Appendix Information

What is the SHEP?

The Savannah Harbor Expansion Project (SHEP) will deepen the Savannah Harbor federal shipping channel from a depth of -42 feet to -47 feet. Studies demonstrate the deepening will produce substantial economic benefits for the nation by enabling larger and more heavily-loaded vessels to call on the harbor with fewer tidal delays.

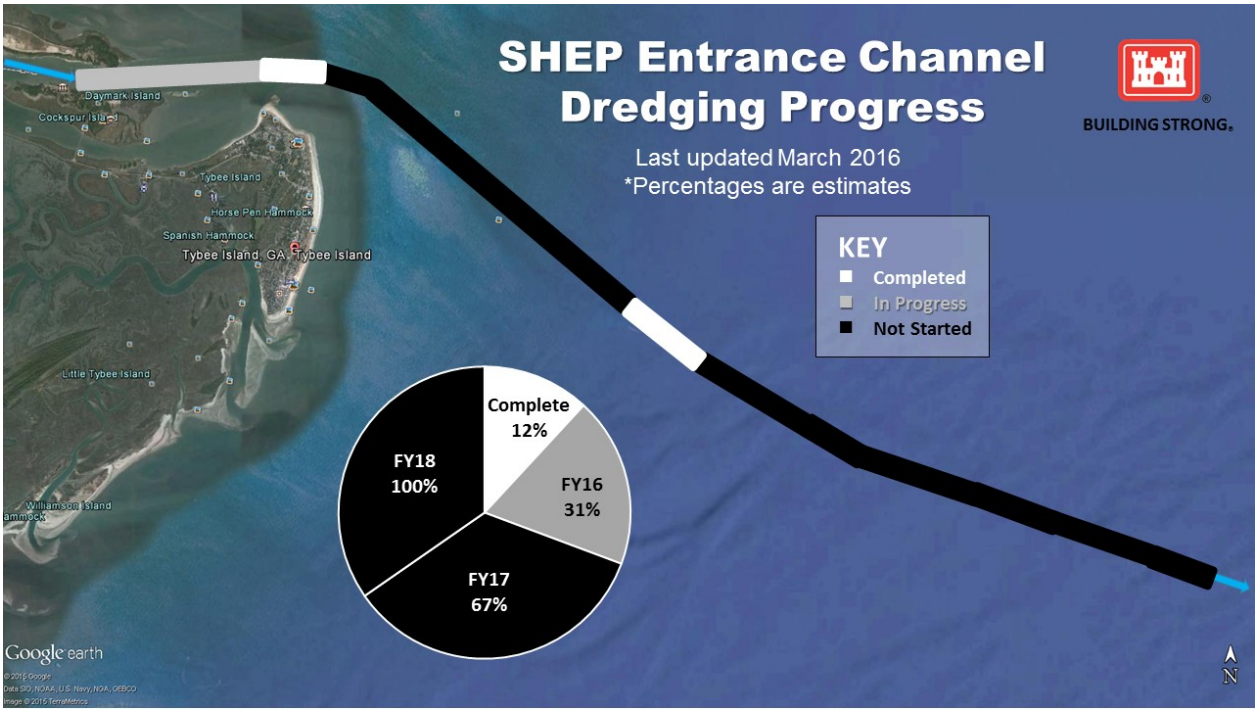
The total project cost estimate is currently $706 million. The SHEP is expected to net more than $174 million in annual benefits to the nation and has a benefit-to-cost ratio of $5.50 for every $1 invested. Costs of the studies and construction are shared between the U.S. government and the state of Georgia.

The U.S. Army Corps of Engineers is the lead federal agency for the project. All studies and plans required close coordination and approval from three other federal agencies: the Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service.

Given the proximity of the shipping channel to sensitive estuarine resources, the Corps, along with its state and federal partners, conducted exhaustive engineering and environmental studies to identify the environmental impacts that would be expected from the project and ensure those impacts will be offset through mitigation. Mitigation accounts for approximately half of the project cost.

