
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX F: Cultural Resources

SAVANNAH HARBOR EXPANSION PROJECT

Chatham County, Georgia and Jasper County, South Carolina

January 2012

(Revised July 2012)



**US Army Corps
of Engineers**
*Savannah District
South Atlantic Division*

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EDITOR’S NOTE: The underlined portions of the document that have been updated since the January 2012 version.

CSS *Georgia* Mitigation

1. INTRODUCTION

The CSS *Georgia* was a Confederate ironclad built in Savannah in 1862. The vessel spent the war anchored in the Savannah River and served as a floating battery that guarded the channel (Figure 1). The vessel was a major reason why the city was not taken by sea. Confederate forces scuttled the vessel in December 1864 to avoid capture by Union forces. Some salvage was conducted in 1868. The vessel was listed in the National Register of Historic Places in 1987 at the national level of significance for its architecture, association with significant events, association with significant individuals, and archaeological research potential.

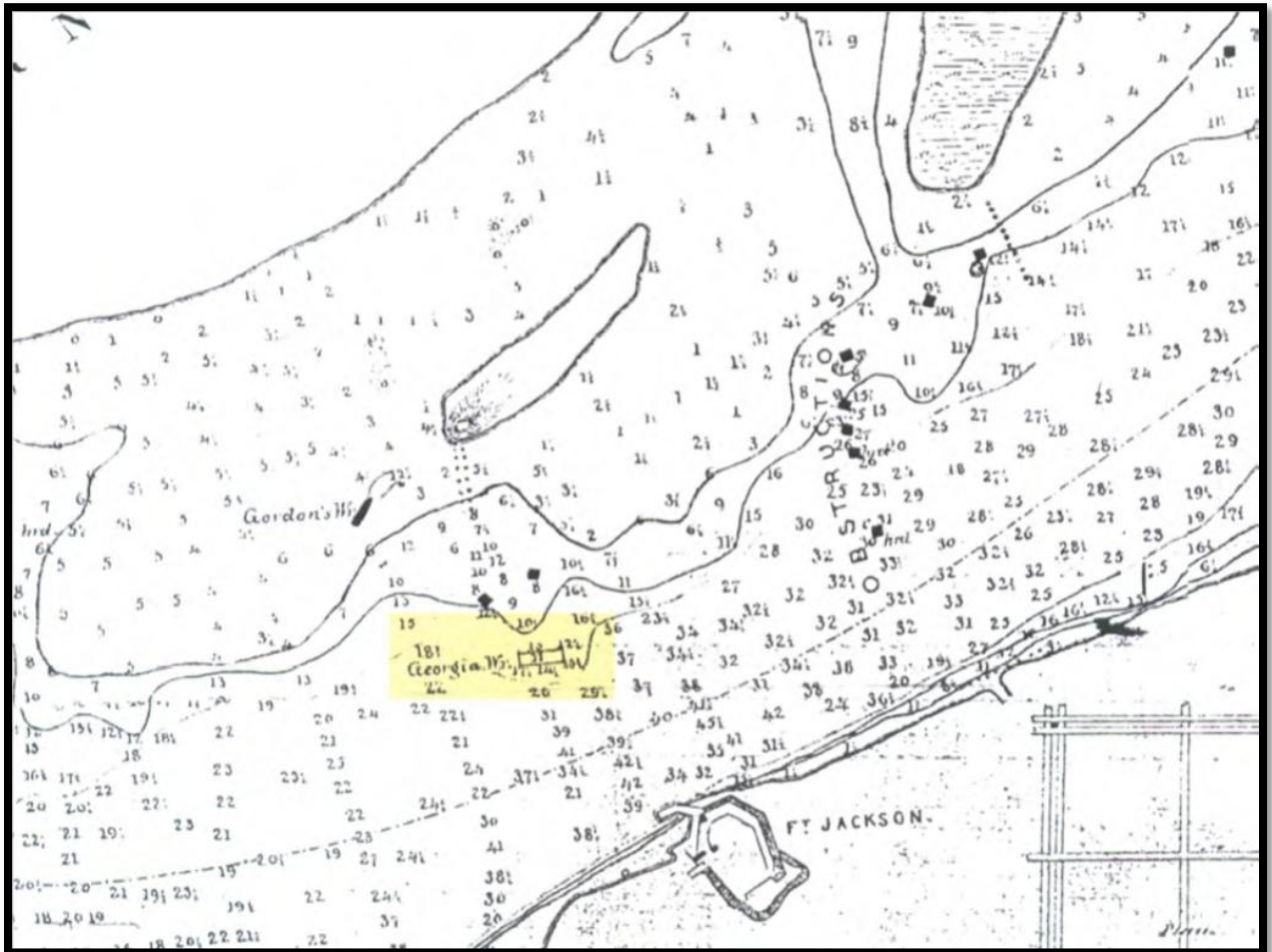


Figure 1. 1971 Gillmore and Ludlow map showing the wreck site located on the edge of the channel, opposite Fort Jackson, in approximately 20 feet of water (as presented in Swanson & Holcombe 2003:96).

2. PREVIOUS IMPACTS AND INVESTIGATIONS

2.1. Late 19th Century

From 1862 until December of 1864, considerable efforts were made to secure the eastern approaches to Savannah using river obstructions as well as shore batteries. The CSS *Georgia* was just one of many types of obstructions placed in the river during the Civil War. After the war ended, cribs and other obvious obstructions were removed from the River. Conversely, the CSS *Georgia*, resting in an unmarked location on the river bottom, remained, and was forgotten until struck in 1866 by the ship *Lizzie Baker* (Swanson and Holcombe 2003).

Recognizing the vessel and other hidden obstructions as potential threats to navigation, the Treasury Department issued two contracts to remove the *Georgia* and sunken properties downstream, as well as any remaining cribs. It was reported that dynamite was used at the wreck site in 1868 to remove portions of the vessel, apparently unsuccessfully. The 1872 Report of the Chief of Engineers noted that the wreck site had already created a sand bar and that the site was covered by 11 feet of water at low tide. As a result of the salvage work, at least 80 tons of the railroad iron were removed, but not the engines and other machinery (Garrison et al 1980). The Office of the Chief of Engineers determined the wreck was not a hazard to navigation and it remained in place and was soon forgotten.

2.2. Mid 20th Century

From roughly 1930 to 1960, annual cross sections of the navigation channel documented an obstruction at the wreck site protruding from the surrounding sediments. The top of the obstruction was at elevation -19 feet. The surrounding sediments were at about elevation -29 feet. When the channel was being widened by 100 feet in 1968, a contract dredge encountered the remains of the CSS *Georgia*. Railroad iron that made up the *Georgia*'s casemate became entangled in the cutterhead and portions of the vessel were impacted and strewn along the channel bottom. The wreck was left on the side slope and marked with a buoy. In the early 1970s, the design for a proposed sediment basin entrance channel was realigned to avoid cutting through the center of the wreck site. The revised design impacted one end of the vessel slightly. This action predated the establishment of the Georgia State Historic Preservation Office and passage of Public Law 93-291, which granted Federal Agencies the authority to expend funds for investigations and mitigation of cultural resources.

