

APPENDIX B

BIOLOGICAL ASSESSMENT OF

THREATENED AND ENDANGERED

SPECIES

(BATES)

**BIOLOGICAL ASSESSMENT
OF
THREATENED AND ENDANGERED SPECIES**

NEW SAVANNAH BLUFF LOCK & DAM
SECTION 216 FEASIBILITY STUDY

SAVANNAH RIVER
GEORGIA AND SOUTH CAROLINA

DECEMBER 1999

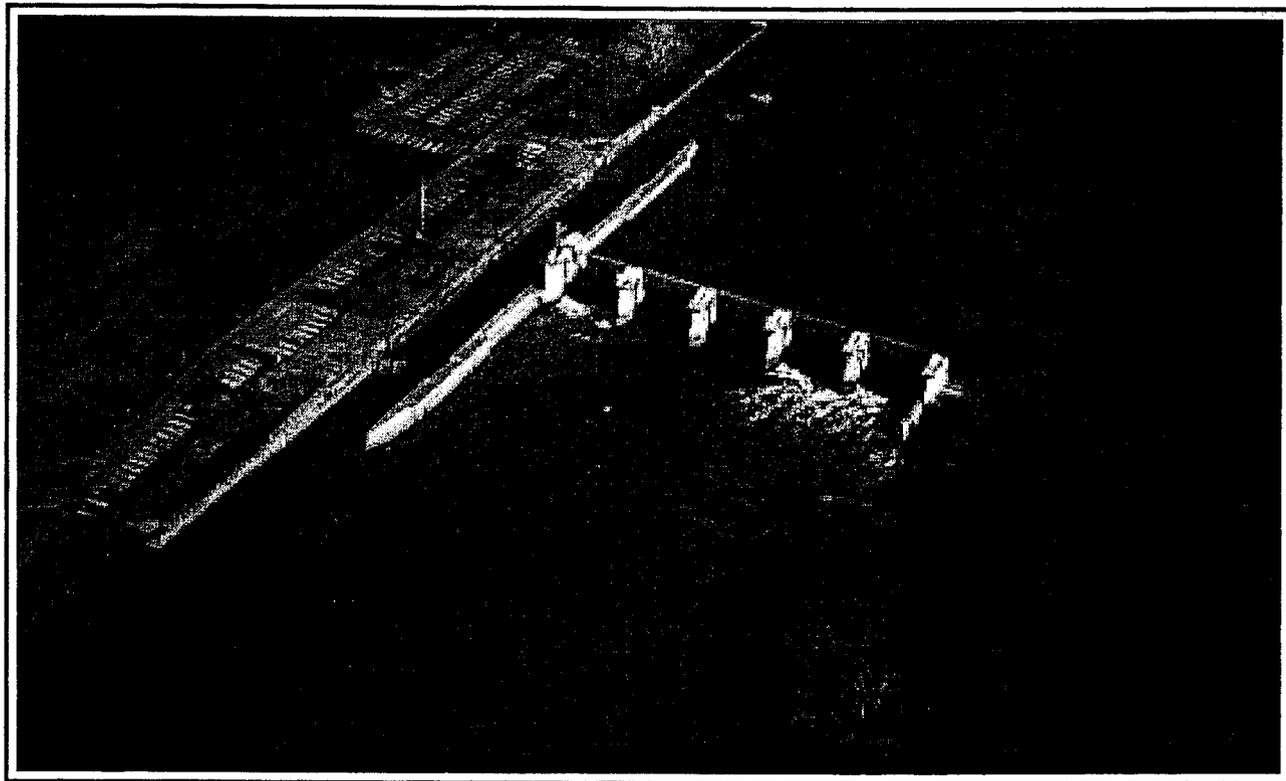
1.0 **PURPOSE:** This document was prepared because the U.S. Army Corps of Engineers, Savannah District, determined through early consultation with the U.S. Fish and Wildlife Service that the proposed project had the potential to affect federally listed threatened or endangered species.