Environmental mitigation features include installing a dissolved oxygen system; constructing a fish bypass upstream at the New Savannah Bluff Lock and Dam; re-routing freshwater flow in the upper harbor; preserving 2,245 acres of freshwater wetlands for the Savannah National Wildlife Refuge; and recovering remnants of the CSS Georgia civil war ironclad that rests some 40 feet below the river's surface.

The Corps has positioned itself to be able to proceed with the construction phase as Congress and the non-federal sponsor, the Georgia Ports Authority, provide the needed funding. The estimated time frame for construction is 5 years.



Savannah Harbor Expansion Project (SHEP) Components

Outer Harbor Dredging

Award Status: Awarded $134.5 million contract to Great Lakes Dredge & Dock Company of Oak Brook, Illinois

Summary: The Dredge Alaska moved into the Atlantic Ocean Sept. 10, 2015 to begin deepening the harbor from its current 42-foot depth to 47 feet (slightly deeper in the ocean end of the harbor). The contract covers extending the entrance channel by 7 miles, and deepening of the outer harbor from approximately Fort Pulaski for 18.5 miles into the Atlantic Ocean. Dredging the outer harbor is the first step to deepening the entire 40-mile shipping channel and harbor from deep ocean to the Georgia Ports Authority terminal in Garden City.

Inner Harbor Dredging

Award Status: Not advertised

Summary: The SHEP will deepen the Savannah harbor and the associated shipping channel from an authorized depth of 42 feet to 47 feet. This deepening will allow larger, more efficient container vessels to use the East Coast's second busiest container harbor with fewer weight and tidal restrictions. Inner harbor work will also include constructing three bend wideners and two meeting areas, and enlarging the Kings Island Turning Basin at the Garden City Terminal.

CSS Georgia Recovery Effort

Award Status: Initial work awarded to Dial Cordy and Associates of Jacksonville, Florida. Panamerican Consultants of Memphis, Tennessee conducted field work. The U.S. Navy, which owns the vessel, recovered major pieces of the ironclad.

Summary: The remains of the CSS Georgia, a Confederate ship, previously rested on the bottom of the Savannah River adjacent to the shipping channel, near Old Fort Jackson. The CSS Georgia's location impeded the channel expansion. Construction began in January 2015 when archaeologists mobilized for the first contract on the recovery of the CSS Georgia ironclad. The Corps of Engineers removed the remains from their location to protect them from further damage. Archeologists recovered more than 1,700 artifacts, most of which are related to the mechanics of the vessel.

Dissolved Oxygen Injection System

Award Status: Awarded $99.6 million contract to CDM Constructors Inc. of Maitland, Florida

Summary: In July 2015, the Savannah District awarded a contract to begin building dissolved oxygen injection system systems upstream on Plant McIntosh and downstream of Hutchinson Island. Workers began clearing the land for construction in February 2016. The process will remove water from the river, inject it with oxygen inside 12, two story devices called Speece cones, and return the water back to the river. These devices will maintain the level of dissolved oxygen in the harbor at the pre-SHEP 47' deepening level. The DO system is scheduled to be operational by December 2017.

Raw Water Storage Impoundment

Award Status: Awarded $40.2 million contract to Thalle Construction Company of Hillsborough, North Carolina.

Summary: Construction on the raw water storage impoundment began March 2016. We estimate active construction will take 18-21 months depending on weather and other factors. The impoundment, a small reservoir, will provide an additional resource of fresh water that may be needed when the Savannah River experiences drought conditions at extremely high tides in hot weather. Use of the impoundment during these rare occurrences ensures water quality remains unchanged. During normal operations, water will continue to be drawn from Abercorn Creek and will bypass the impoundment. During low river flows and high tides, pumping from Abercorn Creek will stop and water will be drawn from the impoundment until tides recede.

