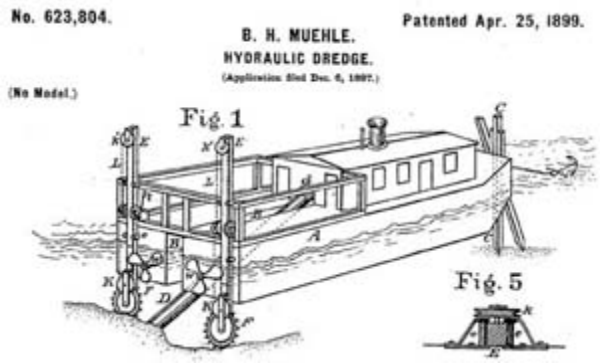
Transportation and Technology at the Beginning of Florida's Modern Era

At the dawn of the 20th century, America was establishing itself as an economic and imperialist power, bolstered by a seemingly endless series of modern technological advancements. The state of Florida was also undergoing significant changes, having seen its population increase 90% between 1860 and 1880 (Gannon 1993: 53), and the start of a building boom catering to the expanding consumer market and burgeoning numbers of recreational tourists. America's prominent role in global conflicts, first the Spanish-American War and subsequently World War I, raised concerns about the defense of expansive coastlines such as those in Florida. One of the problems facing both capitalist entrepreneurs and designers of coastal defense systems was the fact that Florida's inland forests and wetlands continued to be a serious impediment to communication and transportation. They turned to modern technology to address this issue.


No. 623,804. Patented Apr. 25, 1899.

B. H. MUEHLE.

HYDRAULIC DREDGE.

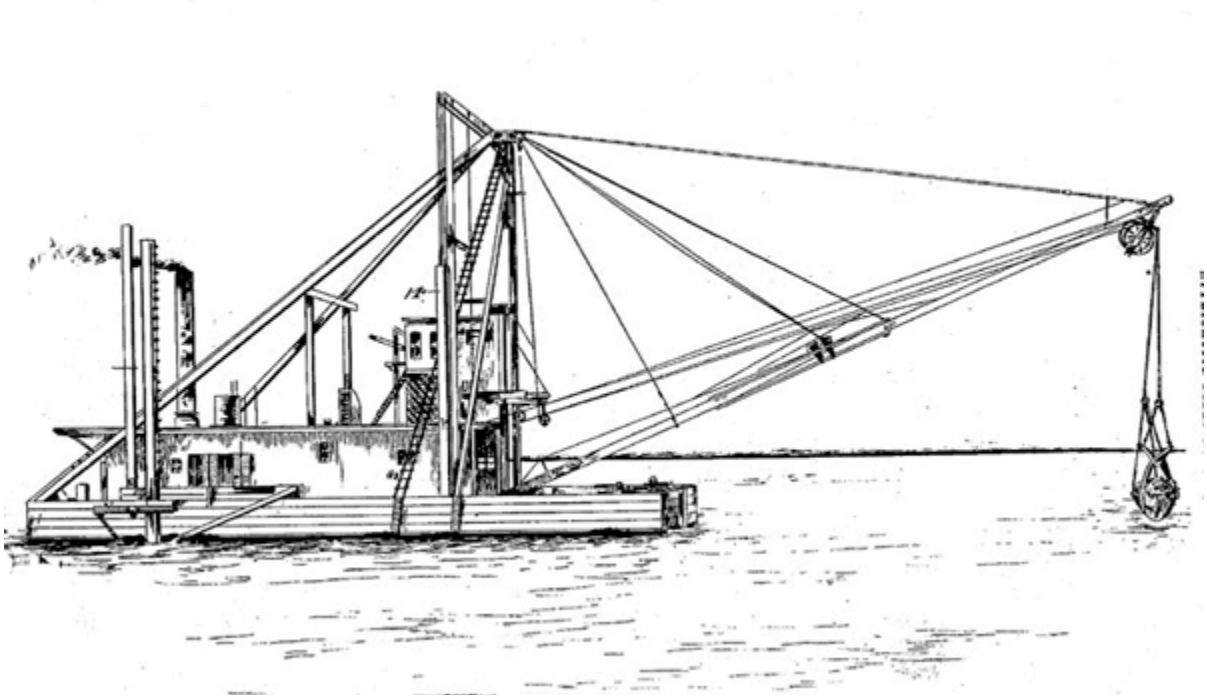
(No Model.)

Fig. 1

Fig. 5

Dredging technology developed rapidly during the latter half of the 19th century.