2.0 **PROJECT DESCRIPTION.** Without a non-Federal entity to sponsor this project, the Corps of Engineers will recommend to Congress the deauthorization of the New Savannah Bluff Lock and Dam (NSBL&D), ceasing all future Operation and Maintenance, Rehabilitation, Repair, and Replacement (O&MRR&R) funding, and placing it in long term inoperable condition. This would include the removal of all gates and appurtenances, emptying and filling valves, catwalks, hoisting equipment, and miscellaneous items. A security fence and buoys would be installed around the project area for safety measures.

3.0 **PROJECT LOCATION.** The New Savannah Bluff Lock and Dam was built in the 1930s. It is located on the Savannah River 187 miles above the mouth of the river and approximately 13 miles downstream of Augusta, Georgia. The NSBL&D is in Richmond County, Georgia, and Aiken County, South Carolina. The Corps of Engineers, Savannah District, operates and maintains the dam portion of the project. The city of Augusta operates and maintains the navigation lock. Richmond County operates and maintains the recreational area adjacent to the impoundment.

4.0 **PROJECT BACKGROUND.** The uses of the New Savannah Bluff Lock & Dam project have substantially changed from those for which the project was authorized. The disposition study purpose is to determine whether there is a Federal interest in continuing with the current project operations and maintenance responsibilities, and to recommend an appropriate disposition plan for the project. The New Savannah Bluff Lock & Dam was originally acquired by the Federal Government in 1937 primarily in the interest of commercial navigation. Commercial navigation has been non-existent since 1978. Hence, Federal funding authorities required for proper maintenance of this project ceased, and, as a result, the structure has continued to physically deteriorate. To modify the existing project authority, a non-Federal public entity is required to act as a sponsor in accordance with the Water Resources Development Act of 1986. If a non-Federal entity does not act as a sponsor to assume its share of initial

repair costs and all future Operation and Maintenance, Rehabilitation, Repair and Replacement costs, USACE, will recommend deauthorization, which means discontinuance of all Operation and Maintenance, Rehabilitation, Repair and Replacement, to Congress.



PHOTOGRAPH OF NEW SAVANNAH BLUFF LOCK AND DAM

5.0 THREATENED AND ENDANGERED SPECIES. The species listed in Table 1 and Table 2 may be found in the general project area and have been classified as threatened or endangered pursuant to the Endangered Species Act of 1973. As such, these species must be protected, as much as is feasible from adverse project-induced impacts to either the individuals or habitat that has been found to be critical for their survival. In accordance with Section 7 of the Endangered Species Act of 1973, we have evaluated the impacts the proposed action could have on any threatened or endangered species potentially occurring in the project area. Each of these species will be described in detail with respect to their sightings and habitat in Richmond County, Georgia, and Aiken County, South Carolina. The federally endangered shortnose sturgeon, the State of Georgia endangered robust redhorse, and State of Georgia species of concern shoals spider-lily are most likely to be positively impacted by the proposed project.

6.0 DETERMINATION. The Savannah District has determined that the proposed work is not likely to adversely affect federally listed threatened or endangered species or designated critical habitat. The Savannah District further requests USFWS concurrence in this determination.

TABLE 1

FEDERALLY CLASSIFIED
THREATENED AND ENDANGERED SPECIES
IN RICHMOND COUNTY, GEORGIA

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>STATUS</u>
	ANIMALS	
Bald eagle	<u>Haliaeetus</u> <u>leucocephalus</u>	T
Wood stork	<u>Mycteria americana</u>	E
Red-cockaded woodpecker	<u>Picoides borealis</u>	E
Shortnose sturgeon	<u>Acipenser brevirostrum</u>	E

TABLE 2

FEDERALLY CLASSIFIED
THREATENED AND ENDANGERED SPECIES
IN AIKEN, SOUTH CAROLINA

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>STATUS</u>
	ANIMALS	
Bald eagle	<u>Haliaeetus</u> <u>leucocephalus</u>	T
Wood stork	<u>Mycteria</u> <u>americana</u>	E
Red-cockaded woodpecker	<u>Picoides borealis</u>	E
Shortnose sturgeon	<u>Acipenser</u> <u>brevirostrum</u>	E
	PLANTS	
Relict trillium	<u>Trillium reliquum</u>	E
Piedmont bishop-weed	<u>Ptilimnium</u> <u>nodosum</u>	E
Smooth coneflower	<u>Echinacea</u> <u>laevigata</u>	E

Discussion of Potential Impacts. Savannah District reviewed information concerning each of these species and evaluated the potential for the proposed action to impact these species. The results of our evaluation are contained in the following paragraphs:

Bald eagles (*Haliaeetus leucocephalus*).