Flow Re-routing

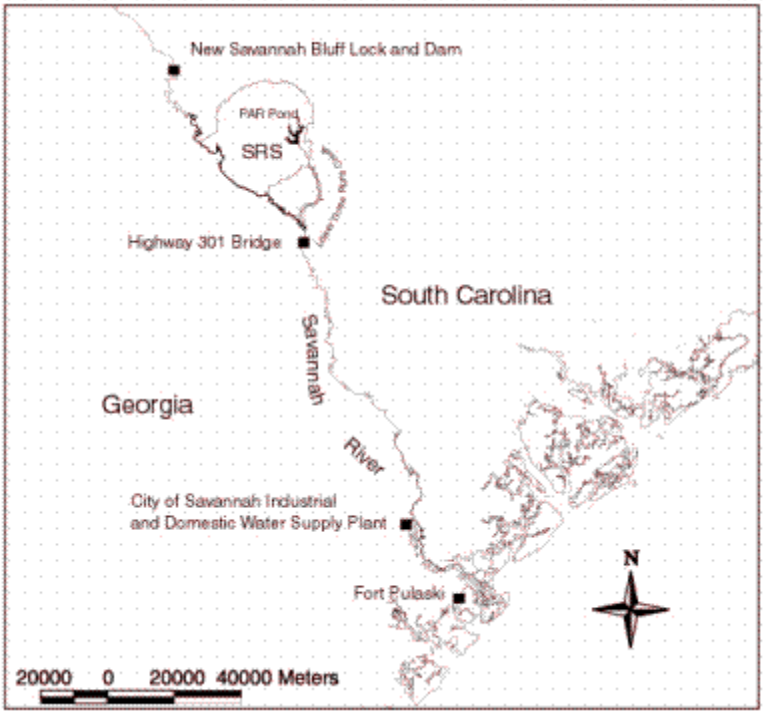
Award Status: Not advertised

Summary: The 47-foot plan includes several modifications to tidal creeks in the upper harbor. These changes will re-direct the flow of saltwater to significantly reduce the amount of impacts to freshwater marsh, which was determined the highest priority wetland natural resource in the Savannah River Basin. The flow re-routing plan will direct more freshwater into the Back River area on the South Carolina side of the river. Flow re-routing would reduce salinity in 740 acres of salt marsh, converting it to brackish marsh (making it less salty, but not exceeding four parts per thousand of salinity). Studies show the wetlands will retain the same functional value, thus constituting “no net loss” of wetlands.

New Savannah Bluff Lock and Dam Fish Passage

Award Status: Not advertised

Summary: The harbor deepening is expected to adversely impact habitat for one endangered species, the shortnose sturgeon. 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 passageway around the New Savannah Bluff Lock & Dam. This passage would restore access to historical spawning grounds for the shortnose sturgeon and other species. The design was coordinated closely with NOAA Fisheries with an estimated construction cost of $35 million.

