

Dog and St. George Islands Shipwreck Survey

Report of Field Operations:

March through July 2001



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Introduction

The Dog and St. George Islands Shipwreck Survey (DSGISS) is an ongoing underwater archaeological research project conducted by the Florida State University (FSU) Department of Anthropology's Program in Underwater Archaeology (PUA). This research was conducted under archaeological permits from the Bureau of Archaeological Research, Florida Department of State, and the Florida State Park System. Dredge and Fill permits were issued by the Department of Environmental Protection and the Army Corps of Engineers. Funding was provided by a Survey and Planning grant from the Division of Historical Resources for the 2001 field season. Three weeks of fieldwork took place during May 2001. Six-weeks of intensive fieldwork and interim report writing took place from June 25 through August 3, 2001.

The discovery and identification of historic submerged cultural resources in Apalachicola Bay and Apalachee Bay, Florida are the goals of this research. The 2001 research activities focused on two locations: Ballast Cove, a small natural cove located on Dog Island's bayside and eastern St. George Island including the Bay and Gulf sides of the island. The St. George Island research also included a metal detector survey around Marsh Island behind greater St. George Island as well as preliminary investigations of a wooden barrel discovered by Brian and Emily Yates in May.

As in 1998, 1999 and 2000, the 2001 research project was part of the FSU-PUA Field School in Underwater Archaeology (ANT 4135 and 5193). This field school is designed to provide students with a variety of archaeological experiences dealing with submerged prehistoric sites and historic shipwrecks. A total of 12 staff, 9 students and two volunteer crewmembers and archaeologists participated in the six week long field session, based from the FSU Marine Laboratory at Turkey Point in Franklin County, Florida.

The DSGISS 2001 project consisted of two operations utilizing various methods of archaeological investigation. Fieldwork in Ballast Cove, Dog Island, involved testing, excavation and mapping of a shipwreck designated as Ballast Cove Wreck A (8FR903) as well as diver visual surveys of side scan sonar targets obtained in April 2001. Three and a half weeks of fieldwork were dedicated to this site in order to introduce students to the methodologies used to map and record a shipwreck site. Three weeks in May and two weeks during the July field school focused on the search for the remains of HMS *Fox* around the waters of St. George Island. These surveys utilized a marine magnetometer, sub-bottom profiler, side scan sonar and divers with hand-held metal detectors to investigate recorded anomalies.

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Environmental Background

Dog and St. George Islands are two barrier islands located in Apalachicola Bay. As sea levels subsided, these islands formed between 3,500 and 6,500 years ago, around deposited sediments from nearby rivers such as the Carrabelle and Apalachicola Rivers (White et al. 1995). The morphology of these islands is constantly changing due to wind and wave action. Four barrier islands off Apalachicola comprise this system. The islands, from west to east, consist of St. Vincent Island, Little St. George Island, St. George Island and Dog Island. The largest island, St. George Island, extends for approximately 28 miles in a northeast-southwest orientation. Dog Island, on the other hand, is approximately seven miles long (Figure 1).

The ecosystems of St. George and Dog Island typically contain sand dunes, dune ridges, saltwater and freshwater marshes, numerous grass species, beaches, and hardwood flats (Meide et al. 2001; Damour and Horrell 2001). Numerous species of flora and fauna inhabit the islands including seasonal nesting of sea turtles and birds. Protected floral species, such as sea oats, are abundant along the dunes of St. George and Dog Islands.

Barrier Island Formation

Holocene barrier islands, such as those formed in the Floridian northeastern Gulf of Mexico, developed near major rivers systems around 5,000 years B.P. when the sea level was two to four meters lower than present (Oertel 1979:285). Sediments originating from the Appalachian Piedmont flowed down major rivers such as the Apalachicola River in Franklin County (Schnable and Goodell 1968:18). Sediments were supplied by river “distributaries” and retreating Holocene shorelines (Oertel 1979:285-286). The continental shelf, in this region, is covered by a thin layer of unconsolidated sand (Schade 1985:5). Mostly sand-sized sediments flowed from the Apalachicola River and deposited on the river delta. Fine-grained sediments were transported eastward by longshore currents (Schade 1985:9).

