

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Proposal To List the Waccamaw Silverside As a Threatened Species and Designate Its Critical Habitat

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The Service proposes to list a fish—the Waccamaw silverside (*Menidia extensa*)—as a threatened species and designate its critical habitat under provisions of the Endangered Species Act of 1973, as amended. The species is known only from Lake Waccamaw and the upper Waccamaw River in Columbus County, North Carolina. Recently completed research indicates nutrient loading has increased in Lake Waccamaw. If this trend continues, habitat changes in the lake could jeopardize the survival of this species. Due to the species' limited distribution, its survival could also be threatened by any other factors that degrade water or habitat quality. Comments and information pertaining to this proposal are sought from the public.

DATES: Comments from all interested parties must be received by January 6, 1986. Public hearing requests must be received by December 23, 1985.

ADDRESSES: Comments and materials concerning this proposal should be sent to the Field Supervisor, Endangered Species Field Station, 100 Otis Street, Room 224, Asheville, North Carolina 28801. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Nora Murdock at the above address (704/259-0321 or FTS 8/672-0321).

SUPPLEMENTARY INFORMATION:

Background

The Waccamaw silverside (*Menidia extensa*) is known only from Lake Waccamaw and the upper Waccamaw River in Columbus County, North Carolina. It was described by Hubbs and Raney (1946). This fish, also known as a "skipjack" or "glass minnow," inhabits open water throughout Lake Waccamaw, where schools are commonly found near the surface over shallow, dark-bottomed areas (Lee *et al.*, 1980). The silverside has not been taken outside the lake, with the exception of the Waccamaw River

immediately below the Lake Waccamaw dam during periods of very high water (Lindquist and Yarbrough, 1982).

The Waccamaw silverside is a long, slim, almost transparent fish with a silvery stripe along each side. Its body is laterally compressed, the eyes are large, and the jaw is sharply angled upward. Adults of the species, approximately 6.5 centimeters (2.5 inches) in length, feed on zooplankton (Lindquist and Yarbrough, 1982). They are sexually mature at one year of age and spawn from April through June. Most silversides die shortly after spawning, but a few may survive a second winter. Since this fish is a shortlived species, it is subject to sudden extirpation should its habitat deteriorate to the point where reproduction fails (Lindquist and Yarbrough, 1982). The silverside, although limited in distribution, is an important prey species for larger fishes in Lake Waccamaw (Lindquist and Yarbrough, 1982).

Lake Waccamaw, the principal habitat of the species, is considered unique. It is a registered North Carolina Natural Heritage Area and has been proposed as a National Natural Landmark. The lake and its drainage have a diverse fish fauna (56 species), including many popular game fish (Shute *et al.*, 1981). Tuelings and Cooper (1977) listed 17 species of plants and animals from in and around Lake Waccamaw, which were considered of special concern by biologists. Bailey (1977) commented that Lake Waccamaw " . . . apparently served as a minor center of evolutionary differentiation [for fish], and a refuge for earlier forms." Fuller (1977) stated that "The Waccamaw basin in southeastern North Carolina and northeastern South Carolina supports more unique non-marine mollusks than any other locale in the state [North Carolina]."

Lake Waccamaw occupies approximately 3,618 hectares (8,934 acres) and has an average depth of only 2.3 meters (7.5 feet) (Shute *et al.*, 1981). Although it is fed by acidic swamp streams, the lake has a virtually neutral pH (Davis and Louder, 1969; Porter, 1985). Dr. Charles Yarbrough (personal communication, July 26, 1984) characterized Lake Waccamaw as "an island of neutrality in an acid sea." This neutral condition, unusual among North Carolina's coastal plain lakes, is believed to be caused by the buffering effect of the calcareous Waccamaw Limestone formation, which underlies the lake and is exposed on the north shore (Frey, 1951).

Studies of Lake Waccamaw and its fish and mussel fauna, funded through the North Carolina Wildlife Resources

Commission, were conducted from 1979 through 1981 (Lindquist and Yarbrough, 1982; Porter, 1985). Those studies and other research (Lindquist, 1981; Casterlin *et al.*, unpublished manuscript), indicate the lake is experiencing increases in nutrient loading. If this trend continues, the overall water quality will deteriorate, and the lake's ecosystem will be adversely altered. These changes will threaten Lake Waccamaw's fauna, including the silverside. In the proceedings of the 1975 Symposium on Endangered and Threatened Biota of North Carolina (Cooper, 1977), the silverside is categorized as "endangered."