2.3. Late 20th Century

In 1979-1980, Savannah District contracted with Texas A&M University to perform historical and archaeological investigations to determine the significance and character of the site and identify potential mitigation alternatives (Garrison et al, 1980). Their studies found that the vessel was located in the side slope and was being impacted by Operations and Maintenance (O&M) dredging. The investigators found the vessel to be still largely intact, with the hull buried in sediments (Figure 2). The contractor recommended a five-phase recovery plan which included the construction of a cofferdam. The highest elevation of the wreckage was -29 feet.

The navigation channel bottom was at -38 feet. The design of the recommended cofferdam was completed in 1982, but no further work was performed due to the expected cost of the cofferdam.

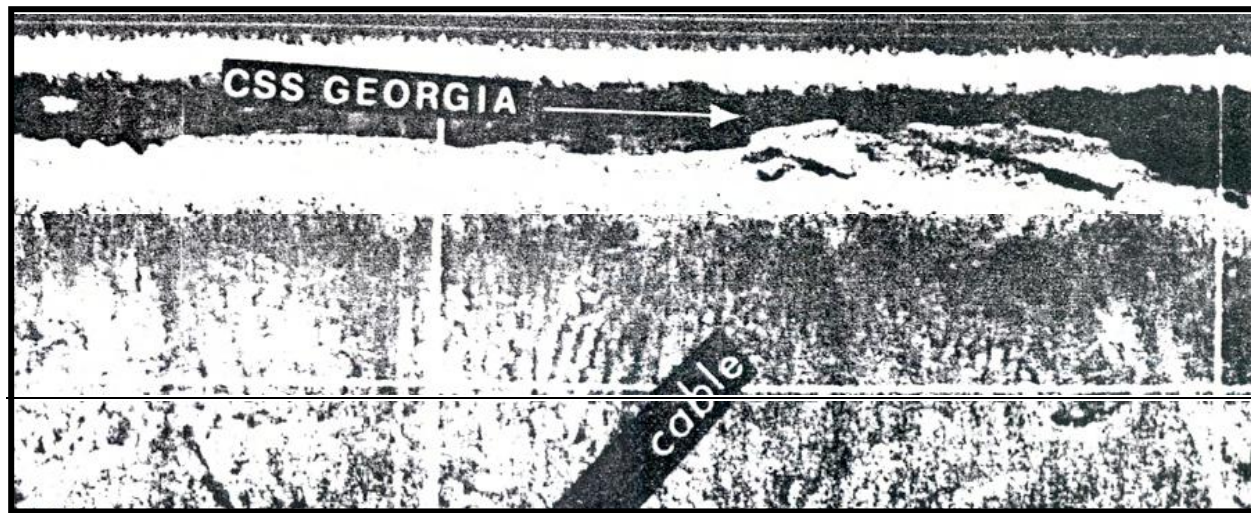


Figure 2. Acoustic image showing large sections of wreckage thought to be the West and East Casemate sections (as presented in Garrison et al. 1980: Figure 39).

In 1983, the District initiated advance maintenance dredging in Savannah Harbor in the vicinity of the CSS Georgia. Because this was determined to be a minor alteration to harbor maintenance activities, no environmental document was prepared and no historic preservation coordination was conducted. Dredging at the site included maintenance of the full channel width, 4 feet of advance maintenance, and box cutting 20 horizontal feet into the side slope. The dredge again encountered the wreck, and ordnance and other artifacts were recovered from the disposal area. There was a major change at that time in the wreck topography, with sonar showing dredge scars within the wreck site. In 1984, District divers recovered live ordnance and two cannons from the bottom of the navigation channel.

During the period 1984-1993, no maintenance dredging was conducted in the navigation channel bottom within 100 feet of the wreck site, but the throat of the sediment basin continued to be dredged. Although that operation impacted some of the wreckage, it was determined that not dredging the throat caused water exiting Back River to cut a channel behind the wreck. The District continued monitoring the wreck site using side scan sonar and hydrographic surveys and found that the elevation of the wreck site was becoming lower and the soft sediments that covered the center of the site were disappearing (Figure 3). During the period 1991-1993 the District locked open the Tide Gate and closed New Cut, thereby altering flows in the Back River, across the CSS Georgia, and in the navigation channel in Savannah River. It was at this time that the District entered into a Programmatic Agreement with the states of Georgia and South Carolina and the Advisory Council on Historic Preservation which included the requirement to determine past, present, and future impacts to the wreck site resulting from O&M activities and to mitigate such impacts.

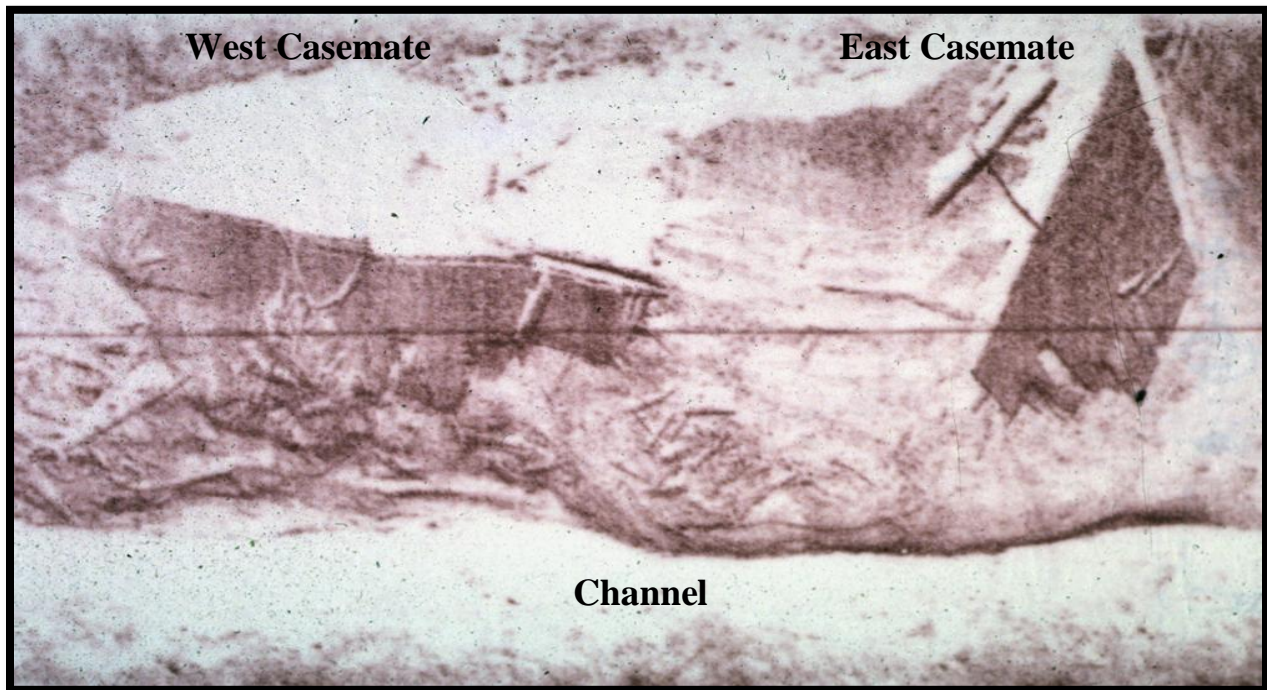


Figure 3. 1986 sidescan image of the *Georgia* wreck site (US Army Corps of Engineers, Savannah District).