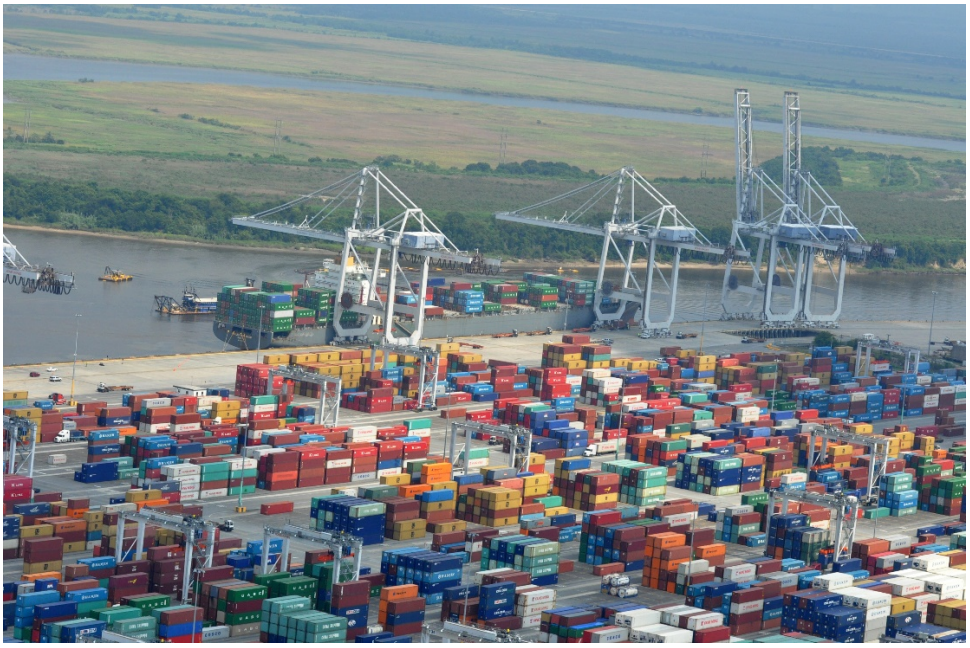


Cotton unloading on Savannah River early 1900's??????