The Waccamaw silverside was included in a March 18, 1975, Notice of Review published in the *Federal Register* (40 FR 12297). In the *Federal Register* of December 30, 1977 (42 FR 65209) the Service proposed endangered status and critical habitat for this species. On March 30, 1978, the time period for receiving comments on the proposal was extended 90 days. Considerable opposition was expressed with regard to the proposal.

The North Carolina Wildlife Resources Commission and the Governor of the State recommended that the proposal be postponed pending further studies of the lake and its fauna. The 1978 amendments to the Endangered Species Act required that proposals for listing species be withdrawn if the listing was not made final within two years of the proposal; accordingly, the proposal to list this species was withdrawn on January 24, 1980 (45 FR 5782).

On December 30, 1982, the Service announced in the *Federal Register* (47 FR 58454) that this fish, along with 147 other fishes, was being considered for possible addition to the List of Endangered and Threatened Wildlife. On June 22, 1984, the Service announced that a status review was being conducted on this species, as well as a second species of fish, the Waccamaw killifish (*Fundulus waccamensis*), and a mussel, the Waccamaw spike (*Elliptio waccamawensis*). By letter and through personal contacts, the Service solicited data on the status and location of the species and their habitat, current and planned activities that might adversely affect the species or their habitat, and possible impacts to Federal activities if critical habitat were designated.

A total of 23 replies were received by the Service in response to the status review. Two respondents opposed the listing of the species and indicated that they did not think these species were

endangered or threatened. Two other respondents, while not opposing the listing, pointed out potentials for conflict with planned or ongoing activities. These potential conflicts included highway construction in the vicinity of the lake and aquatic weed control programs administered by the U.S. Army Corps of Engineers. Twelve respondents indicated that they had no problem with the listing of these species and their critical habitat. Seven respondents supported the listing. Among those supporting the listing were the North Carolina Department of Natural Resources and Community Development (NCDNRCD), Conservation Council of North Carolina, North American Native Fishes Association, Southeastern Natural Resources Center, and the National Wildlife Federation.

During the status review process, information was obtained on the Waccamaw killifish and the Waccamaw spike, which must be further evaluated before a decision can be made on proposing these species for listing. Therefore, the Service, after receiving sufficient new information through the 1984 status review is presently proposing to list only the Waccamaw silverside as a threatened species.

Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations promulgated to implement the listing provisions of the Act (50 CFR Part 424) set forth the procedures for adding species to the Federal lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to the Waccamaw silverside (*Menidia extensa*) are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* The water quality of Lake Waccamaw is a major concern. Nutrient loading in Lake Waccamaw has increased since 1973 (National Technical Information Service, 1973; Lindquist and Yarbrough, 1982). This trend, as well as the sensitive, unusual nature of this shallow lake, has led some researchers to state that "... a clear danger of eutrophication exists and any increase in nutrient loading could tip the uneasy balance" (Lindquist and Yarbrough, 1982; Casterlin *et al.*, unpublished manuscript). Algal pollution indices indicate that any significant increase in nutrient levels entering the lake could precipitate water quality conditions that would threaten the

species (Casterlin *et al.*, unpublished manuscript). The lake's environmental quality and its fauna could also be threatened by habitat alteration resulting from development and land use in Lake Waccamaw and its watershed (especially Big Creek) if these activities are not planned and implemented with the protection of the Lake Waccamaw ecosystem in mind. The short life cycle of the fish (1 to 2 years) and its dependence on the unique habitat conditions present in Lake Waccamaw make it extremely vulnerable to any change in its environment.

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* There is no evidence that overutilization is or will be a problem for this species. The silverside population numbers in the millions. In addition, the one- to two-year life cycle of the fish results in a virtually complete turnover of the population every year. Therefore, the taking of individuals for bait and for scientific purposes is not a threat to this species.

C. *Disease or predation.* Currently, there is no evidence of threats to these species from disease or predation. Although the silverside is one of the principal forage species for Lake Waccamaw's game fish, the high population levels of the silverside and the presence of other prey species in large numbers are sufficient to sustain this predation pressure without the species being threatened.

A recent application by the Waccamaw Siouan Development Association for a permit to propagate hybrid bass at several sites in the Lake Waccamaw watershed was denied by the North Carolina Wildlife Resources Commission, but is undergoing further review. Escape of non-native predators from such a project into the system could upset the existing predator-prey relationships in the lake to the detriment of the Waccamaw silverside and other fishes now present in the lake.

