

## A collaborative process

# Researching environmental issues



To mitigate for impacts, the project would purchase up to 2,700 acres of threatened wetlands. The U.S. Fish and Wildlife Service previously identified the lands to be acquired as valuable additions to the refuge (shown above). *Photo courtesy Savannah National Wildlife Refuge.*

The Corps of Engineers, Savannah District, in conjunction with federal and state agencies, extensively examined the potential environmental impacts to deepening the Savannah harbor shipping channel to various depths, including not deepening at all. Agency coordination on the Environmental Impact Statement included the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, NOAA Fisheries Service, state agencies in Georgia and South Carolina, and others.

The Savannah District started the mitigation process early on and it remained a priority through completion. The process included both the normal steps followed during a typical Corps civil works study and additional steps to meet congressional authorization which stipulates the study's recommendations must receive approval by the federal agencies listed above.

From a broad perspective, mitigation planning consists of three major steps:

- 1) avoid impacts,
- 2) reduce impacts and,
- 3) replace/compensate for impacts.

The draft EIS describes—in detail—research on groundwater saltwater intrusion in the Upper Floridan aquifer; impacts to freshwater marshes, especially inside the Savannah National Wildlife Refuge; impacts to fish habitat, endangered species, wetlands, and air quality; changes to dissolved oxygen content in the harbor's waters; and dredged material management, among other topics.

The study concluded that the environmental impacts of deepening the shipping channel to 47 or 48 feet can be mitigated to an acceptable level. The report's EIS provides information on:

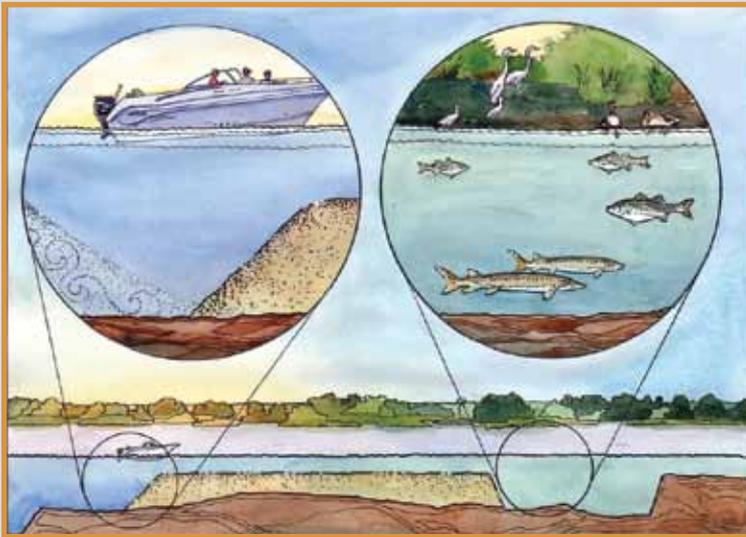
### **Upstream Saltwater Encroachment**

The Savannah District conducted extensive analyses to determine how modifications to the Savannah River estuary reduce the effects of saltwater encroachment. After investigating numerous scenarios, experts determined that specific modifications to the existing flows would best reduce these effects. Several modifications to tidal creeks in the upper harbor are part of the project.

## Freshwater Wetlands

Depending on the depth selected, the project may convert up to 340 acres of freshwater wetlands into brackish marsh. Some of these converted wetlands are located in the Savannah National Wildlife Refuge. To mitigate for those impacts, the project would purchase up to 2,700 acres of threatened wetlands. The U.S. Fish and Wildlife Service previously identified the lands to be acquired as valuable additions to the refuge.

## Saltwater Marsh



Artist rendering of fish sill designed to create a protected area where endangered fish are known to congregate.

In addition, up to 14 acres of saltwater marsh would be excavated by the project for the removal of the Back River tide gates and deepening of Kings Island Turning Basin. To mitigate for those impacts, up to 45 acres of marsh would be restored on Onslow Island, a former dredge material disposal site in the Savannah River in the upper portion of the harbor.

## Striped Bass

The striped bass (*Morone saxatilis*), a popular game fish, is making a comeback in the lower Savannah River as a result of a Georgia Department of Natural Resources stocking program. The deepening project would provide funds for additional stocking to compensate for increasing the salinity of areas used by this species for spawning.

## Shortnose Sturgeon

The project will adversely impact habitat for one endangered species, the Shortnose sturgeon (*Acipenser brevirostrum*). Harbor deepening would allow additional saltwater to enter the harbor and travel further upstream into areas currently used by this species. The increased salinity would reduce the suitability of some of these

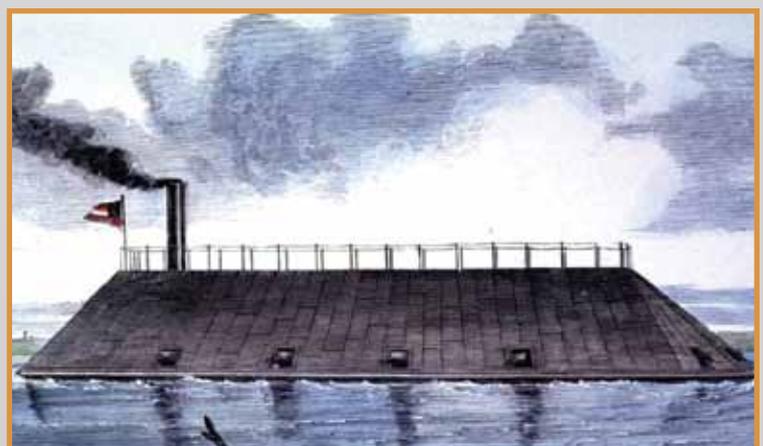
areas. To compensate for those impacts, the project includes construction of a fish passage structure around the first dam up the Savannah River and a sill to create a protected area where the endangered fish are known to congregate.

## North Atlantic Right Whale

The Savannah District has been engaged in efforts to protect the endangered right whale for many years. The district actively participates in several organizations which monitor the whales and their environment. Specifically, the Corps includes measures to protect the species in its dredging contracts, and requires endangered species observers on all contracted hopper dredges. In accordance with our past practices to protect the right whale, the Savannah District would conduct the proposed deepening project and future maintenance activities in accordance with the NOAA Fisheries' South Atlantic Regional Biological Opinion (SARBO) in effect at that time. If a new SARBO is not finalized by the time the project is constructed, the district would restrict hopper dredges working on the project to a 10-knot speed limit during calving season.

## CSS Georgia

In 1862, the Confederate Army built an ironclad warship to defend the rivers of Savannah. When the ship's propulsion system proved inadequate for maneuvering the massive vessel it became a floating battery. On the evening of Dec. 20, 1864, the Georgia's Confederate crew scuttled her in front of Fort Jackson to keep her from falling to the Union Army. Today, the Georgia rests some 40 feet below the river's surface at the edge of the navigation channel. Removal of and data recovery from this cultural resource will occur before the deepening project begins. 



Rendering of Confederate ironclad warship CSS Georgia which will be recovered from the Savannah River before deepening begins.