Cargo Ship entering Savannah River

8500 unit container ship

Loaded Cargo Ship Leaving Savannah Port

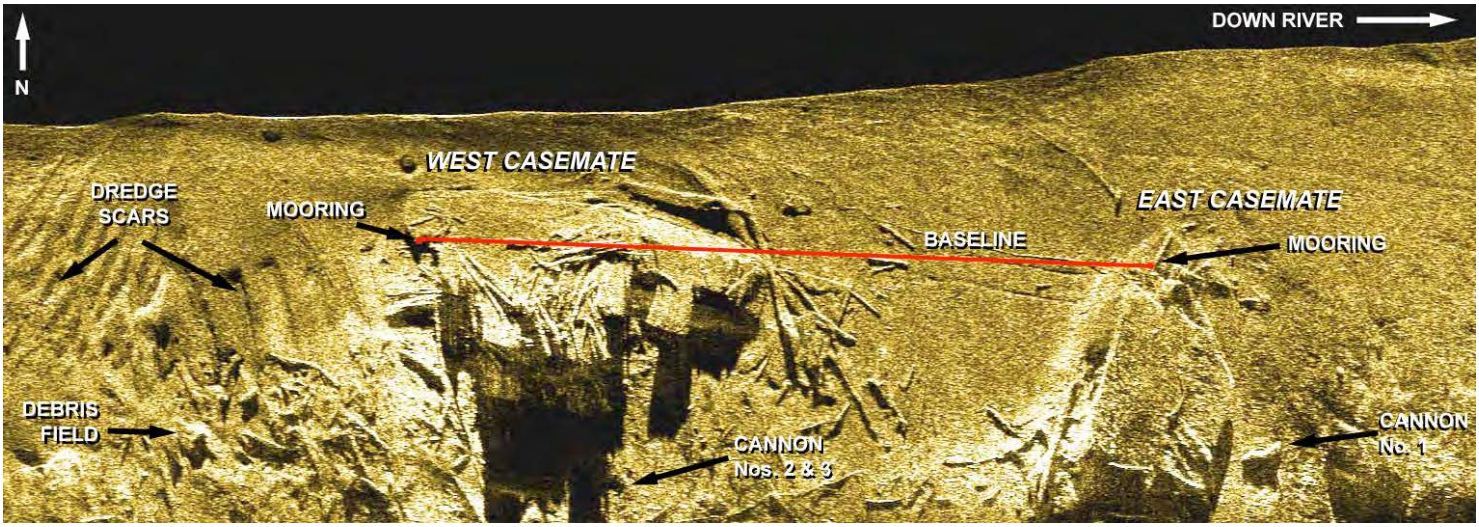


Containers at the Georgia Ports on the Savannah River

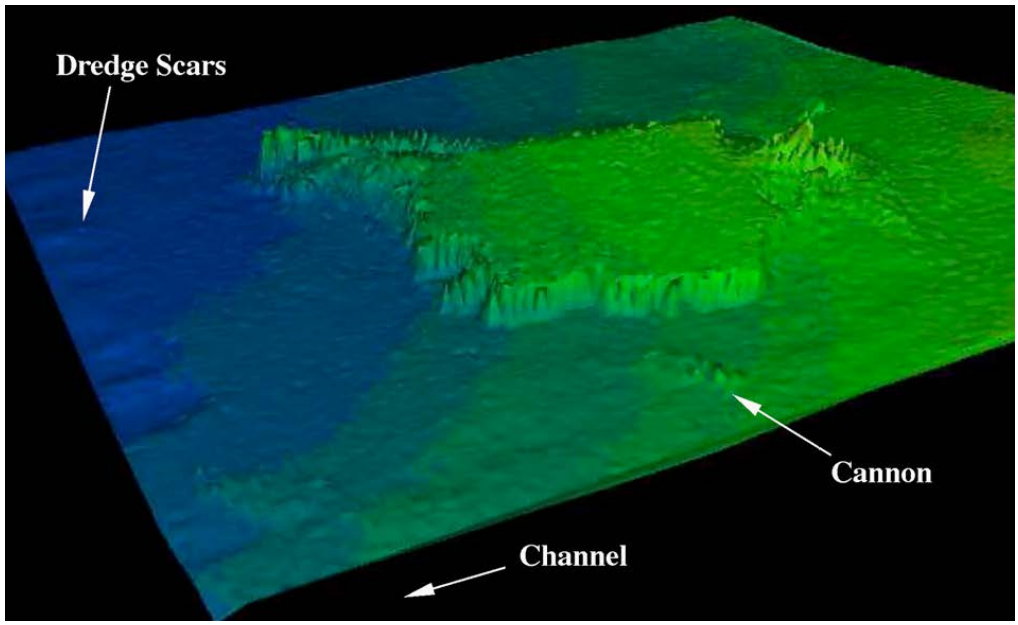
Dredging the Savannah River in the 1920's

"The depth of water over the bar, at the entrance of the Savannah River, is sufficient for the largest freight vessels engaged in the carrying trade between America and Europe. The channel of the river, from its mouth to the city, is deep enough for the safe passage of vessels drawing nineteen feet of water. The general government, from year to year, is making improvements on this, and it is confidently expected that the twenty-two feet which is aimed at, will be reached in a very few years. These are some of the outside influences which contribute to Savannah's importance, and they serve to show that the capitalist who may desire to embark in trade, invest his money in improving real estate, in manufacturing, or in any other of the many channels that may suggest themselves, can feel assured that it will be safe and profitable for him to do so."