During the period 1991-2003, no O&M funding was available to implement the studies required by the 1991 Programmatic Agreement. No maintenance dredging was conducted in this channel segment; however, hydrographic and sonar surveys showed continued deflation of the site.

During 1993 and 1994, the District deepened Savannah Harbor from 38 feet to 42 feet MLW. Since the navigation channel depth in the area of the site was already below 42 feet, and no new work dredging or O&M dredging would be required in that location, it was determined that harbor deepening would have no effect upon the wreck site. The District discontinued dredging the entire 500-foot channel width in the wreck site vicinity, implementing a 100-foot offset in the immediate vicinity of the CSS *Georgia*. The DMMP includes this prohibition of dredging in the immediate vicinity of the CSS *Georgia* as long as the vessel remains in place on the channel side slope.

2.4. Synopsis of Impacts

Past harbor activities have severely impacted the wreck site. The greatest recent impact came from the 1983 dredging, which consisted of 4-feet of advance maintenance and box cutting into the side slopes. Locking open the gates of the Tide Gate altered flow patterns in the vicinity of the CSS *Georgia*, scouring protective sediments from the wreck site. All sediments have been removed and the remaining wreck portions lie exposed on the impermeable Miocene clay layer. Dredge scars from the 1983 dredging event are carved into the Miocene clay on portions of the site. The top of the wreckage was at elevation -28 feet in 1980 and it is now at -38 feet. Loss of the covering sediments allowed marine borers to destroy the wooden portions of the vessel. All

that remains are the larger metal artifacts including portions of the broken up steam plant, a propeller, cannons, ordnance, etc. While severely impacted, the site still meets National Register listing requirements. With the exception of the Sediment Basin throat, no dredging has recently been conducted within 100 feet of the wreck site and normal maintenance dredging occurs within this immediate area.

3. EFFORTS TO MITIGATE EFFECTS TO CSS *GEORGIA*

Section 106 of the National Historic Preservation Act of 1966 (P.L. 89-655, as amended) states that Federal Agencies will take into account the impacts of their actions on historically significant resources. To do this, Savannah District has executed various agreement documents. The paragraphs below describe those agreements.

3.1. 1991 Programmatic Agreement

In 1991, Savannah District entered into a Programmatic Agreement (PA) to identify, evaluate, and mitigate impacts to Historic Properties as a result of the New Cut Closure Project. That agreement also required Savannah District to determine past, present, and future impacts of the existing Savannah Harbor Project upon the CSS *Georgia*. As part of this agreement, the District was to comply with the following stipulations:

a. The CSS *Georgia* is listed in the National Register of Historic Places (1987) at the national level of significance; therefore, the Savannah District shall identify and evaluate alternatives to avoid and/or mitigate adverse effects to such properties in accordance with 36 CDR 800.5(e).

b. The Savannah District shall also ensure that data recovery plans are developed in consultation with the GASHPO and SCSHPO for the recovery of archaeological data from properties determined eligible for inclusion in the National Register of Historic Places.

c. Further, as part of the Programmatic Agreement, and in consultation with the Council, the GASHPO, and the SCSHPO, Savannah District will prepare a Memorandum of Agreement (MOA) to outline procedures for identifying, evaluating, and mitigating and or removing adverse effects of the Savannah Harbor Navigation Project upon the CSS *Georgia*, a property listed in the National Register of Historic Places.

The MOA was prepared in 1996 (see following section). The required studies were initiated in 2003 and finalized in 2007 (Watts and James).

3.2. 1996 Memorandum of Agreement

In 1996, the District prepared a MOA for the CSS *Georgia*. In that document, the District committed to develop a mitigation plan to minimize the adverse effects on the CSS *Georgia* resulting from construction or maintenance of the Savannah Harbor Navigation Project. This

MOA was part of the Long Term Management Strategy (LTMS), August 1996, for which a Record of Decision was signed by the Division Commander in February 1997. There were two specific requirements stated in this document, which when completed, would satisfy Savannah District's Section 106 responsibilities for identifying, evaluating, and mitigating effects of the Savannah Harbor Navigation Project upon the CSS Georgia.

a. The first requirement in the MOA was to identify the present condition of the vessel.

b. The second requirement was to look at the contributing effect of the construction and/or maintenance of the Savannah Harbor Navigation Project on the CSS Georgia.

Once the above two requirements were carried out, the MOA states that Savannah District would implement the following:

- The Savannah District would identify and evaluate alternatives to eliminate, minimize, and retard the Savannah Harbor Navigation Project's contribution to factors which may threaten the vessel's present condition or stability.
- Savannah District would develop a mitigation plan to minimize the adverse effects on the CSS Georgia resulting from the construction or maintenance of the Savannah Harbor Navigation Project, in accordance with 36 CFR Part 800.5.
- The District's studies, study results, evaluations and determinations would be documented in a report. The report would include a discussion of the present condition of the vessel, factors which may threaten the vessel's present condition, adverse effects which construction and/or maintenance of the Project has had on the vessel, and restrictions which the vessel has on present harbor operations, the merits, efficacy, and projected costs of each alternative, and make recommendations as to the optimal alternative(s). The results and recommendations are found in the Watts and James 2007 report.
- Savannah District would implement the recommended plan, subject to the availability of funds.

The 2003 investigation fulfilled the stipulation of the MOA to identify the present condition of the vessel and assess the adverse effects of construction and/or maintenance of the Savannah Harbor Navigation Project on the wreck. Based on that report and other information, the District concluded that construction and/or maintenance of the Savannah Harbor Navigation Project has contributed to the degradation of the CSS Georgia. Since the Savannah Harbor Expansion Project was under evaluation when the studies were finalized, the District did not implement the recommended mitigation plan for the CSS Georgia.