Photo Credit: Robert Fields/
USFWS

Bald eagles use the inland waterways and estuarine areas throughout Georgia and South Carolina, including the Savannah River. This species primarily feed in fresh and brackish wetlands and nest in cypress or other wooded swamps. Since the proposed project is primarily restricted to the Savannah River and would not impact the species habitat, no adverse affect would occur.

Wood stork (*Mycteria americana*).

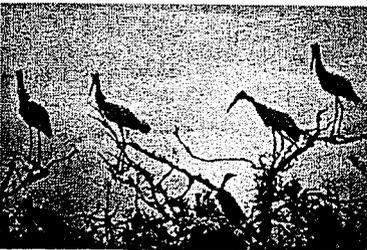


Photo Credit: Don Pfitzer
USFWS

Wood storks are known to frequent the more protected estuarine areas of the region for both feeding and nesting. Wood stork rookeries and nesting areas are located in hammocks and along the edges of the marsh behind the barrier islands. These birds have a unique feeding technique and require higher prey concentrations than other wading birds.

Optimal water regimes for the wood stork involve periods of flooding, during which prey (fish) populations increase, alternating with drier periods during which receding water levels concentrate fish at high densities. In conclusion, the proposed project would not adversely affect this species. In addition, the project area contains no habitat which has been designated as being critical for the species' survival.

Red-cockaded woodpecker (*Picoides borealis*).



Photo Credit: USFWS

This species requires forested habitat of at least 50 percent pine 30 years or older. No habitat that could potentially be used by this species would be impacted by the project. In conclusion, the proposed project would not adversely affect this species.

Shortnose sturgeon (Acipenser brevirostrum).

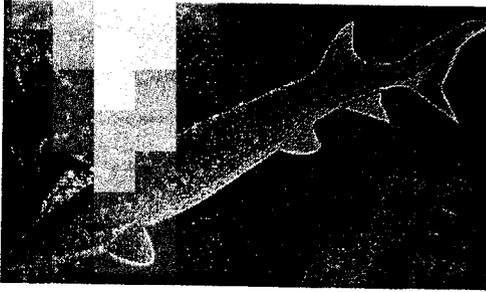


Photo Credit: Boyd Kynard,
National Biological Survey

The shortnose sturgeon is an anadromous species restricted to the east coast of North America. They have been recorded from New Brunswick to Florida. Throughout its range, shortnose sturgeon occur in rivers, estuaries, and the sea. This species is known to occur in the Savannah, Ogeechee, and Altamaha Rivers.

The shortnose sturgeon is a suctorial feeder. The preferred prey are small gastropods (NMFS, 1984), but the species will feed on crustaceans, insect larvae, and molluscs (NMFS, 1995). Hall et al., (1991), mention the small clam *Corbicula* as being a possible prey item.

The majority of populations have their greatest abundance and are found throughout most of the year in the lower portions on the estuary of their respective river (NMFS, 1984). They remain in the estuaries and at the interface of salt and freshwater until late winter, when they move upriver to spawn. The general pattern of seasonal movement appears to involve an upstream migration from late January through March when water temperatures range from 9 degrees Celsius to 12 degrees Celsius. Post-spawning fish begin moving back downstream in March and leave the freshwater reaches of the river in May. Juvenile and adult sturgeon use the area located 1 to 3 miles from the freshwater/saltwater interface throughout the year as a feeding ground. During the summer, this species tends to use deep holes at or just above the freshwater/saltwater boundary (Flournoy et. al., 1992, Rogers and Weber, 1994, Hall et al., 1991).