Barrier islands form with bay sediments on one side and marine sediments on the other (Shepard 1960:214). This indicates a clustering effect of sediments from both riverine and offshore marine deposits that are “trapped” to form semi-consolidated bodies. These bodies, in turn, provide a structure for further sediment accretion from wave action to anchor to. Stapor added that shoal emergence might play a role in barrier island formation (Stapor et al 1988:149). Once the basic structure has emerged, vertical and horizontal accretion of sediments from wind and wave processes occur.

Once relatively consolidated into an emerging island, barriers are continually modified by sea levels, wind and wave action, through erosion and redeposition of sediments. Loss of sediment is determined by the location of wave action intensity. Barrier islands “respond quickly (in a geological sense) to changes in sea-level” (Carter 1988:170). Higher sea levels bring eroded offshore sediments toward shore for future deposition while lower sea levels expose sediment sources offshore to erosion processes (Davis 1994:170; Stapor 1973:155). Schnable and Goodell add that the sands of barrier islands and offshore shoals were likely supplied during lower sea levels (Schnable and Goodell 1968:19).

Barrier island morphology is continually changing due to other factors such as storms. Inlets form either by human modification or by natural processes, such as where storms push surge water through the island’s unconsolidated sediments. Inlets typically form due to storm surge

concentrating its energy in a small area and overtopping the island toward lagoon waters (Pierce 1970:230). These inlets then act as “magnets” for sediment accumulation from wave action (Carter 1988:176). Based upon the intensity of wave action near inlets, sediments can be “captured” within the inlet causing its eventual choking-up or closure (Carter 1988:176).

Wind plays a significant role in barrier island development and evolution. Aeolian processes form and modify sand dunes on barrier islands (Armon 1979:66). Dunes generally form on top of beach ridges (Stapor 1973:117). Beach ridges develop from a “continuously changing (unidirectional) angle of wave refraction, possible only at termini facing relatively deep and open water” (Stapor 1973:117). Beach ridges indicate the direction of island lateral extension or net seaward growth as they form parallel to shore (Stapor 1973:117). When a barrier island contains dunes that are readily mobile or lack stabilizing vegetation, the occurrence of washovers and inlets can increase and change wave action and sediment accumulation. With little structure from dunes to anchor sediments to, islands can succumb to rapid erosion and dispersal of sediments subject to wave and tide intensity. Dunes provide an integral structure for barrier island formation and evolution.

St. George and Dog Islands

Barrier islands typically form on a low gradient plain or shelf, with an adequate supply of sediments and a low to moderate tidal range (Walker and Coleman 1987:87). The continental shelf in the Gulf of Mexico offers an ideal gradient for barrier island formation. St. George Island is approximately 28 miles long, and less than one mile wide with concave and convex seaward stretches. Dog Island, conversely, is only approximately seven miles long, and less than one mile wide with a convex seaward stretch (Schnable and Goodell 1968:5). The primary source of sediments for their development is probably the Pleistocene Apalachicola River delta, which expands for 13 kilometers (Spicola 1984:10; Schade 1985:8). Offshore sediment supplies from longshore drift cells, pockets of sand that shift, created a “closed system” of sediment transportation (Stapor 1973). The emergence of shoals, due to falling sea levels combined with eroded sediments from both riverine and marine sources, may have formed the base structure of these barrier islands (Spicola 1984:109).