4. 2003 INVESTIGATIONS OF THE CSS GEORGIA FOR THE SAVANNAH HARBOR EXPANSION PROJECT

4.1. Site Assessment

Savannah District contracted with Gulf Engineers and Consultants, Inc. to conduct in-situ archaeological investigations of the wreck site (Watts and James 2007). A separate archival

research project was contracted to New South Associates (Swanson and Holcombe 2007). The work was jointly funded by the Savannah Harbor Expansion Project and the Savannah Harbor Navigation Project (O&M). The objectives of the in-situ investigation were to characterize and delineate CSS *Georgia* wreck site using remote sensing data, ascertain the current (i.e., 2003) state of preservation, compare present (i.e., 2003) and past site conditions, provide an interpretation of site features using historical documents, identify current (i.e., 2003) and future impacts from the existing navigation project, vessel traffic, natural process and the potential deepening project and review alternatives and recommend a course of action and methodology for mitigating impacts from existing navigation and the potential deepening project. Studies found that the wreck site had become exposed and largely destroyed by a combination of factors, including different river flow patterns, dredging and marine organisms. The archival research project provided a historical context of CSS *Georgia*, which was useful for interpreting the site features.

The work consisted primarily of remote sensing, mapping of the wreck site, and dive investigations. Whenever possible, a video camera was used to enhance documentation; however, poor visibility often precluded its use.

The 2003 survey/investigation established that the surviving remains of the Civil War ironclad are limited, and that the lower hull of the vessel no longer exists. Two large sections of iron casemate and a third smaller section are present, along with the vessel's propulsion machinery including steam cylinders and at least one propeller and shaft, three cannon, a possible boiler, and miscellaneous, small, as of yet identified components and artifacts (i.e., debris field). Dredging impacts can be clearly seen in many of the sidescan sonar images in the report (Watts and James 2007). Dredging scars can be seen on the southern or main channel side of the site, with no evidence of dredging to the north. An acoustic image of the wreck site looking downriver or east shows the linear dredge scars that cut into the Miocene clays run just up to the West and East casemate sections. The easternmost section of the wreck and an "unknown," item possibly a boiler, lie in deep scars within the channel. Yet another image shows the depth and height of the dredge cuts, and the face that the cuts left in the clay bottom. An acoustic image of the wreck site looking down on the West Casemate, shows the linear dredge scars running in multiple directions. Known as the "Debris Field," the dredged area to the left and below (south) the Casemate contains propulsion system components, and cannon. While it is unknown if the multiple scars indicate different episodes of dredging, this portion of the wreck, including the West Casemate, has been heavily and adversely impacted by dredging operations.

4.2. Report Conclusions

Based on the 1979 Texas A&M investigations of the wreck site, it had been assumed that a significant portion of the hull of the vessel survived underneath the sections of armored casemate that is exposed on the river bottom. However, the investigation carried out in 2003 clearly established that this is not the case, that the surviving remains of the Civil War ironclad are limited, and that the lower hull of the vessel no longer exists. Two large sections and a smaller third section of iron casemate are present along with the vessel's propulsion machinery including steam cylinders and at least one propeller and shaft, three cannon, a possible boiler, and miscellaneous, small, as yet identified components and artifacts.

The absence of a lower hull and the impacts to the existing components are a direct result of historic salvage and to a much greater degree operation and maintenance dredging operations associated with the Savannah Harbor Navigation Project. Dredging impacts were discussed previously in detail.

The surviving sections of armored casemate lie on a base of Miocene clay. This dense clay that forms the riverbed has and would prevent downward migration of virtually any material associated with the CSS *Georgia*. Each section of the casemate was found to be resting on top of a pedestal created by erosion and/or dredging of the adjacent clay deposit. Examination of the Savannah District annual survey bathymetry indicates that opening of the Back River channel in 1978 contributed to the erosion of the sand and mud that once protected the wreck, leaving the surviving vessel structure and associated material exposed on the bottom surface. Hydraulic probing to a depth of seven feet around and in between casemate sections confirmed that no evidence of the hull is present below the bottom surface.

Based on the data collected during the 2003 investigation of the wreck, it is apparent that the surviving remains of CSS *Georgia* are limited. Although the archaeological record has been severely compromised by the salvage in the 19th century and dredging and erosion in the 20th century, the dearth of information about the ironclad's design and construction makes every surviving element of the structure valuable.

4.3. Report Recommendations

A National Register of Historic Places listed property, the *Georgia* site has been adversely affected over time, most recently through impacts from repeated dredging operations associated with operations and maintenance of the harbor. This has been clearly documented in the report of the 2003 investigation. Therefore, because of past adverse project effects, and prior to any future activities that may also impact the site, mitigation of these adverse effects is necessary, and it is recommended that measures take the form of a comprehensive investigation and recovery of extant remains.

Because of the limited amount of structural remains and the level of disturbance of the archaeological record, it is recommended that data and material recovery be designed to include systematic site testing, and partial and full excavation and data recovery that build cumulatively on the results of the 2003 in-situ archaeological investigation. The archaeological recovery of data and material from the CSS *Georgia* wreck site will mitigate past impacts and the continued deterioration of the surviving structural remains and the loss of valuable historical and archaeological data preserved in the wreckage and associated artifacts. In addition, the Savannah River navigational channel will be cleared of obstructions to navigation, including explosive ordinance that constitute a threat to both navigation and dredging in the vicinity of the wreck site. Use of a cofferdam is not recommended for any future work at this site. Rather, the site environment is such that it is both feasible and cost effective to conduct the data and material recovery operation with archaeological divers working from a fixed platform.

4.4. District Conclusions of the Existing Condition

The 2003 investigations revealed that the impacts from the 1983 dredging were more catastrophic than previously thought. In addition to the direct dredging impacts, the secondary impacts were site deflation and resultant destruction by marine organisms.

4.5. Expected Impacts of Savannah Harbor Expansion Project

Existing O&M dredging activities near the *Georgia* have an exclusion zone 250 feet from the wreck, resulting in dredging of only the southern half of the channel. If the proposed SHEP alternative is implemented, the north side of the channel will require dredging in areas previously off-limits, resulting in collapse of sidewalls. Additionally the selected alternative includes a 100 foot-wide meeting lane, which will also impact the site.

With the exception of the No Action Alternative, the same impacts would occur regardless of the depth alternative selected.

4.6. 2012 Programmatic Agreement

To mitigate adverse effects to the CSS *Georgia* caused by implementation of the proposed Savannah Harbor Expansion Project, the District entered into a PA with the Georgia and South Carolina State Historic Preservation Offices and the Naval History and Heritage Command. A copy of the PA is in Appendix G of the EIS.

5. PROPOSED MITIGATION METHODS AND COSTS

Mitigation methods and associated costs for CSS *Georgia* were developed based on the results and recommendations in the 2007 report of investigations and consultation with the 2012 PA signatories – the Georgia and South Carolina State Historic Preservation Offices, the Naval History and Heritage Command, and the US Army Corps of Engineers, Savannah District. Mitigation of the vessel would consist of (1) surveys and mapping to identify the present condition of the site and items that remain of the wreck, (2) removal of the wreck from the site, (3) conservation of items with cultural or historical value, and (4) long term curation of the conserved items.