Although the lock and dam provides a blockage to upstream fish migration, efforts have been made to operate the lock and/or dam for fish passage. The current lease agreement between the Corps and the city of Augusta provides between 30 to 50 lock cycles for fish passage between 15 March and 15 June, annually. In past years, the Corps has facilitated fish passage by manipulating gate openings to create passage conditions. The dam presents a 15-foot impasse to upstream migration. When river flows are greater than approximately 16,000 cubic feet per second (cfs), the water levels on either side of the dam can be nearly equalized to provide unrestricted fish movement. The District has made no long term commitments to release such additional flows in future years. Passage is also accommodated through normal lock operations. The effectiveness of either fish passage effort is unknown. Little is known about the population that reaches the NSBL&D on its spawning migration or its use of the Savannah River's freshwater habitat for spawning and juvenile rearing. (Boltin, 1999)

With the proposed project of deauthorizing the NSBL&D and the removal of the gates, fish passage will increase for all migratory/anadromous fish including the shortnose sturgeon.

Relict trillium (Trillium reliquum).



Photo Credit: John D. Freeman

Relict trillium thrives best in mature, moist, undisturbed hardwood forests. Most sites are free from fire. The soils on which this plant occurs range from alluvial sands to rocky clays, but they all have a high organic content in their upper layer. At present, 18 of the 21 existing populations are located on privately-owned land.

One known population occurs in part of Aiken County, South Carolina, on land owned by the South Carolina Department of Wildlife and Marine Resources (SCWMRC). The segment owned by the SCWMRC is part of the largest known site (50,000 to 100,000 plants). This site, located in Aiken and Edgefield Counties, South Carolina, is owned by private, State, and municipal landowners. To date, State Natural Heritage Programs in all States have contacted most of the landowners of the populations. An informal agreement has been reached with the municipal government and one of the private landowners that own portions of the largest population. They have agreed to protect the plants on their respective lands. In addition, the SCWMRC is protecting its population segment (500 plants) as a natural area. The U.S. Army Corps of Engineers is protecting the population on its property in Alabama. Efforts involving State conservation agencies and the U.S. Fish and Wildlife Service are underway to locate new populations (FWS).

Piedmont bishop-weed (Ptilimnium nodosum).



Photo credit: Dr. Kim D. Coder

Found on and around wet sand bars, shoals, seeps, fast-flowing clear rocky streams, wet savanna meadows, shallow depressions in flatwoods, shallow pineland pools and ditches. Grows well under open canopies of oak, hickory, and pine. Short duration, annual floods can be a benefit to habitat. Land clearance and logging that disrupt normal water flow, and flooding destroys habitat.

Dam building, drainage changes, poor watershed management, and water pollution also disrupt habitat.

Smooth coneflower (Echinacea laevigata).



Photo credit: Dr. Kim D. Coder

Habitat

Mountain meadows and light woodlands with basic to neutral soils. Light competition from shrubs and mid-story trees can lead to losses as can lack of small local disturbances which bares mineral soil.

TABLE 3

STATE OF GEORGIA ENDANGERED AND THREATENED SPECIES
AND SPECIES OF CONCERN IN RICHMOND COUNTY

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>STATUS</u>
<i>ANIMALS</i>		
Atlantic pigtoe mussel	<u>Fusconaia masoni</u>	E
Robust Redhorse	<u>Moxostoma robustum</u>	E
<i>PLANTS</i>		
Rosemary	<u>Ceratiola ericoides</u>	T
Atlantic white cedar	<u>Chamaecyparis thyoides</u>	R
Georgia plume	<u>Elliottia racemosa</u>	T
Dwarf witch-alder	<u>Fothergilla gardenii</u>	T
Indian olive	<u>Nestronia umbellula</u>	T
Parrot pitcher-plant	<u>Sarracenia psittacina</u>	T
Sweet pitcher-plant	<u>Sarracenia rubra</u>	E
<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>STATUS</u>
<i>ANIMALS</i>		
Southeastern bat	<u>Myotis austroriparius</u>	SC
Bachman's sparrow	<u>Aimophila aestivalis</u>	SC
Southeastern American kestrel	<u>Falco sparverius paulus</u>	SC
Migrant loggerhead striker	<u>Lanius ludovicianus migrana</u>	SC
Gopher tortoise	<u>Gopherus polyphemus</u>	SC
Southern hognose snake	<u>Heterodon simus</u>	SC
Florida pine snake	<u>Pituophis mclanoleucus mugitus</u>	SC
Florida gopher frog	<u>Rana areolata aesopus</u>	SC
Carolina gopher frog	<u>Rana areolata capito</u>	SC
Atlantic pigtoe mussel	<u>Fusconaia masoni</u>	SC
<i>PLANTS</i>		
Shoals spider-lily	<u>Hymenocallis coronaria</u>	SC
Bog spicebush	<u>Lindera subcoriacca</u>	SC
Carolina bogmint	<u>Macbrides carolina</u>	SC
Ocmulgee skullcap	<u>Scutellaria ocmulgee</u>	SC
Pickering's morning-glory	<u>Stylisma pickeringii</u>	SC