St. George Island may have originated as two emerging shoals that captured a small island and formed the base structure for sediments to build upon. At almost 4,000 years before present, “Gap Island Shoal” and Cape St. George Shoal emerged due to dropping sea levels (Schade 1985:159). These shoals acted as sediment magnets while beach ridge development occurred. Wave patterns and tidal currents focused accretion of sediments from offshore on to these two shoals, which spread toward each other through erosion and deposition around 2,000 years B.P. (Schade 1985:159). Dune sands were reworked and the developing islands eventually integrated around 1,000 years B.P. Longshore currents probably transported the sediments needed for growth along with aeolian, wave processes and tidal fluctuations (Spicola 1984:109). Beach ridges formed as sediments were deposited on shore and sea levels fell (Spicola 1984:112). On these ridges, sand dunes formed which were modified by wind as well as storm surge.

Tidal currents are intimately involved with the morphology of St. George and Dog Islands. Between St. George and Dog Islands lies East Pass, a tidal inlet that is maintained through a narrow constriction, which creates strong currents (Spicola 1984:9). These currents continuously scour the channel bottom and prevent a build-up of large quantities of sediments. The counter-clockwise currents bring a strong flood tide into East Pass while West Pass receives the ebb tidal currents and the Apalachicola River outflow (Schade 1985:4). Tidal and longshore currents also create a “sawtooth” effect on the islands’ shorelines to pull sediments away from the central Gulf side and redeposit these sediments on the eastern and western extremities (Schade 1985:24). St. George and the other islands have likely undergone periods of inlet opening and cutting due to storms and wave surges. Historic maps from 1769 and 1853 depict the islands with breaches due to hurricanes and other forces (Meide et al. 2001). Numerous relict washover features demonstrate how

surge has affected the evolution of these islands. Repetitive inundation and emergence of these islands has also occurred in the last few millennia. Two distinct archaeological occupations of St. Vincent Island, west of St. George, are separated by a period of inundation, as evident in a shell midden. The early occupation dated to 1,300 years B.P. and was terminated by a rising sea level. The second period of human occupation dated to 1,000 years B.P., indicated by ceramics lying directly on lagoonal muds (Donoghue and White 1995:655).

Erosion of sediments from the Gulf shoreline with subsequent redeposition at the eastern and western extremities indicates how dynamic this environment is and what role environmental factors such as wind, waves and tides play in barrier island evolution and migration. The eastern tip of St. George Island is actively prograding and has grown over one kilometer in length since 1873 (Schade 1985:164). Both islands exhibit a slow migration toward land with simultaneous stretching out at the ends.

Historic maps, sediment transport measurements, and aerial photography indicate barrier island evolution and migration. Changes in morphology within a few centuries are evident by historic structure remains known to have been located on one side of the island that now appear on the other. The Dog Island Lighthouse was constructed on the Bay side in 1839 but was relocated during archaeological survey in 1999 over 160 meters south of the Gulf side shore (Meide et al. 2001). In over 250 years, Dog Island moved completely around the lighthouse remains.

These changes occurring on St. George and Dog Islands are readily apparent by comparing historic maps of the region since the 18th century (Florida DEP 2000). Repetitive emergence, inundation and migration of these barrier islands from fluctuating sea levels have provided archaeologists and geologists with numerous avenues of research to pursue. The accretion of sediments on the eastern tip of St. George Island demonstrates how dynamic this environment is but allows archaeologists to estimate how this island and others may have changed throughout history (Faught and Damour 2001).



Figure 1. Apalachicola Bay barrier islands in Franklin County, Florida.

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Maritime History of Franklin County, Florida
By William Hoffman

The physical impact of past human behavior on the terrestrial landscape is often readily observed, while the underwater traces of this behavior are easily missed or overlooked. However, the waters around Dog and St. George Islands reflect a long history of maritime activity including: 17th and 18th century Spanish, French and British colonial and merchant vessels, the rise and decline of local 19th and 20th century urban centers, cotton, lumber and naval stores industries, a Civil War naval blockade, World War II Naval training, the contemporary fishing industry and more. This diverse archaeological record offers potential for exploring the global nature of world society within the region of Apalachicola, Florida.