While railroad construction exploded in the last decades of the 19th century, improving inland waterborne transportation was also critical to Florida's rapidly growing economy and security concerns. As steam-powered riverboats became the most important means of transportation in the mid-1800s, the U.S. Army Corps of Engineers continuously labored to make Florida's waterways navigable and investigated options to connect them. Dredge vessels (known simply as "dredges") equipped with the latest engineering devices were employed to deepen channels, and snagboats were used to clear submerged tree trunks, wrecks, and other obstructions.



Design drawing of a "Dredger" invented by Raymond A. Perry from his U.S. patent documentation. While not a representation of the Florida itself, this patent was issued in April 1903, just one month before the Florida's construction contract was signed, and thus represents a typical dredging vessel of the time.

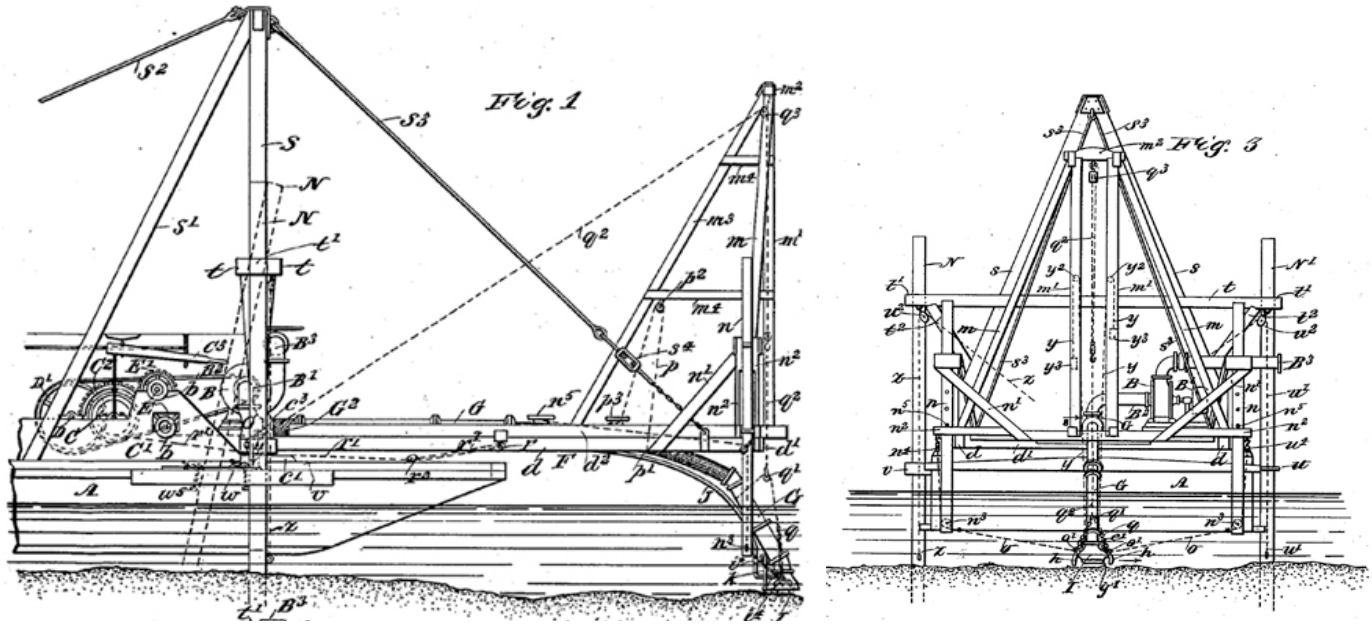
Design and Construction of the *Florida*

At the turn of the 20th Century it was clear to the U.S. Army Corps of Engineers' Florida District Office that a more modern and powerful dredge-snagboat combination was needed to clear Florida's inland waterways. The River & Harbor Act of 1899 appropriated $35,000 to build a dredge vessel for "river and harbor improvements on the coast of Florida and the waters tributary thereto" (USACE 1899a). It was soon apparent these funds were inadequate when the first round of bids were all too high. An additional $35,000 was appropriated in 1902 for the construction of a "steel hull, stern wheel, combined dredge and snagboat about 115 feet long, 28 feet beam and 7 feet depth, to be driven by a 200 H.P. engine, to be fitted with a 2 yard clamshell and 12-inch centrifugal pump, dredging machinery and snagging appliances adapted for use with dredging