D. *The inadequacy of existing regulatory mechanisms.* Lake Waccamaw is the property of the State of North Carolina. The North Carolina Department of Natural Resources and Community Development and the Division of Parks administers the lake by authority of North Carolina General Statute, Chapter 113, Section 35, Subchapter 12C of the State Lakes Regulations. Through the above statute and implementing regulations, the North Carolina Parks Department reviews and issues special use permits for scientific research, educational, and noncommercial activities on the lake. By the same authority, the Parks

Department regulates commercial activities, construction of piers, boat docks, drainage ditches, and similar activities on the lake. The North Carolina Wildlife Resources Commission, by authority given in North Carolina General Statute, Chapter 113, regulates the taking of the Waccamaw silverside and issues collection licenses for the taking of nongame species as provided in subchapter 272.4 and 292 of Chapter 113. Although these statutes provide protection to individual fish, they do not afford protection for the habitat upon which the species depend. Scientific of commercial collecting do not pose threats to the species that would require Federal regulation (see "Special Rules" section of this proposal). However, additional protection would be provided the species and its habitat by requiring Federal agencies to consult with the Service when projects they fund, authorize, or carry out may affect the species or its critical habitat.

E. *Other natural or manmade factors affecting its continued existence.* The Waccamaw silverside has a very short life cycle, usually dying shortly after spawning as a one-year-old. Therefore, if a year class of the silverside fails to reproduce in any one year, the species could be lost. The continued increase in nutrient loading could result in serious deterioration of water quality which, even on a short-term basis, could precipitate the extinction of this fish.

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 propose to list the Waccamaw silverside as a threatened species with special rules to allow take in certain instances permitted under State law. Present population levels of this species and environmental conditions in its habitat are good, and the species is not in any immediate danger of extinction. However, if present nutrient loading continues to increase and the lake's habitat and water quality deteriorate, the species could become extinct. As the species is not threatened with extinction in the foreseeable future, endangered status is not appropriate. See the "Critical Habitat" section of this proposal for a discussion of why critical habitat is being proposed.

Critical Habitat

Critical habitat, as defined by section 3 of the Act, means: (i) The specific areas within the geographical area occupied by a species, at the time it is

listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection, and (ii) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Section 4(a)(3) of the Act requires that critical habitat be designated to the maximum extent prudent and determinable concurrently with the determination that a species is endangered or threatened. Critical habitat is being proposed for the Waccamaw silverside to include Lake Waccamaw [approximately 3,618 hectares (8,934 acres)] and Big Creek from its mouth at the head of Lake Waccamaw upstream approximately 0.6 kilometers (0.4 mile) to where the creek is crossed by County Road 1947 in Columbus County, North Carolina (see "Regulations Promulgation" section of this proposal for a precise description of critical habitat). The good water quality of Big Creek and Lake Waccamaw is one of the most important factors in the continued survival of this species. The clean sand bottom of the lake is used by the fish during spawning.

Section 4(b)(8) requires, for any proposed or final regulation that designates critical habitat, a brief description and evaluation of those activities (public or private) which may adversely modify such habitat or may be affected by such designation. Activities that presently occur within the proposed critical habitat include, in part, fishing, swimming, water skiing, boating, scientific research, and nature study. These activities do not appear to be adversely impacting the habitat. Other activities that do or could occur in the watershed of Lake Waccamaw and could impact the proposed critical habitat include, in part, indiscriminate logging, land use changes, stream alterations, such as channelization or impoundment, bridge and road construction, improper pesticide/herbicide application, and point and nonpoint pollution discharges.

There are also activities with Federal involvement that do or could occur and that may be affected by designating critical habitat. These activities include, in part, construction and/or upgrading of waste treatment systems, stream alterations, bridge and road construction (including the proposed relocation of U.S. Highway 74 from west of Hallsboro to east of Bolton), filling of wetlands, discharges of municipal and industrial

wastes, and State park acquisition and development. Some of these activities could degrade the water and substrate quality of Lake Waccamaw by increasing siltation and/or nutrient loading, or by altering water temperature and pH, if they are conducted without consideration of the protection of Lake Waccamaw's environmental quality.

Private activities with no Federal involvement will not be affected by this critical habitat proposal, even if they result in the degradation or destruction of the designated critical habitat. However, if a Federal agency is involved in activities that may affect the critical habitat, section 7(a)(2) of the Act, as amended, requires that agency to consult with the Service to ensure that actions it authorizes, funds, or carries out are not likely to destroy or adversely modify critical habitat.