This work is estimated to cost approximately \$9.5 million and extend over 7 years, although the archaeological portion will be completed in approximately 1.5 years. The conservation of the large metal artifacts is a lengthy process and will require several years of electrolysis to remove salts that have permeated the artifacts. Stopping and restarting this process is detrimental to the artifacts. As a result, the conservation process would continue on a given artifact once it is begun until the process is complete. Large-volume conservation space is not commonly available and if funds were not available throughout the conservation process, a facility could commit the space to another project and be unavailable for the half-conserved artifacts. To address this potential issue, the Corps would enter into a multi-year funding agreement to ensure the conservation facility receives sufficient funds to complete its work on the CSS *Georgia* artifacts.

Once the artifacts are conserved, O&M funding would be used to fund curation in perpetuity. Curation involves the long-term preservation and storage of the artifacts and documents associated with the wreck investigation. Criteria for curation of Federal archaeological collections are outlined in 36 CFR, Part 79. Curation costs include the costs of moving the documents and conserved artifacts to the facility and an initial fee for their incorporation in the facility. Yearly fees for collection, care, and maintenance continue in perpetuity.

5.1. Mitigation Methods

Based on the results of the 2003 in-situ investigations of the CSS *Georgia* and the recommendations (Watts and James 2007), the District developed a data recovery strategy to mitigate adverse impacts to the vessel. The excavation and data recovery will enable archaeologists to address research questions regarding the design and construction of the CSS *Georgia*, as no drawings or plans of the vessel are known to exist. The project will entail systematic identification, mapping and recovery of material associated with the wreck. A team of archaeologists, unexploded ordnance (UXO) specialists and marine salvage specialists will be required to complete the field work portion of the project. Once the vessel and associated artifacts have been recovered, long term conservation and curation will be required. More detail about the various stages of the mitigation project is presented below.

5.1.1. Archaeological Data Recovery and Mitigation

The data recovery and mitigation effort is estimated to cost about \$5 million and will entail three major components: 1) archaeological data recovery, 2) UXO clearance, and 3) vessel recovery (i.e., marine salvage). The archaeological data recovery will be accomplished in phases by a single underwater archaeological contractor. Information developed in each phase will define the scope of work for the following phase. The Corps would work with the Consulting Parties to develop the research plan that describes the work to be conducted, and the research questions that are to be answered. The contractor will conduct remote sensing to accurately identify site conditions and establish a grid to accurately map the site. The site environment is such that it is both feasible and cost effective to conduct the data recovery operation with archaeological divers working from a fixed platform (e.g., barge) rather than using a cofferdam. In 2003, it was determined that the majority of the wreck site sits just outside the navigation channel. Commercial vessel traffic, while transiting close, should not be an issue with respect to setting mooring and anchors at the wreck site, or with respect to diver safety (Figure 4). The District will coordinate with the US Coast Guard and the Harbor Pilots to ensure commercial vessels are aware of the diving to ensure safety. The results of the fieldwork and analysis will be presented in a technical report which would undergo peer review before being accepted by the federal government and the state historic preservation offices. It is estimated that all archaeological work, with the exception of acceptance of the final report, will be completed approximately 1.5 years after the first task order has been issued.

Due to the historical significance of the wreck, several studies have been conducted to determine the extent of artifacts and ordnance present (Garrison et al. 1980; Kozak 1984; Swanson and Holcombe 2003; Watts and James 2007). A discussion of previous investigations is found in Chapter 2 of this document. The most recent effort was conducted in 2003 and included side-scanning sonar as well as diver investigations of the vessel and associated remains (Watts and James 2007). These surveys collectively identified locations of anomalies and permitted visual confirmation of the types and sizes of items, including heavy guns and ordnance. Diving operations conducted in 1986 by the District resulted in the clearance of numerous munitions and two cannon. A single iron round shot was observed in the wreck site during the 2003 investigation. Historical research suggests the remaining three cannon are a 6-pounder, an 8.5-inch shell gun, and a 32-pounder Model 1846. The services of a UXO team working with a marine salvage company will be required to ensure all ordnance is properly cleared from the vessel and the channel in the vicinity of the vessel.



Figure 4. View of 2003 survey vessel with upbound freighter in navigation channel in background. Note Old Fort Jackson to the right of the freighter’s bow. (Watts and James 2007:Figure 20).

The services of a marine salvage company will also be necessary to recover the vessel and associated large artifacts. Investigations conducted in 2003 indicated the surviving remains of the ironclad to be composed predominately of two major intact sections of vessel structure, disarticulated railroad iron, and items from the ‘Debris Field’ which are primarily vessel propulsion machinery as well as other unmapped and unidentified objects. The largest piece of casemate was observed to have an overall length of 68 feet with a width of approximately 24 feet at its widest point.

5.1.2. Conservation

Artifacts will be recovered in three phases of fieldwork over a 9- to 12-month period. Artifact conservation must begin while the artifacts are being recovered. Waiting until all artifacts are recovered, inventorying them, and then scoping, negotiating, and awarding a contract is detrimental to the artifacts and is not ethical. It is likely the District will issue an IDIQ for this work. If an IDIQ is not in place when the artifacts are recovered, a temporary conservation facility/triage facility will be established until such time as the artifacts can be transferred for long-term conservation.

By setting up an IDIQ contract, an existing state-of-the-art conservation facility can be selected and artifacts can be transferred and conserved in lots using task orders. In 2003, the District requested the assistance of the US Army Corps of Engineers, St. Louis District Mandatory Center of Expertise for the Curation and Management of Archaeological Collections (MCX-CMAC) to identify conservation facilities that could accommodate the remains of the *Georgia*. The study indicated that there are only a handful of large, quality conservation facilities, and only the *Hunley* facility was prepared and willing to take on a project of this size. Since that time, the East Carolina University facility has been enhanced and the *Monitor* facility at the Mariners Museum has been developed. East Carolina University has indicated that it would be willing to take on this project. The status of the facility at Mariners Museum is also being investigated. The Conservation Research Laboratory at Texas A&M University has also expressed interest in conserving the wreck.

It is unknown at this time exactly how much of the vessel structure or how many of the artifacts will be recovered and conserved. Until remote sensing and initial dives have been completed, it will not be possible to ascertain the present condition of the vessel. Discussions between the 2012 PA consulting parties will be conducted to determine which pieces have the greatest research potential, can be logistically removed without creating extensive damage to the artifact and can ultimately be exhibited to the public in a facility that meets federal curation standards. It is estimated that it may take as long as 5-7 years to conserve some of the larger artifacts. Conservation costs for the vessel and artifacts are estimated to cost approximately \$3.5 million. This figure assumes that one hundred percent recovery and conservation of artifacts is not probable.

5.1.3. Curation

The District must comply with federal regulations "Curation of Federally-Owned and Administered Archeological Collections (36 CFR Part 79)." Part 79 contains the definitions, standards, procedures and guidelines to preserve collections of prehistoric and historic material remains, and associated records. A collection as defined in 36 CFR Part 79 is "material remains that are excavated or removed during a survey, excavation or other study of a prehistoric or historic resource, and associated records that are prepared or assembled in connection with the survey, excavation or other study." It is estimated that curation costs will be approximately \$300,000.