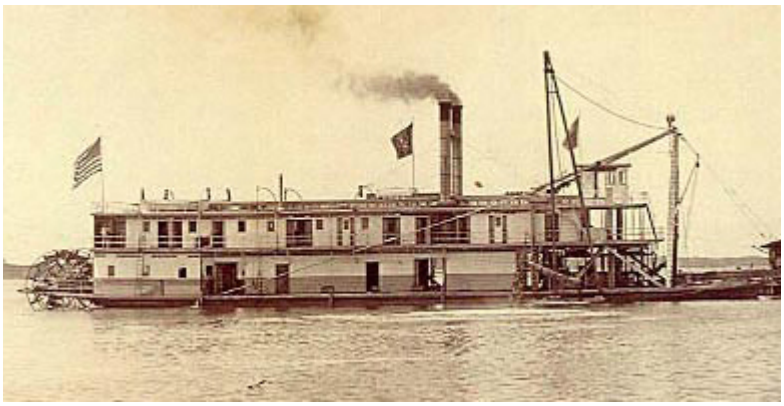
machinery" (USACE 1904). The winning bid was submitted by the Merrill-Stevens Engineering Company to build the dredge that would be christened *Florida*. A contract with this Jacksonville shipbuilding firm was signed on 20 May 1903, and approved on July 11.

John Warren Sackett, designer of the dredge *Florida*.

The *Florida* was designed by General John Warren Sackett, the U.S. Army Corps' Chief Assistant Engineer for the Florida District, to replace the Suwannee, a scow-modeled stern-wheeler dredge that had been in service since 1888 (USACE 1901). Sackett was a well-respected local citizen widely known for his military service in the Spanish-American war, his civil engineering work with the Corps, and for his inventions related to hydraulic dredging (Johnson 1909). Sackett used several of his own patented designs in the *Florida*, and also incorporated suggestions from the long-serving superintendent of the Suwannee, O.N. Bie (USACE 1899b).



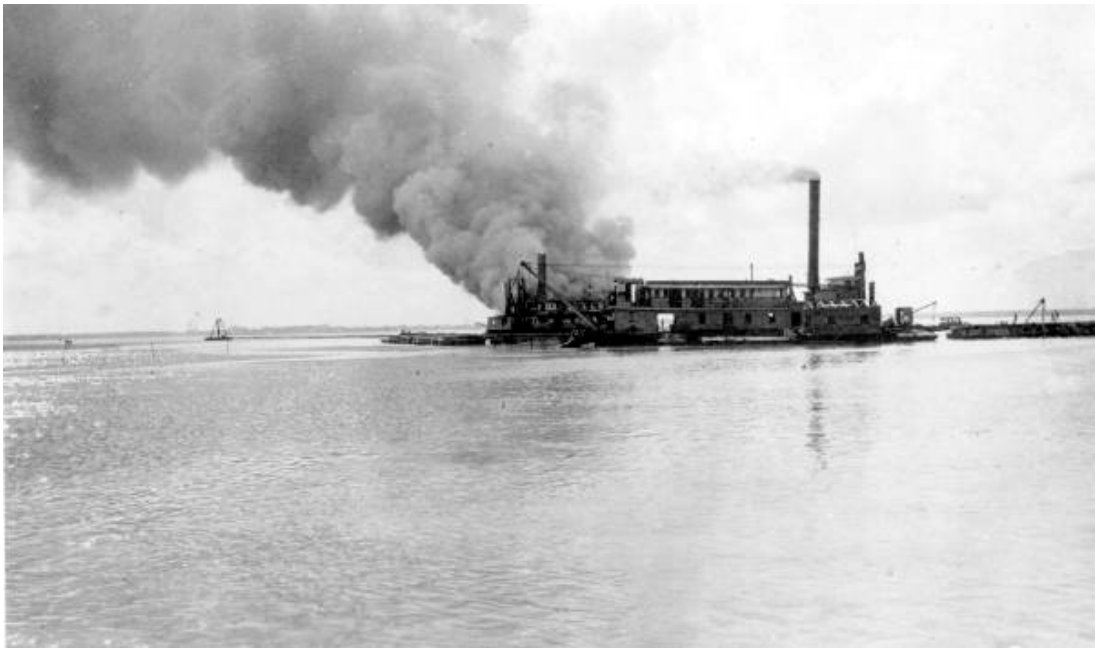
Side and front views of a "hydraulic dredging machine" designed by Sackett and patented on November 14, 1893. Many of the features on this vessel were probably incorporated into the design of the *Florida*.



Photograph of the dredge *Florida*.