Section 4(b)(2) of the Act requires the Service to consider economic and other impacts of designating a particular area as critical habitat. The Service will consider the critical habitat designation in light of all additional relevant information obtained during the rulemaking process before issuing any final rule.

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. Such actions are initiated by the Service following listing. The protection required of Federal agencies and the prohibitions against taking and harm 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, and are now under revision (see proposal at 48 FR 29990; June 29, 1983). Section 7(a)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed

species or result in destruction or adverse modification of proposed critical habitat. If a species is 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. 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. The Service is presently aware of only one proposed Federal project (the relocation of U.S. Highway 74) that may affect the Waccamaw silverside and its proposed critical habitat. The Service has been in contact with the Federal Highway Administration and Department of Transportation in North Carolina concerning the potential impacts of this project on the species and its habitat.

Section 9(a)(1) of the Act lists prohibited acts which apply to any fish or wildlife species listed as endangered. Section 4(d) of the Act provides that these same prohibitions may, by regulation, be applied to a threatened species. The Service does not believe that it is necessary and advisable to the conservation of the Waccamaw silverside to apply all of the prohibitions listed under section 9(a)(1).

The Waccamaw silverside is threatened by alteration and/or degradation of water and habitat quality, not by intentional, direct taking of the species or by commercialization. Individuals of the species are estimated to number more than a million, with virtually the entire population being replaced each year by a new generation. State regulations governing the take of this and other Lake Waccamaw species presently exist, and the Service has concluded that these regulations are sufficient to protect the Waccamaw silverside from any threat which may arise from excessive collecting. The Service believes that the imposition of additional prohibitions would result in needless conflict with ongoing activities in Lake Waccamaw (i.e., bait seining) and would not promote the conservation of the species.

Section 4(d) requires that the Secretary shall issue such regulations as he deems necessary and advisable to provide for the conservation of threatened species. The Service believes that enforcement of State regulations governing take will be sufficient to

protect this species. However, to support State regulations governing take and provide for the conservation of the species, the Service proposes a special rule (see "Special Rule" section) that would provide the protection of the Endangered Species Act only when State laws governing the species were violated. The Service believes this special rule is consistent with the purposes of the Act and would facilitate the conservation of the Waccamaw silverside.

Public Comments Solicited

The Service intends that any final rule adopted will be accurate and as effective as possible in the conservation of endangered or threatened species. Therefore, any comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning any aspect of these proposed rules are hereby solicited. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to the Waccamaw silverside;

(2) The location of any additional populations of the Waccamaw silverside and the reasons why any habitat should or should not be determined to be critical habitat as provided by Section 4 of the Act;

(3) Additional information concerning the range and distribution of this species;

(4) Current or planned activities in the subject area and their possible impacts on the Waccamaw silverside; and

(5) Any foreseeable economic and other impacts resulting from the proposed designation of critical habitat.

This proposal serves as a notification to Federal agencies that may have jurisdiction over the land and water under consideration in this proposed action. These Federal agencies and other interested persons or organizations are requested to submit information on economic or other impacts of the proposed critical habitat.

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

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be filed within 45 days of the date of this proposal. Such requests must be made in writing and addressed to Warren T. Parker, Endangered Species Field Station, 100 Otis Street, Room 224, Asheville, North Carolina 28801.

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under 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).

Literature Cited

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Teulings, R.P., and J.E. Cooper. 1977. Cluster Areas. Pages 409-433 in J.E. Cooper *et al.* (eds.). Endangered and Threatened Biota of North Carolina. North Carolina Museum of Natural History, Raleigh.

Author

The primary author of this proposed rule is Nora Murdock, Endangered Species Field Station, 100 Otis Street, Room 224, Asheville, North Carolina 28801 (704-259-0321 or FTS 8/672-0321).

List of Subjects in 50 CFR Part 17

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

Proposed Regulations Promulgation

PART 17—[AMENDED]

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:

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.*).

2. It is proposed to amend § 17.11(h) by adding the following, in alphabetical order under "FISHES," to the List of Endangered and Threatened Wildlife.

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate where undangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
Fishes	:	:	:	:	:	:	:
Silverside, Waccamaw	<i>Menidia extensa</i>	U.S.A. (NC)	Entire	T		17.95(e)	17.44(j)

3. It is further proposed to add the following as special rules to § 17.44:

§ 17.44 Special rules—fishes.