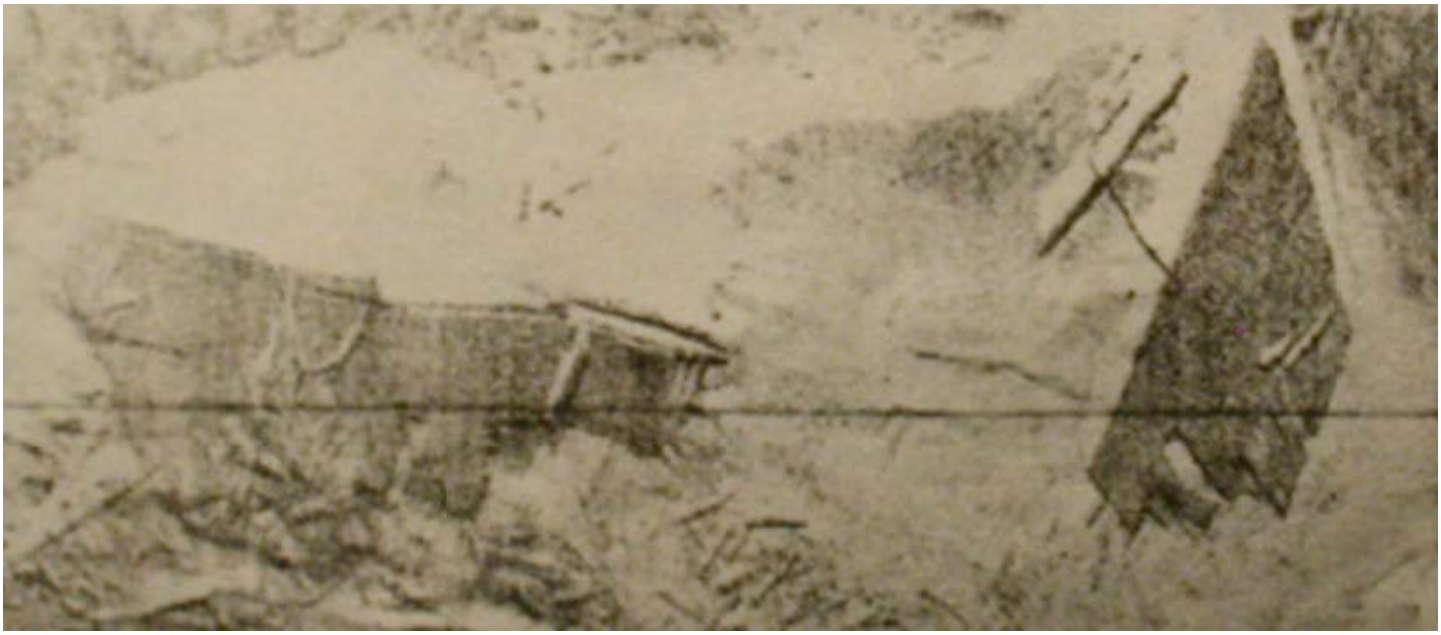
Dredging the Savannah River was already a concern in the late 1800's



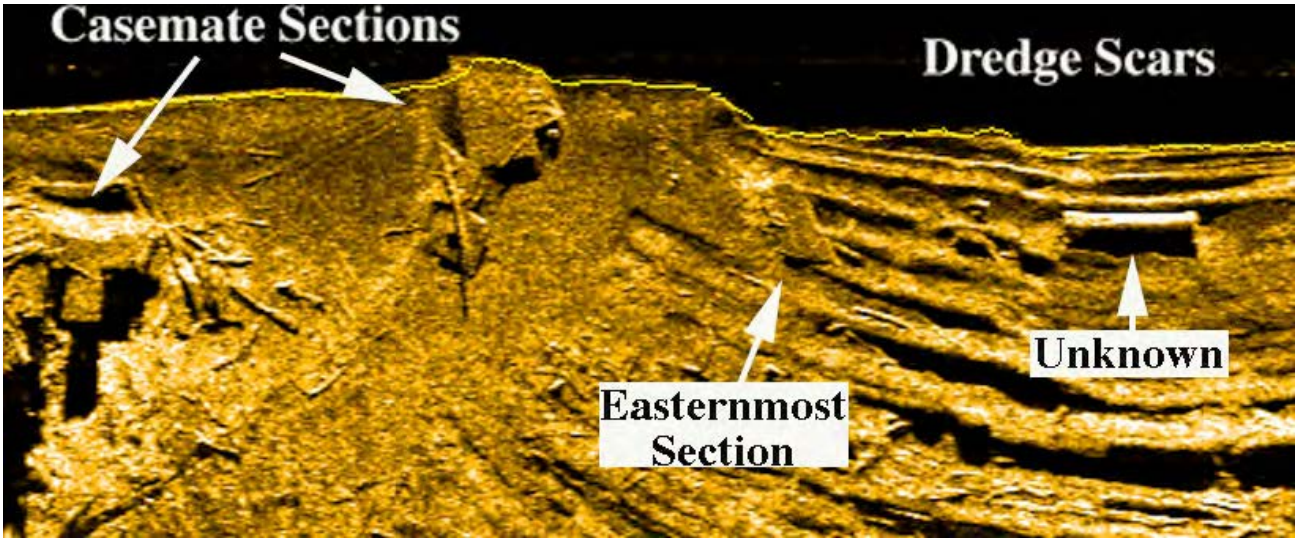
Acoustic Image of CSS Georgia wreck site