When launched on 2 April 1904, the *Florida* was widely recognized as the most technologically advanced vessel of its kind (*Florida Times Union*11 March 1904). It featured 87 steel frames, 5 watertight bulkheads, 7 longitudinal bulkheads, 87 deck beams, 86 deck plates, 138 hull plates of 1 to 1 1/2 inch steel, and 66,841 rivets (*Florida Times Union* 5 July 1918). The 175-ton *Florida*measured 131 feet in length, 28 feet in breadth, and 7 feet of depth (USDCL 1906: 401). *Florida*was outfitted with two boilers, ice and electrical plants, a 12-inch centrifugal pump, and four 45-foot tall spuds for anchoring her to the river bottom. After testing in the St. Johns River (*Florida Times Union* 22 February 1905), *Florida* was delivered to the Jacksonville District on 27 March 1905, and started dredging at the Volusia bar the following month (USACE 1905).

For the next thirteen years the *Florida* proved her utility by maintaining channel depths and clearing obstructions on the Oklawaha, St. Johns, and Indian Rivers, on Dunns Creek and Lake Crescent, and at numerous inlets. The vessel had the capability to switch its machinery to perform either hydraulic dredging or snagging and clamshell dredging (USACE 1905). In 1908 she underwent a re-build, and increased to 152 feet in length and 29.9 feet in breadth (USDCL 1918: 503).



Dredge *Florida* at work in Miami Beach in 1915, seven years after her re-build.

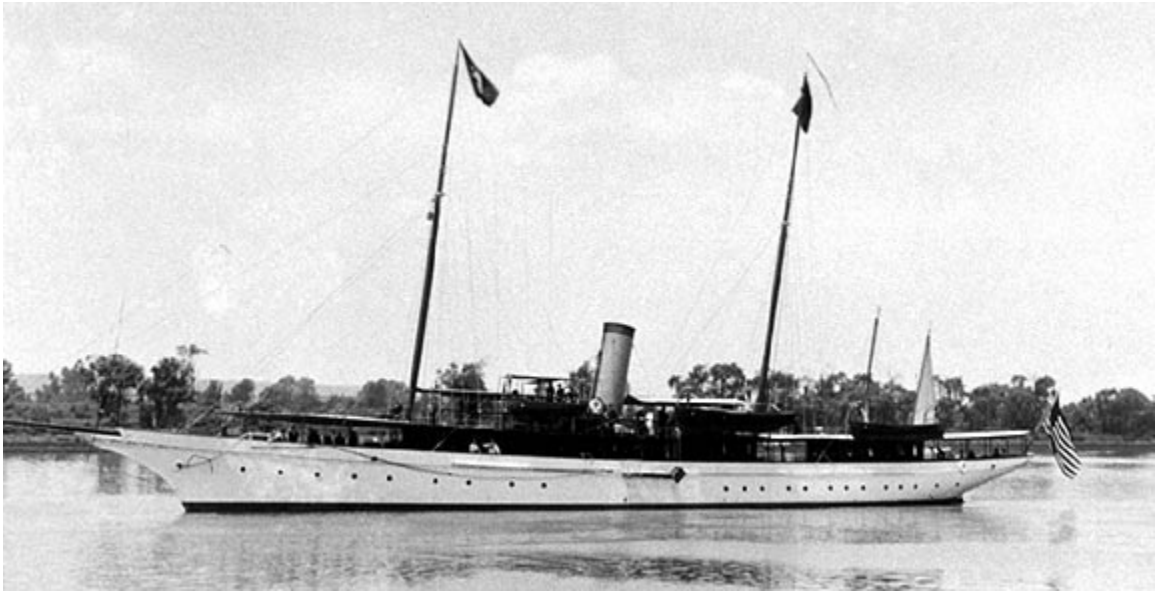
Loss of the *Florida*

In the spring of 1918 the *Florida* dredged portions of the East Coast Canal, now known as the Intracoastal Waterway, in the vicinity of St. Lucie to the south (USACE 1918 Volume 2). The state of Florida had suffered a long dry spell, and the extreme low water levels prevented the dredge *Florida*from taking the inland waterway back to northern part of the state. It was only by digging her way through the shoals that *Florida* made it to Palm City on 17 April, where she remained laid up until orders came through to depart for Jacksonville where she was needed by the U.S. Army's Quartermaster Department at Camp Joseph E. Johnston (USACE 1919 Volume 1:784). Drought conditions still rendered the East Coast Canal non-navigable, but as luck would have it the ship's original designer, now District Engineer Sackett, was on board to "keep himself familiar with the details of the work in his district" (*St. Augustine Evening Record* 5 July 1918). Though designed as a riverboat, Sackett and Captain Sharp believed the *Florida* could safely make the offshore Atlantic passage if modified to make her more seaworthy. After the installation of temporary bulkheads to raise her freeboard, *Florida* cruised out to sea and steamed northwards. But the *Florida* would never reach her next destination.