According to 36 CFR Part 79, curation involves “managing and preserving a collection according to professional museum and archival practices.” There is no existing curation facility in Georgia or South Carolina capable of handling the massive, special-needs collection that will be generated by this project. The preferred curation alternative is to keep the collection in the same complex with the interpretation facility in Savannah, the city with which the vessel was associated. The Coastal Heritage Society (CHS) wishes to be the curation and major interpretive/display center. CHS interprets Savannah’s Civil War naval history at two of its National Historic Landmark sites. Old Fort Jackson, the former headquarters of Savannah’s Confederate Naval Squadron, is located across the river from the wreck and may serve as a staging and interpretive area during excavation. Savannah History Museum, in downtown Savannah, has an existing exhibit on Savannah’s Confederate Navy and efforts to obstruct and defend the river. CHS has amassed over \$22 million in Federal, state, county, and city funds for the rehabilitation and restoration of their third landmark property, the Central of Georgia Railroad Shops located next to the Savannah History Museum. Large exhibit spaces and a major, state-of-the-art curation facility are planned for this facility. The facility also has a historic connection to CSS *Georgia*. Workers from the Central of Georgia Railroad were contracted to assist in the vessel’s construction and the railroad iron used in the vessel’s armored casemate was purchased from the Central of Georgia Railroad. St. Louis District’s CMX-CMAC will provide technical recommendations to CHS and will assist in preparation and execution of the curation agreement document.

While Savannah District will be conducting the mitigation effort, the CSS *Georgia* is actually the responsibility of the US Navy. A formal transfer of property from the General Services Administration to the US Navy was made in 2003. Therefore, the Navy will have approval authority over the curation facility that is chosen and the US Navy will enter into long-term curation agreements with the facility. The US Navy would also approve the temporary loan of artifacts to other museums or facilities wishing to exhibit the artifacts.

5.2. Associated Tasks and Coordination

Once the District has awarded contracts for the archaeological data recovery and mitigation, conservation and curation, District personnel will continue to spend a considerable amount of time coordinating with other agencies to ensure the work is completed safely, in conformance with the terms of the contracts, in ways that protect the resource as much as possible, and without adverse impacts to the overall Savannah Harbor Expansion Project schedule.

5.2.1. US Coast Guard and Savannah Pilots

As the work site is on the edge and partially within the Savannah Harbor Navigation Channel, the District will need to coordinate the dive operations with the US Coast Guard and Savannah Pilots to ensure diver safety. It is anticipated that at least one large barge will be anchored continuously on the edge of the channel for up to 1 year. Smaller barges and small craft will be working in the area during dive operations. US Coast Guard regulations and US Army Corps of Engineers Safety Manual will be reviewed to identify safe anchoring procedures, lighting, other markings, etc. During the 2003 dive operations, large vessel traffic was restricted to one way navigation while diving was conducted and a Notice to Mariners was issued requiring other harbor traffic to reduce speed during dive operations. With the exception of large vessel traffic

associated with Savannah Harbor pilots, this notice was NOT effective. A more effective method needs to be identified and implemented. Since the work barge will be anchored in the harbor during the hurricane season, a hurricane evacuation plan will be required. Department of Homeland Security requirements and notifications will also need to be addressed.

5.2.2. Ordnance and Explosives Safety Specialists

Live and inert ordnance is present and must be addressed during recovery, conservation, and curation phases. The contractor's UXO specialist, in consultation with the District's Explosive Ordnance Specialist and the Corps' Ordnance and Explosives Center of Expertise, will develop a UXO plan to include a description of each type of ordnance known to be on the vessel, as well as descriptions of other types of ordnance of the period that may have been stored aboard the vessel. The descriptions will include photographs and scale drawings showing diagnostic features for the type and, if of an explosive type, detailed descriptions and drawings of fuse mechanisms, powder chambers, powder, etc. The UXO plan will identify contractor procedures should ordnance be encountered. It will also include the identities, contact information, and notification procedures for the designated Explosive Ordnance Disposal dive team that will recover the ordnance and how the ordnance will be treated once recovered. While there is very little sediment on the site that could conceal ordnance, some pieces may be located under the two large pieces of casemate. Ordnance may also be located in the barrels of the cannon that are believed to still be within the wreck.

5.2.3. Public Involvement

There is substantial public interest in the CSS *Georgia*. The 1998 Draft Environmental Impact Statement elicited 1,588 responses from individuals supporting archaeological recovery of the CSS *Georgia* and stabilization of Fort James Jackson. The work on Fort Jackson has since been completed.

When the latest studies (2003) were conducted of the CSS *Georgia*, Savannah District held a media day and created public information brochures. A local television station ran a series of stories on the progress of the investigations and one of its former employees created a documentary about the vessel. District archaeologists made presentations to a large number of groups. Among them are the Society for Georgia Archaeology, local chapters of the Sons of Confederate Veterans and the United Daughters of the Confederacy, the Coastal Georgia Archaeological Society, an honors sorority, and other groups.

Public involvement will be a major component of the mitigation project. While all media events, educational interpretation, etc., will be subject to guidance, review, and approval of the District's Corporate Communications Office (i.e., Public Affairs), much of the material such as web site info, short-term exhibits, etc., will be generated by the archaeological excavation and conservation contractors and, possibly, the Coastal Heritage Society. The plan will need to identify media and interpretive goals, as well as coordination and approval procedures. It will also identify major media event opportunities (project start up, project milestones, etc.) and develop a potential list of interpretive themes and methods to be investigated at various sites (Old Fort Jackson, Savannah History Museum, web, schools, etc.).

5.2.4. Summary of Mitigation Phase and Task Descriptions

As stated previously, data recovery and mitigation of the CSS *Georgia* will entail multiple phases of work that will be conducted by both contractors outside of the District and District personnel. Below is a summary of the tasks that will be required for this effort.

Phase—Set-up—In-House

I. Tasks

- A. Scope, negotiate, and award IDIQ contract for data recovery
- B. Scope, negotiate, and award IDIQ contract for conservation
- C. Select curation facility
- D. Coordinate with US Coast Guard
- E. Coordinate with Savannah Pilots
- F. Prepare scope of work, negotiate, and award first task orders on IDIQ for data recovery
- G. Prepare scope of work, negotiate, and award first task order on IDIQ for conservation
- H. Prepare and execute real estate agreement for contractor staging area, conservation triage facility, and interpretive facilities
- I. Prepare UXO plan
- J. Prepare public involvement plan

II. Task Descriptions

A. Scope, negotiate, and award IDIQ contract for data recovery.

Tasks: Prepare scope of work, CBD notice, evaluation criteria and estimate, review proposals and estimates, and award contract.

