria secundifolia*. Extreme water turbidity and dense filamentous algae decrease the amount of light available to the plants for growth and flowering.

A small number of sites are used as fords and are often a center for recreational activity, subjecting them to damage by off-road vehicle traffic.

Impoundments exist over large areas of presumed suitable habitat on the Little River and may have destroyed undocumented populations. Four large impoundments exist along a five mile stretch of the West Fork of the Little River and two are present below the Georgia locality on the East Fork. The impoundment of Lake Weiss in Cherokee County, Alabama, in the 1960s flooded suitable habitat along Yellow Creek and several miles of the Little River. In the past, dams along two creeks, which flow into the Little River, have broken and flooded portions of suitable habitat. Cracks and leaks have been observed on the dam above DeSoto Falls and a portion of a dam near the Georgia population has deteriorated (Whetstone 1988). Several existing populations are threatened by unstable impoundments that could break and eliminate or degrade populations and suitable habitat by scouring the bottom and uprooting individual plants.

Approximately 33 percent of the habitat and associated local populations would be destroyed if a proposed hydroelectric impoundment is constructed on the Little River. In addition to flooding several local populations and changing stream flow dynamics, associated construction would cause excessive siltation and further degrade water quality (Whetstone 1988). However, the Little River site is presently viewed as the least desirable site for this impoundment from an economic and environmental standpoint (John Grogan, Alabama Power Company, personal communication 1989).

B. *Over-utilization for commercial, recreational, scientific or educational purposes.* This species is not known to be a component of commercial trade; however, collection or vandalism could reduce populations in the more accessible sites.

C. *Disease or predation.* Disease and predation are not known to be factors affecting the continued existence of this species.

D. *The inadequacy of existing regulatory mechanisms. Sagittaria secundifolia* is informally listed as endangered in Alabama (Freeman 1984) and Georgia (T. Patrick, Georgia Heritage Program, personal communication, 1989). However, this designation does not afford this species any legal status or protection. Plants located within the confines of the DeSoto State Park in Alabama are protected from collecting and adverse land use practices on the river banks. However, this provides protection for only 20 percent of the Little River population and the remaining sites are unprotected. The Act would strengthen existing protection, provide additional protection, and encourage active management for *Sagittaria secundifolia*.

E. *Other natural or manmade factors affecting its continued existence.* This species' occurrence in a single stream system makes it extremely vulnerable to any catastrophic event. Flooding is frequent and intense in certain areas, particularly those portions of the river within high canyon walls (Whetstone 1988). When such occurs, the water scours the bottom, uprooting the shallow-rooted *Sagittaria*. While a certain amount of flooding is natural, its detrimental effect is intensified due to the continuing loss of suitable habitat.

This species is clonal and reproduction is primarily asexual, which suggests there may be low genetic variability within this single existing population. Flowering was observed in only 1 percent of this *Sagittaria* and only in areas of direct sunlight and at a water level that allowed emergent leaves (Whetstone 1988). Many of the sites supporting local populations are in less than these optimum conditions for flowering; therefore, it is important to maintain as much suitable habitat as possible to encourage reproduction by sexual means. Sexual reproduction increases genetic variability which enables species to adapt to changing conditions. Eight of the 12 local populations studied by Whetstone (1988) occur in pools and/or in riverine areas with partial canopy coverage. Here, the number of plants ranged from 5 to 40 individuals. The remaining 4 local populations on the shallow shoals supported 75 to several hundred plants.

Algal blooms are common in the summer due to eutrophication in the Little River (see factor A). *Sagittaria secundifolia* was observed to be completely covered with a filamentous algae at times, and this may have an adverse affect on this species' vigor (Whetstone 1988).

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 *Sagittaria secundifolia* as a threatened species. This species is not in imminent danger of extinction since a dozen or more local populations are scattered over approximately 25 river miles. However, this species is extremely vulnerable due to its occurrence in a single river system and is likely to become endangered in the foreseeable future if protective measures are not taken. Critical habitat is not being designated for reasons discussed in the following section.

Critical Habitat

Section 4(a)(3) of the Act requires, to the maximum extent prudent and determinable, that the Secretary designate critical habitat at the time a species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not presently prudent for this species. Publication of critical habitat maps will increase public interest and possibly lead to additional threats for this species from collecting and vandalism, particularly at the many accessible sites along the river (see factor B in the "Summary of Factors Affecting the Species"). Taking is an activity difficult to control and 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. Such provisions are difficult to enforce and no benefit can be identified through critical habitat designation that would outweigh the potential threats of collecting and vandalism. All State agencies and Alabama Power Company have been notified of the general location and importance of protecting this species' habitat. Protection of this species' habitat will be addressed through the recovery process and through the section 7 jeopardy standard. Therefore, it would not be prudent to determine critical habitat for *Sagittaria secundifolia*.

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)(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.

All known populations are under State or private ownership. A hydroelectric impoundment has been proposed for a site on the Little River where plants are known to occur. This would require a license from the Federal Energy Regulatory Commission. The Environmental Protection Agency would consider this species relative to pesticide use.

The Act and its implementing regulations found at 50 CFR 17.71 and 17.72 set forth a series of general trade prohibitions and exceptions that apply to all threatened plants. All trade prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.71, 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. Seeds from cultivated specimens of threatened plant species are exempt from these prohibitions provided that a statement of "cultivated origin" appears on their containers. Certain exceptions apply to agents of the Service and State conservation agencies. The Act and 50 CFR 17.72 also provide for the issuance of permits to carry out otherwise prohibited activities involving threatened species under certain circumstances.

It is anticipated that few trade permits would ever be sought or issued because 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 3507, Arlington, VA 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).

References Cited

Freeman, J.D. 1984. Vascular plant species critical to maintenance of floristic diversity in Alabama. Unpub. report. 23 pp.

Kral, R. 1982. A new phyllodial-leaved *Sagittaria* (Alismaceae) from Alabama. Brittonia 34:12–17.

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. 1305 pp.

Whetstone, R.D. 1988. Status survey of *Sagittaria secundifolia*. Provided under contract to the U.S. Fish and Wildlife Service, Southeast Region, Atlanta, Georgia. 28 pp. + attachments.

Whetstone, R.D., C.L. Lawler, L.H. Hopkins, A.L. Martin, and C.C. Dickson. 1988. Kral's water-plantain, *Sagittaria secundifolia* Kral (Alismataceae), new to Georgia. Castanea 52:313–314.

Author

The primary author of this rule is Cary Norquist (see **ADDRESSES** section).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, 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: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1543; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500, unless otherwise noted.

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

§ 17.12 Endangered and threatened plants.

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Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
•	•	•	•	•	•	
Alismataceae—Water-plantain family:						
•	•	•	•	•	•	
Sagittaria secundifolia	Kral's water-plantain	U.S.A. (AL, GA)	T	386	NA	NA

Dated: April 3, 1990.

Richard N. Smith,

Acting Director, Fish and Wildlife Service.

[FR Doc. 90-8678 Filed 4-12-90; 8:45 am]

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