She encountered a fierce northeaster off Daytona Beach (*St. Augustine Evening Record* 5 July 1918). After battling the gale for over a day the temporary bulkheads gave way at the bow and the heavily listing *Florida* was quickly overwhelmed. The 13-man crew was ordered to abandon ship and *Florida* "sank like a plummet three minutes after the forward bulkhead had been stove in" on July 3rd off Crescent Beach, just south of St. Augustine (*Florida Times Union* 5 July 1918). Sackett and two crew members (including an African-American seaman listed variously as an oiler, waiter, or cook) drowned. Despite several days of beach patrols and a search of the wreckage by salvage divers, the bodies were never found, and the three victims were declared lost at sea (*St. Augustine Evening Record* 5, 8, 9, 10, and 13 July 1918).

Debris from the shipwreck began to wash ashore almost immediately between Crescent Beach and the Matanzas Inlet. Among the flotsom was furniture, a refrigerator still packed with provisions, the entire pilot house, and the cedar pay chest with the crew's payroll of $3,000 secure inside (*St. Augustine Evening Record* 6 July 1918).

The *Florida's* spuds protruded from the water and the wreck could be seen from shore. Salvage divers were deployed to search the wreckage for bodies and reported that the "hull and machinery are intact and as the surface conditions seem favorable, wrecking companies will probably be asked to submit bids for raising the craft (*St. Augustine Evening Record* 16 July 1918). No further information about any ensuing salvage operations is known at this time.



Steam yacht turned U.S. Coast & Geodetic Survey vessel *Isis*, wrecked in 1920 when it collided with the sunken *Florida*.

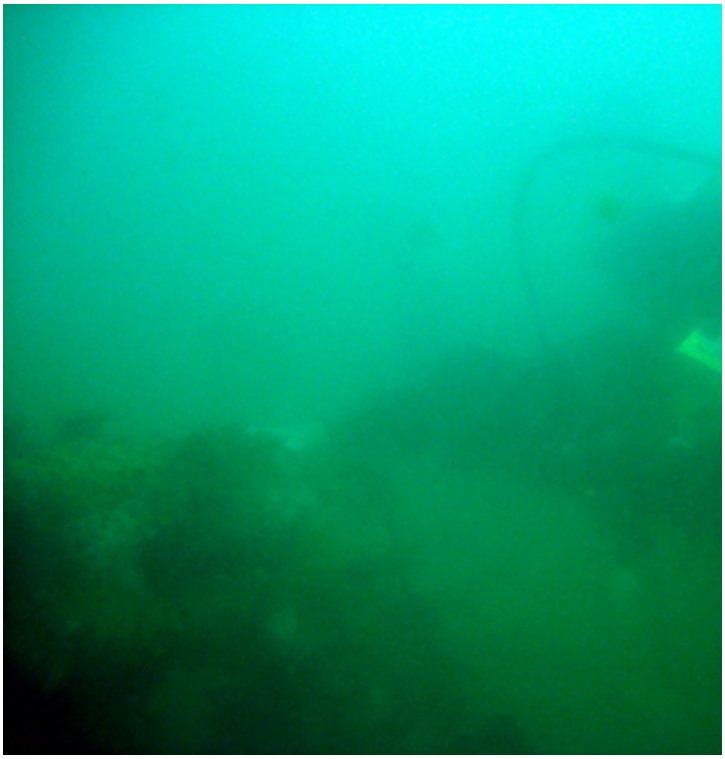
Second Shipwreck: the Loss of the *Isis*

A year and a half later, January 1920, the U.S. Coast & Geodetic Survey vessel *Isis* was taking soundings with the goal of marking the submerged *Florida* wreck as a navigational hazard. Ironically, the *Isis* struck the very wreck she was supposed to mark, opening a hole in her hull upon impact. Lieutenant Commander Luce immediately steamed towards shore in an effort to beach *Isis* in a desperate attempt to save her and the crew. He did succeed in preventing any loss of life, though the ship could not be re-floated despite subsequent salvage efforts. According to the *St. Augustine Evening Record* "a large number of tourists and automobile parties flocked down to Crescent Beach to watch a wrecking crew from the Merrill-Stevens Shipbuilding Company salvage the *Isis*" (16 January 1920) This was the same company who originally built the *Florida*. The U.S. revenue cutter *Yamacraw* also arrived on the scene to assist but a "strong gale with excessive rain broke up the USS *Isis*" before the salvage operation was completed." The Keeper of the St. Augustine Lighthouse recorded that the "wreck of the *Isis* [was] broken up and abandoned, only the mast visible" (USLHS 1920).