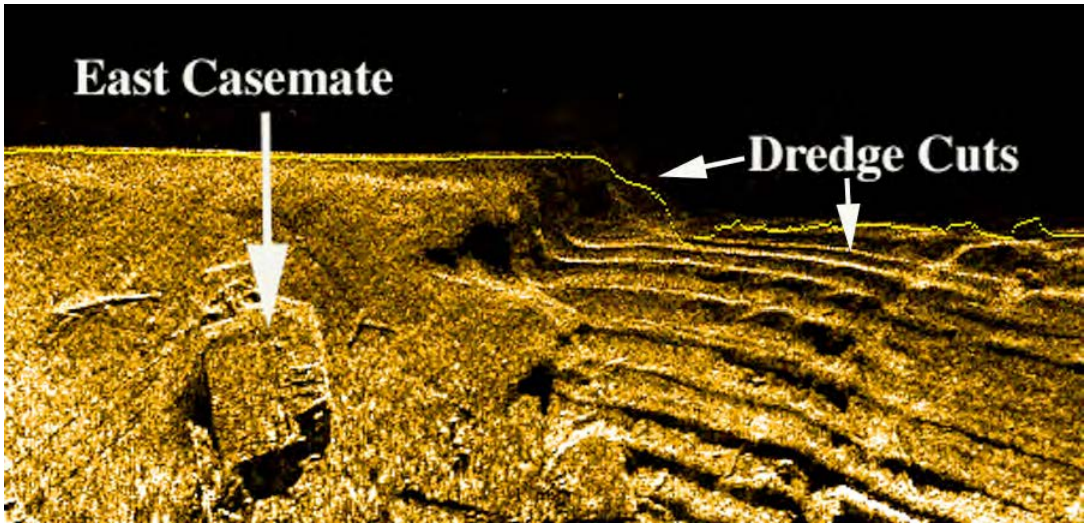
2003 Reson Bathymetric Imaging of East Casemate of CSS Georgia



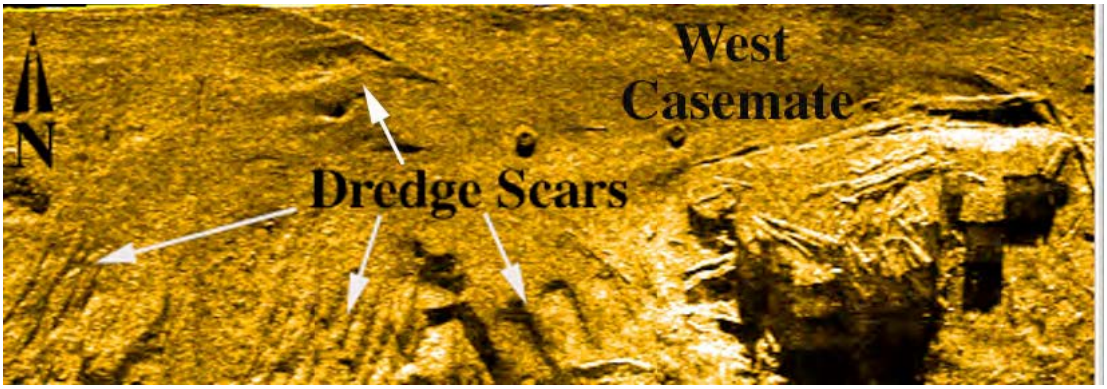
1986 Acoustic image of wreck site



Acoustic image of the wreck site



Close-up view of acoustic image



32 pounder cannon recovered in 1986 and on display outside Fort Jackson