Shoals spider-lily (*Hymenocallis coronaria*).



According to the Protected Plants of Georgia (Patrick, Allison, and Krakow, 1995), the shoals spider-lily is found in major streams and rivers in rocky shoals and in cracks of exposed bedrock usually with riverweed and water-willow. Plants can be completely submerged during flooding, the bulbs anchored to the rocks.

Hymenocallis coronaria has sustained significant habitat loss due to populations that have been submerged by impoundments and others have declined due to degraded water quality, especially due to the deposition of silt.

With the proposed project of deauthorizing the NSBL&D and the removal of the gates, approximately 15 miles of riverine habitat including several miles of rocky shoals could be restored. This should produce additional potential habitat for the rocky shoals spider-lily. This would benefit this protected species.

South Carolina Protected Species. The State of South Carolina has designated several species of plants and animals that are either rare within State boundaries or that have provided some measure of interest to mankind. South Carolina includes all species listed by the Federal government as threatened or endangered. The species shown in Table 4 are listed by the state. Under current Corps policy, state-listed species are given the same consideration as those protected by Federal regulations and statues. Under the proposed project, no impact would occur to species that have been designated by the State of South Carolina as being endangered or threatened.

TABLE 4

STATE OF SOUTH CAROLINA ENDANGERED AND THREATENED SPECIES

South Carolina--30 species

Animals--11 species

- E -- Bat, Indiana (*Myotis sodalis*)
- T -- Eagle, bald (*Haliaeetus leucocephalus*)
- E -- Falcon, American peregrine (*Falco peregrinus anatum*)
- E -- Heelsplitter, Carolina (*Lasmigona decorata*)
- E -- Manatee, West Indian (*Trichechus manatus*)
- T -- Plover, piping (*Charadrius melodus*)
- T -- Snake, eastern indigo (*Drymarchon corais couperi*)
- E -- Stork, wood (*Mycteria americana*)
- T -- Tern, roseate (*Sterna dougallii dougallii*)
- T -- Turtle, loggerhead sea (*Caretta caretta*)
- E -- Woodpecker, red-cockaded (*Picoides borealis*)

Plants--19 species

- T -- Seabeach amaranth (*Amaranthus pumilus*)
- T -- Little amphianthus (*Amphianthus pusillus*)
- E -- Smooth coneflower (*Echinacea laevigata*)
- E -- Schweinitz's sunflower (*Helianthus schweinitzii*)
- T -- Swamp pink (*Helonias bullata*)
- T -- Dwarf-flowered heartleaf (*Hexastylis naniflora*)
- E -- Black-spored quillwort (*Isoetes melanospora*)
- T -- Small whorled pogonia (*Isotria medeoloides*)
- E -- Pondberry (*Lindera melissifolia*)
- E -- Rough-leaved loosestrife (*Lysimachia asperulaefolia*)
- E -- Canby's dropwort (*Oxypolis canbyi*)
- E -- Harperella (*Ptilimnium nodosum (=fluviatile)*)
- E -- Michaux's sumac (*Rhus michauxii*)
- T -- Miccosukee gooseberry (*Ribes echinellum*)
- E -- Bunched arrowhead (*Sagittaria fasciculata*)
- E -- Mountain sweet pitcher-plant (*Sarracenia rubra ssp. jonesii*)
- E -- American chaffseed (*Schwalbea americana*)
- E -- Persistent trillium (*Trillium persistens*)
- E -- Relict trillium (*Trillium reliquum*)

Source: Region 4 Listed Species Under Fish and Wildlife Service
Jurisdiction By State as of 04/31/99