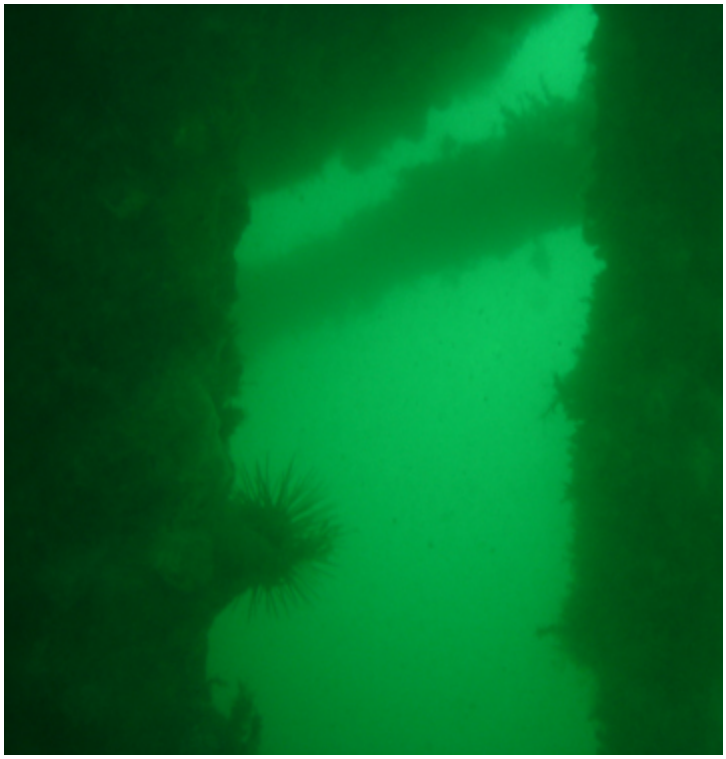
Discovery and Archaeological Investigation of the *Florida's* remains

LAMP archaeologists first learned about the *Florida* and the *Isis* through an entry in the St. Augustine Light Station Keepers' Log. In 2002 LAMP archaeologists set out to relocate the site of the *Florida* using a side scan sonar system. This device uses acoustic soundwaves to scan beneath the survey vessel and produce a bird's eye view of the seafloor. The tangled

mass of high-relief wreckage that characterizes the *Florida's* remains stood out like a sore thumb and it was not long before the researchers had pinpointed the exact location of the wreck, some 1.2 miles offshore Crescent Beach.

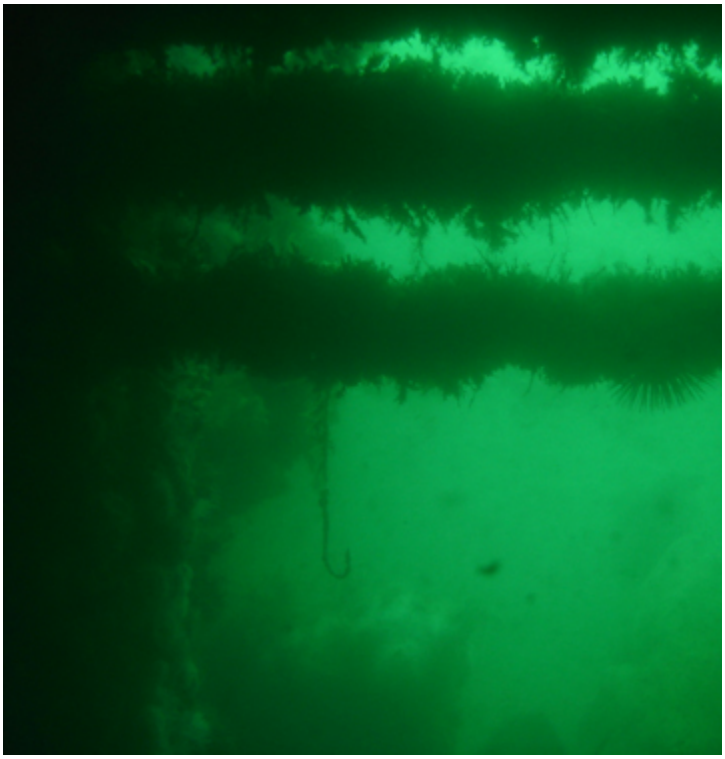


LAMP Director Chuck Meide inspecting the hull remains of *Florida*.