() Waccamaw Silverside (*Menidia extensa*)

(1) No person shall take the species, except in accordance with applicable State fish and wildlife conservation laws and regulations.

(2) Any violation of applicable State fish and wildlife conservation laws or regulations with respect to the taking of this species will also be a violation of the Endangered Species Act.

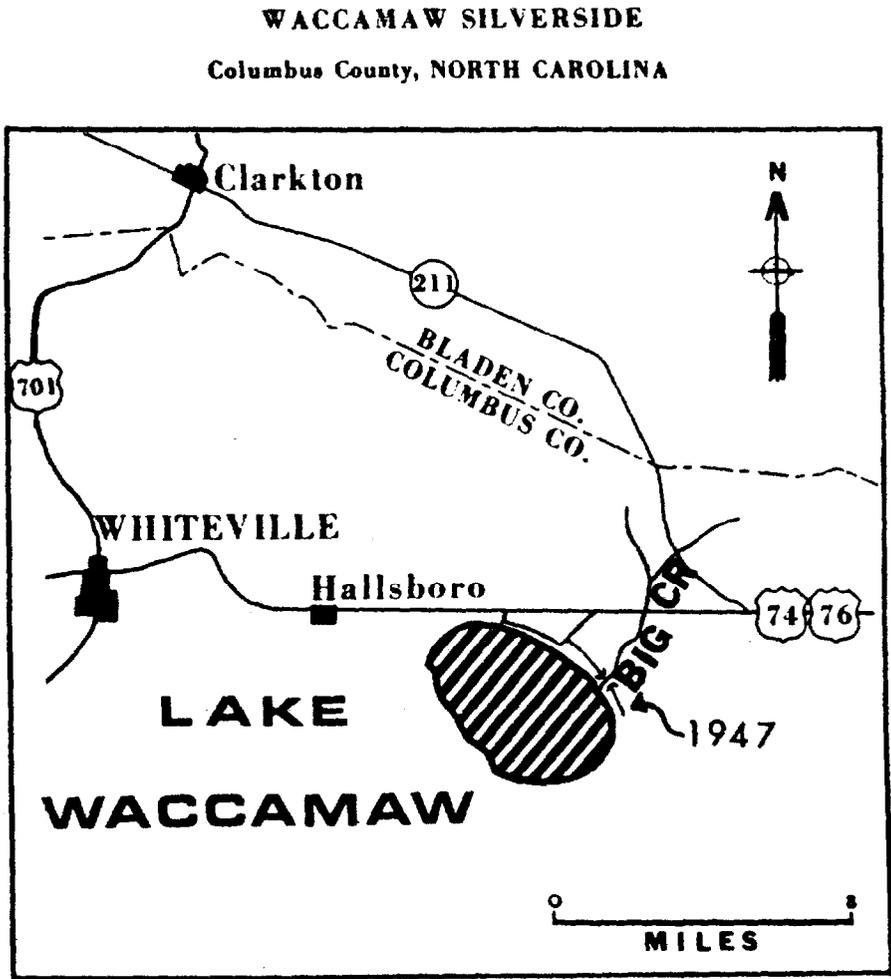
(3) No person shall possess, sell, deliver, carry, transport, ship, import, or export, by any means whatsoever, any such species taken in violation of these regulations or in violation of applicable State fish and wildlife conservation laws or regulations.

(4) It is unlawful for any person to attempt to commit, solicit another to commit, or cause to be committed, any offense defined in paragraphs (1) through (3) above.

4. It is further proposed to amend § 17.95(e) for "FISHES," by adding critical habitat for the Waccamaw silverside as follows: (The position of this entry under § 17.95(e) follows the same sequence as the species occurs in § 17.11).

§ 17.95 Critical habitat—fish and wildlife.

(e) * * *
Waccamaw Silverside (*Menidia extensa*)
 North Carolina, Columbus County. Lake Waccamaw in its entirety to mean high water level, and Big Creek from its mouth at Lake Waccamaw upstream approximately 0.6 kilometers (0.4 mile) to where the creek is crossed by County Road 1947.



Constituent elements include high quality clear open water, with a neutral pH and clean sand substrate.

Dated: October 9, 1985.
P. Daniel Smith,
 Acting Deputy Assistant Secretary for Fish and Wildlife and Parks.
 [FR Doc. 85-26565 Filed 11-6-85; 8:45 am]
 BILLING CODE 4310-55-M