Archaeological research conducted on Dog and St. George Islands has provided a valuable inventory of maritime cultural resources. Since the Dog and St. George Islands Shipwreck Survey (DSGISS) is a prolonged research effort, we are afforded the benefit of applying this data to problem oriented research along with the description of these maritime resources. As more data is gathered, it allows us the ability to conceptualize each wreck or site not just as an isolated event, but rather as a component of larger natural and cultural processes within a complex region. This will act as our point of departure as we continue to understand the archaeological resources that are known in the area and as we begin to consider ways of dealing with new sites.

As Lenihan remarks (1983: 49) “ships do not sail in a cultural vacuum.” Keith Muckelroy (1978) introduced this idea as he proposed a theoretical framework that included analyzing shipwrecks as components within larger military or economic systems. Dog Island and the surrounding region offers potential for understanding how shipwrecks and maritime infrastructure can be viewed as extensions of land based economic processes. Ships are the vehicles of globalization that accompanied the expansion of European countries into the New World. Shipwrecks have the potential to offer a view into the interconnectedness of the European world system that, beginning in the 16th century, emerged through the global spread of material culture, people and ideas. Immanuel Wallerstein discussed a global division of labor into cores and peripheries. Core areas occupy a position of political and economic power and use sophisticated technologies, such as ships, to import commodities from periphery areas. This division is driven by the desire to open new markets for manufactured goods and to gain access to exploitable resources of labor and raw materials. Ships are part of the linkages that keep core and periphery areas economically and politically interdependent within a social system that extends beyond individual states and nations. The underwater cultural resources of Franklin County, Florida have the potential to offer insight into these broader economic processes. The study of potential shipwrecks in this area, such as *Le Tigre* (1766), a French merchant brig, and HMS *Fox* (1799), a British military schooner, could shed light on cultural interactions and social significance related to the production, distribution and consumption of material goods.

The region around Dog and St. George Islands has been shaped by international, national and local phenomenon. While the intersection of these forces allows for an understanding of larger global systems, the potential also exists for studying the effects of these systems on a local area. The shipwrecks around Dog and St. George Islands offer insight into the development of local urban areas and the economic forces that influenced these settlement patterns. The nature of interaction between core and periphery regions and the movement of material culture, people and ideas shaped the rise and decline of urban areas around Apalachicola Bay. The effects of political economy on a local region determine where and why cities will develop. According to Braudel,

“capitalism and towns were basically the same thing,” meaning that economic forces influence settlement patterns and the ways that societies are organized (Braudel 1981:19). The growing sample size and the regional focus of the DSGISS offers the potential for understanding the role of ships within an economic system and their influence on shaping settlement patterns. Since European contact in the New World, economic forces have reshaped conceptualizations of time, space, wealth and the movement of goods and ideas. Underwater archaeology has the potential to shed light on these changes and to add valuable knowledge to an aspect of economic processes and their greater cultural importance within a local region.

Prehistory through the 17th Century

In 1967, a prehistoric dugout canoe was located by local residents along the bayside of Dog Island. The dugout dates to 776 calibrated radiocarbon years AD, which places it within the Late Woodland cultural period. Other prehistoric sites on Dog Island have been investigated by Nancy White, of the University of South Florida, during a 1995 survey for the Barrier Island Trust (White et al. 1995). These and other sites illustrate prehistoric adaptations on Dog Island, however, this current research has focused solely on the historical cultural resources of the region.

The earliest European presence in the area is unknown. Early Spanish conquistadors such as Narváez in 1528 and De Soto in 1539 may have passed through this area during their explorations into La Florida, however no direct evidence attests to this. Dog and St. George Islands lie north of the route of the Spanish *flota* system that regulated mercantile traffic and the distribution of material wealth in and out of the circum-Caribbean colonies. One Spanish galleon, *Santa Ana María Juncal*, reportedly wrecked in the region in 1611. This vessel enticed treasure hunter Mel Fisher to the area in 1994, who was unsuccessful in locating the wreck. Dog Island maintained a marginal location within the Spanish mission system that spread across Florida into the Apalachee region. Over time, the northwestern region of the Gulf of Mexico grew in importance to the Spanish who relied on its waters to transport goods between the capital of St. Augustine and the outlying western missions. These waters also linked the New World colonies and Seville, the Spanish capital of import and export. The 17th century saw the presence of English and French privateers encroaching on Spanish territory. The emergence of Dog and St. George Islands on French and English maps during the late 17th and 18th century attests to the growing economic importance of this region within the European mental geography as core nations rivaled for control over periphery areas and the trade routes that linked them.