View from inside the wreck of the *Florida* looking out.

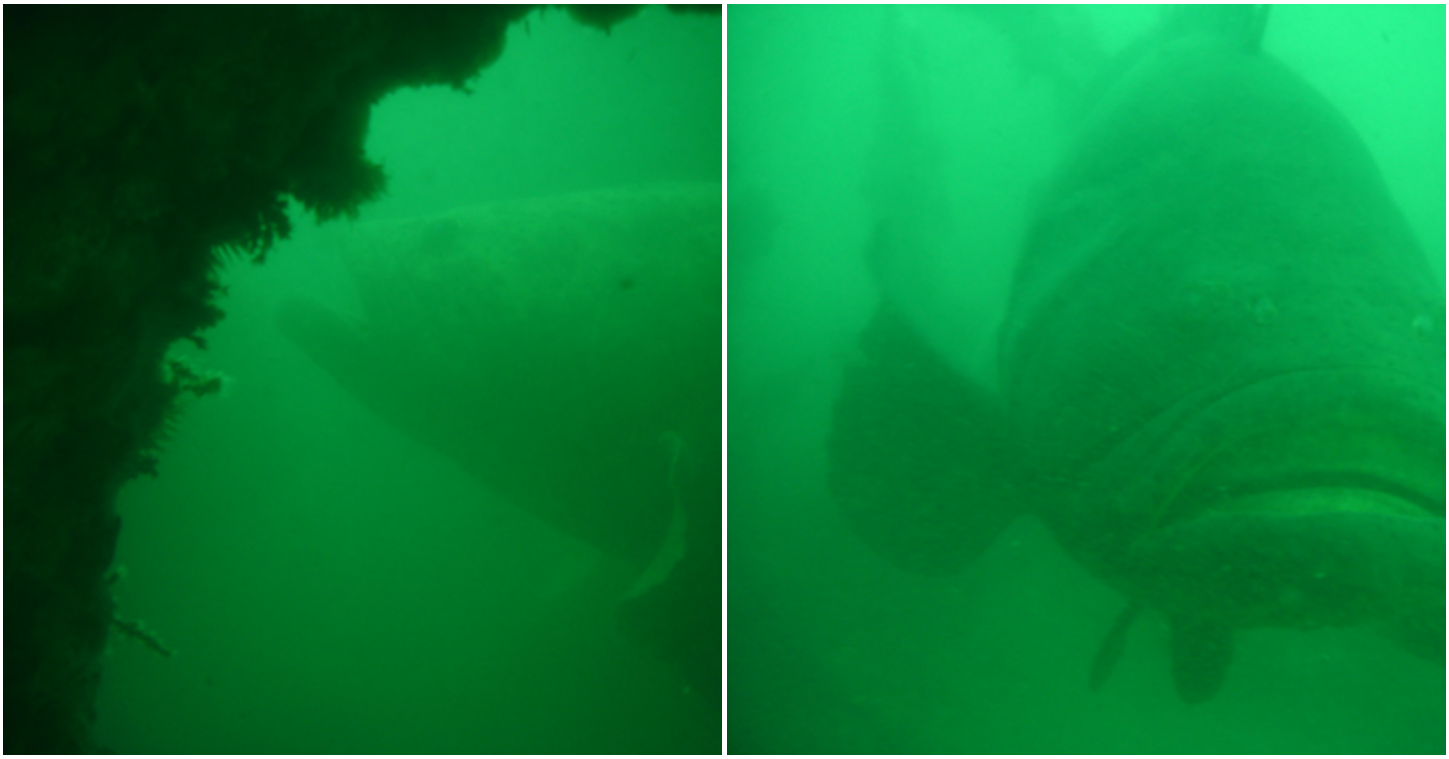
The wreck is relatively intact though there are large broken areas allowing access to the interior of the hull, and significant amounts of loose and semi-articulated wreckage scattered throughout the extant portion of the hull. The wreck is oriented roughly a north-south axis, and rises to as high as 15' from the seafloor in about 51' of water. Preliminary measurements indicate that the surviving length of the intact hull is 130', and that the width on deck is 29' 8" (compare these figures with its re-built dimensions of 152' long and 29.9' wide). Recognizable features include a partially buried lattice boom or jib from a crane, the collapsed A-frame assembly at the bow of the vessel, open deck hatches, piles of staved dredge pipe amidships, a large opening for the gallows, the clamshell bucket dredge, and the partially collapsed paddlewheel at the stern.