Lead(s): SAS archaeologist, SAS CT

Contributing Personnel: Other designated proposal reviewers, SAS administrative assistant, SAS supervisor, SASOC

Discussion: This mitigation effort will total about \$5 million. It will be accomplished in phases by a single contractor. Information developed in each phase will define the scope of work for the following phase. The best method for accomplishing this is through use of a separate IDIQ contract. Each project phase, up to and including report preparation, will be accomplished as a task order under the IDIQ.

B. Scope, negotiate, and award IDIQ contract for conservation.

Tasks: Prepare scope of work, CBD notice, evaluation criteria, and estimate, review proposals and estimates, and award contract.

Lead(s): SAS archaeologist and SAS Contracting personnel.

Contributing Personnel: Other designated proposal reviewers, SAS administrative assistant, SAS supervisor, SAS OC

Discussion:

Artifacts will be recovered in three phases of fieldwork over a 9- to 12-month period. Artifact conservation must begin while the artifacts are being recovered. Waiting until all artifacts are recovered, inventorying them, and then scoping, negotiating, and awarding a contract is detrimental to the artifacts and is not ethical.

This IDIQ will not be a small business set aside. By setting up an IDIQ contract, a top-flight facility can be selected and artifacts can be transferred and conserved in lots using task orders. The 2003 St. Louis District study indicated that there are only a handful of large, quality conservation facilities, and only the *Hunley* facility was prepared and willing to take on a project of this size. Since that time, the East Carolina University facility has been enhanced and the *Monitor* facility at the Mariners Museum has been developed. East Carolina University has indicated that it would be willing to take on this project. The status of the facility at Mariners Museum is also being investigated.

C. Select curation facility.

Tasks: Identify curation facility, negotiate long-term agreement

Leads: SAS archaeologist, St. Louis District Center of Expertise for Curation

Contributing Personnel: SAS administrative staff

Discussion: There is no existing curation facility in Georgia or South Carolina capable of handling the massive, special-needs collection that will be generated by this project. The preferred curation alternative is to keep the collection in the same complex with the interpretation facility in Savannah, the city with which the vessel was associated. The Coastal Heritage Society (CHS) wishes to be the curation and major interpretive/display center. CHS interprets Savannah's Civil War naval history at two of its National Historic Landmark sites. Old Fort Jackson, the former headquarters of Savannah's Confederate Naval Squadron, is located across the river from the wreck and will probably serve as a staging and interpretive area during excavation. Savannah History Museum, in downtown Savannah, has an existing exhibit on Savannah's Confederate Navy and efforts to obstruct and defend the river. CHS has amassed over \$22 million in Federal, state, county, and city funds for the rehabilitation and restoration of

their third landmark property, the Central of Georgia Railroad Shops located next to the Savannah History Museum. Large exhibit spaces and a major, state-of-the-art curation facility are planned for this facility. The facility also has a historic connection to CSS *Georgia*. Workers from the Central of Georgia Railroad were contracted to assist in the vessel's construction and the railroad iron used in the vessel's armored casemate was purchased from the Central of Georgia Railroad. St. Louis District's Center of Expertise for archaeological curation will provide technical recommendations to CHS and will assist in preparation and execution of the curation agreement document.

D. Coordinate with US Coast Guard.

Tasks: Identify navigation and security needs and methods and procedures to address them.

Leads: SAS archaeologist

Contributing Personnel: SAS OP-N, Savannah Pilots, Georgia Ports Authority, other interested harbor users

Discussion: The work site is on the edge and partially within the Savannah Harbor Navigation Channel. At least one large barge will be anchored continuously on the edge of the channel for up to 1 year. Smaller barges and small craft will be working in the area during dive operations. US Coast Guard regulations and US Army Corps of Engineers Safety Manual will be reviewed to identify safe anchoring procedures, lighting, other markings, etc. During the 2003 dive operations, large vessel traffic was restricted to one way navigation while diving was conducted and a Notice to Mariners was issued requiring other harbor traffic to reduce speed during dive operations. With the exception of large vessel traffic associated with Savannah Harbor pilots, this notice was NOT effective. A more effective method needs to be identified. Since the work barge will be anchored in the harbor during the hurricane season, a hurricane evacuation plan will be required. Homeland security needs will also need to be addressed.

E. Coordinate with Savannah Pilots.

Tasks: Identify contact and coordination procedures and safe navigation procedures.

Leads: SAS archaeologist

Contributing Personnel: SAS OP-N, Georgia Ports Authority, US Coast Guard

Discussion: The work site is on the edge and partially within the navigation channel. During 2003 diver investigations, the dive boat was only anchored in the work area during actual dive operations and pilots were able to maintain a no passing zone in the project vicinity during these times. A plan will be developed for safe navigation for the anchored barge during dive and non-dive periods.

F. Prepare scope of work, negotiate, and award first task orders on IDIQ for data recovery.

Tasks: In consultation with the consulting and concurring parties, develop, negotiate, and award first task order.

Leads: SAS archaeologist

Contributing Personnel: GA SHPO, SC SHPO, GA State Archaeologist/Underwater Archaeologist, SC State Underwater Archaeologist, US Naval Historical Center, NPS Submerged Cultural Resources Unit, SAS geologist, SAS OP-N

Discussion: This will be Task Order 1 under the data recovery IDIQ contract and will require the development of the base plan for wreck recovery and a detailed scope of work for Task Order 2, the first excavation phase (site mapping, small finds recovery, identification of large finds and development of rigging/recovery plans).

G. Prepare scope of work, negotiate, and award first task order on IDIQ for conservation.

Tasks: Prepare scope of work, negotiate, and award first task order on IDIQ for conservation

Leads: SAS archaeologist

Contributing Personnel: Excavation IDIQ contractor, GA SHPO, SC SHPO, GA State Archaeologist/Underwater Archaeologist, SC State Underwater Archaeologist, US Naval Historical Center, NPS Submerged Cultural Resources Unit

Discussion: Task Order 1 will set up working and coordination procedures between the excavation contractor and conservation facility staff and direct the facility to create and maintain a local temporary facility where recovered materials can be stabilized and packaged for transport to the conservation facility. It will also initiate conservation at the main facility.

H. Execute real estate agreement for contractor's staging area, conservation triage facility, and interpretive facilities.

Tasks: Execute any real estate agreement with Coastal Heritage Society for property for contractor access, administrative office, storage facilities, and use of dock at Old Fort Jackson.

Leads: SAS RE and Georgia Department of Transportation

Contributing Personnel: SAS archaeologist

Discussion: Old Fort Jackson is located 600 feet from the wreck site. It is owned by the State of Georgia, but is under a long-term lease to the Coastal Heritage Society (CHS) which preserves and interprets it for the public benefit. The property has a dock, as well as an area that will

accommodate the contractors' field office, temporary storage buildings, and a temporary conservation facility. The contractor and Government will need to use the dock for both routine and emergency access to the wreck site. CHS is amenable to sub-leasing this area with a right of access for this project. If for some reason, the fort site is not available, alternate facilities to be considered may include the Corps of Engineers Depot on Hutchinson Island, a second barge anchored near the wreck site, or using a larger barge for excavation work.