This wreck, with its sharp, jagged steel structure, snagged fish hooks and shrimp netting, typically limited visibility, and overhead environment, is no place for the novice diver.

Sheepshead swimming above exposed framing members.

Divers also could not help but notice the diverse array of marine life that has made this wreck their home. As is typical of artificial reefs in this area, the *Florida* hosts a wide range of fish life and also numerous encrustations of hard and soft corals and sponge growth. In addition to swirling schools of smaller fish, at least two nurse sharks and as many as three monstrous jewfish or Goliath groupers have been observed amid the wreckage. The latter fish, who tend to stay within the wreck but will venture out to gape at visiting humans, are especially impressive and they seem as curious about our divers as we are with them and the wreck itself.



As many as three enormous jewfish or Goliath groupers live amid the wreckage of the *Florida*.

LAMP divers returned to visit the site for a series of monitoring dives beginning in the summer of 2006. We continue to monitor this site periodically through the use of the side scan sonar or by diving to inspect it in person. To date archaeologists have not observed any obvious signs of looting or damage from natural or man-made causes.

Because of the relatively intact nature of this wreck, its positive identification as the *Florida*, its importance to local, regional, and state history, and its abundance of marine life, it appears that this wreck would make an ideal candidate for nomination to the state of Florida's Underwater Archaeology Preserves system. One possible drawback is that water visibility here is often poor, in many cases so poor as to be considered a dangerous dive for inexperienced divers, especially considering that it would be easy for such divers to accidentally wander into an overhead environment. But there are no alternative sites offshore northeast Florida in state waters with decent visibility, and there is at least one other such Preserve (the City of Hawkinsville steamboat) with poor visibility that is marketed for advanced divers. It therefore seems worthy to move forward with this designation as a goal. In order to make this a reality, future plans for the *Florida* site include a detailed recording of the exposed hull remains in order to produce an accurate map of the site. Because of the extent and condition of the wreck and the frequent periods of poor visibility, this will likely be a challenging and multi-year effort. But this remains an important task for better managing the site and further interpretation of its history, and the first step forward towards the noteworthy goal of making this site accessible to recreational divers while protecting its archaeological and biological integrity.

It should be noted that as this vessel was owned by a division of the U.S. military, the U.S. Army Corps of Engineers, at the time of its loss, that it remains property of the U.S. Army Corps of Engineers. Even though it may appear to be an abandoned vessel, it remains the custody of the United States government and that ownership is recognized by the U.S. Constitution and international maritime law. This means that this shipwreck is under the protection of the U.S. Army Corps of Engineers, as prescribed by the National Historic Preservation Act. While it is not illegal to dive on this wreck, it is illegal and punishable by law to disturb the shipwreck site in any way (including digging into the sediment around the wreck), or to remove any object from the shipwreck or its immediate vicinity. If you ever dive on this wreck, or any historic shipwreck, take only photographs, and leave only bubbles.

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1899b Letter from the U.S. Army Corps of Engineers, Jacksonville District, to O.N. Bie. On file at the St. Augustine Lighthouse & Museum Archives, St. Augustine, Florida.
1901 *Report of the Chief of Engineers*. Washington, D.C.
1904 *Report of Operations for the Month of March 1904*. Jacksonville, Florida.
1905 *Report of Operations for the Month of June 1905*. Jacksonville, Florida.
1918 *Report of the Chief of Engineers*. Washington, D.C.
1919 *Report of the Chief of Engineers*. Washington, D.C.

U.S. Department of Commerce and Labor (USDCL)
1906 *Merchant Vessels of the United States: Year Ended June 30, 1906*. Government Printing Office, Washington, D.C.
1918 *Merchant Vessels of the United States: Year Ended June 30, 1918*. Government Printing Office, Washington, D.C.

U.S. Lighthouse Service (USLHS)
1920 St. Augustine Light Station Keeper's Log, 3 February. On file at the St. Augustine Lighthouse & Museum archives.

Links of Interest

Photo Gallery Blog Video Gallery Blog

Copy of the 1893 patent awarded to *Florida* designer J.W. Sackett for his "Hydraulic Dredging Machine"

People Associated with *Florida* and *Isis*, with a biography of John William Sackett