I. Prepare UXO plan.

Tasks: Prepare UXO plan for identification, recovery, and disposal/inerting

Leads: SAS Safety Office, SAS EN-GH (Explosive Ordnance Specialist)

Contributing Personnel: SAS archaeologist, SAS OP-N (District Diver Coordinator)

Discussion: Live and inert ordnance is present and must be addressed during recovery, conservation, and curation phases. The UXO plan will include a description of each type of ordnance known to be on the vessel, as well as descriptions of other types of ordnance of the period that may have been stored aboard the vessel. The descriptions will include photographs and scale drawings showing diagnostic features for the type and, if of an explosive type, detailed descriptions and drawings of fuse mechanisms, powder chambers, powder, etc. The UXO plan will identify contractor procedures should ordnance be encountered. It will also include the identities, contact information, and notification procedures for the designated EOD dive team that will recover the ordnance and how the ordnance will be treated once recovered. While there is very little sediment on the site that could conceal ordnance, some pieces may be located under the two large pieces of casemate. Ordnance may also be located in the cannon barrels.

J. Prepare public involvement plan.

Tasks: Prepare public involvement plan identifying lead and supporting organizations, coordination procedures, timing of large media events, and types of media to be used.

Leads: SAS CCO, SAS archaeologist

Contributing Personnel: Coastal Heritage Society, Excavation Contractor, Conservation Contractor

Discussion: Public involvement will be a major component of the mitigation project. While all media events, educational interpretation, etc., will be subject to guidance, review, and approval of SAS CCO, much of the material (web site info, short-term exhibits, etc.) will be generated by the excavation and conservation contractors and, possibly, the Coastal Heritage Society. The plan will need to identify media and interpretive goals, as well as coordination and approval procedures. It will also identify major media event opportunities (project start up, large lifts,

etc.) and develop a potential list of interpretive themes and methods to be investigated at various sites (OFJ, Savannah History Museum, web, schools, etc.).

6. PROJECT CHALLENGES AND OPPORTUNITIES

The National Register listed ironclad CSS *Georgia* was built in Savannah in 1862 with funds raised by a Ladies Gunboat Association (Figure 5). She guarded the channel below Savannah and was a major reason why the city was not taken by sea. Confederate forces scuttled her in 1864 as Sherman's Union forces arrived at the end of their "March to the Sea." After a few minor salvage attempts, she was forgotten until she was relocated during a 1968 widening project.

Because the site is located in a 40-foot-deep, near-zero-visibility, high-current navigation area, diving is restricted to about 4-hours around low or high tide and presents many challenges. During the 2003 diving operations, tidal variation was approximately 9 feet. Due to the extreme tides, substantial currents existed over the site and the velocities at ebb flow were recorded in excess of 5 feet per second. On several occasions dives were aborted or shortened due to excessively strong or increasing currents.

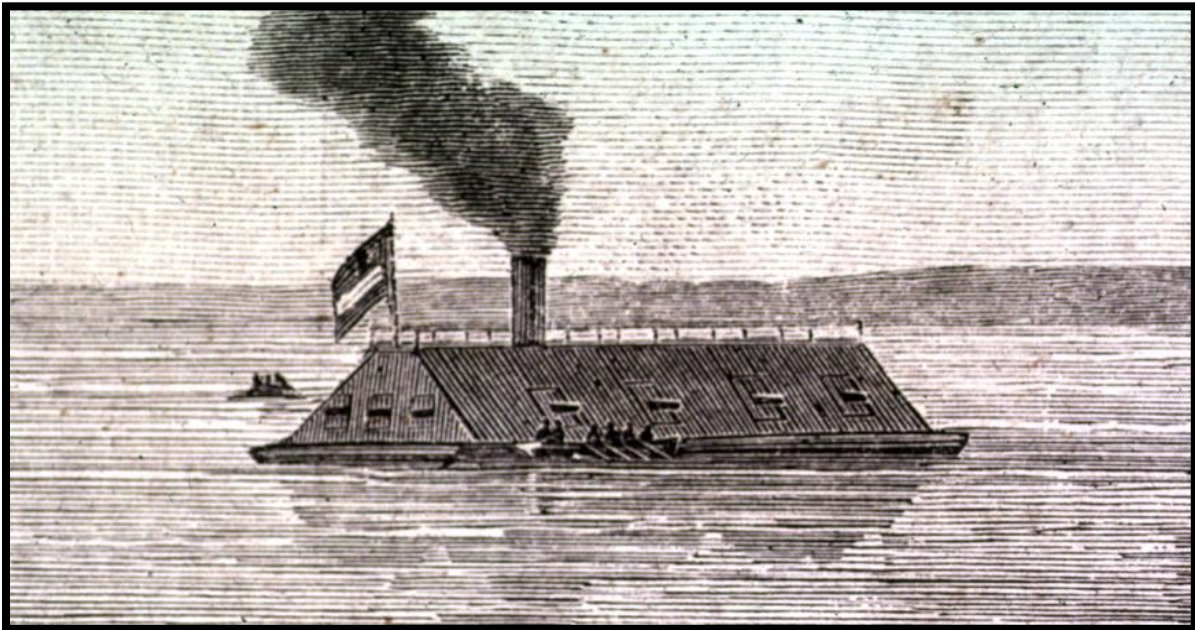


Figure 5. 1863 lithograph of CSS *Georgia* (as presented in *Frank Leslie's Illustrated Newspaper* February 21, 1863).

Work on the site is also constrained by visibility. During the 2003 investigations, divers noted that visibility ranged between 0 and 3 feet with a helmet or wrist-mounted light. Visibility was generally best on slack current or beginning incoming tides. Visibility often changed dramatically during a single dive, going from good to nonexistent in several minutes or vice versa.

Mapping in a near zero-visibility environment is a challenge. It is difficult to read a tape measure. In the past, divers have resorted to counting knots on a rope and other low-tech methods that produced maps of questionable accuracy. During the 2003 investigations divers attempted to use a short-baseline sonic positioning system in which a transponder sends locational data electronically to the surface to accurately plot on the site map. Unfortunately a number of problems were encountered with the system and more traditional methods of mapping were employed. Since that time, advances in technology may have occurred that should make mapping of the site easier and more accurate.

Very little information on the design and construction of CSS *Georgia* survives in either the historical or archaeological record, making accurate reconstruction of the vessel nearly impossible. Significant clues, however, are preserved in the surviving remains of the wreck. By using the data that will be gathered from the mitigation effort it will be possible to develop a reasonable reconstruction of the vessel, including the hull design. Previous investigations have already determined that while the condition of the site is a disappointment, it still has a major story to tell.

7. REFERENCES CITED

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