The 18th Century

Two historically significant shipwrecks, *Le Tigre*, wrecked in 1766, and HMS *Fox*, wrecked in 1799, have been the focus of the Dog and St. George Islands Shipwreck Survey. These ships reportedly wrecked within the region of the islands, although neither has been located. Systematic archaeological survey for HMS *Fox* began in the early 1980s. David Brewer, in 1980, first implemented a terrestrial magnetometer survey on the eastern tip of St. George. This was then followed by a marine magnetometer survey along the Gulf side of the island (Brewer and Paul 1980; Brewer 1982). Magnetic anomalies were recorded, however, no cultural materials were observed. Beyond their significance to the history of the local area, these ships offer potential for understanding the relationship between the movement of ships and material culture and the social significance of this human interaction. These ships illustrate a local manifestation of economic competition among core nations in conflict for political hegemony of a world system.

Le Tigre was a French brigantine carrying merchandise from Haiti to New Orleans that was caught in a storm in the Gulf of Mexico. The ship attempted to make safe harbor in Pensacola Bay, however, due to contrary winds this port was inaccessible. Instead, *Le Tigre* tried to reach the Apalachee coast where it reportedly ran aground on an offshore reef. This reef may be the

Dog Island barrier reef and the ship may have come to rest just east of Dog Island. The wrecking event of *Le Tigre* was recorded in a narrative by Pierre Viaud, a merchant passenger on the vessel, which was published in 1768 (Fabel 1990; Meide et al. 2001). This account has been used as a starting point to roughly determine potential areas of survey for the wreck. This ship was possibly carrying manufactured goods and rum to New Orleans where it would have then been loaded with indigo and tobacco for shipment back to Europe.

The wrecking of HMS *Fox* offers a view into the complex nature of European conflict for the right to extract materials from periphery areas and the effect of this on the relationships between local populations. Through the Treaty of Versailles in 1782, Florida was returned to Spain from its previous British control. Despite this, the English maintained a stronghold on the economy of the area. The insertion of English trade goods into the local Native American economy continued through such established English trading firms as Panton, Leslie and Company and their rival Miller, Bonnamy and Company (Wright 1967). William Augustus Bowles represented the trading firm Miller, Bonnamy and Company and their economic interests in the area. Bowles declared himself Director-General of the Creek Nation of Muskogee, drawing local Native Americans into the complex interaction between British and Spanish interests on the lands in the New World. The schooner *Fox*, transporting Bowles and his companions, reportedly wrecked off eastern St. George Island as recorded by the American surveyor Andrew Ellicott. HMS *Fox* represents the interplay between rival English trading firms and their use of indigenous alliances to further their economic gain.

The 19th Century

The 19th century saw a shift from an extractive economy to an exploitive economy that accompanied the rise of Apalachicola and Carrabelle. These areas developed as centers, or cores, in and of themselves. Rather than the target of intermittent trans-Atlantic voyages by European nations who extracted materials and returned to their homeports, Apalachicola and Carrabelle became areas where Americans settled to exploit the surrounding resources. These commerce-oriented ports tied northwestern Florida into the larger economic systems of the United States and Europe and their success fluctuated with the changes in these broader arenas. These urban areas depended on ships to connect them to the rest of the world, and these cities grew as centers of trade where people lived and worked. Antebellum Apalachicola thrived as a center of maritime trade exporting cotton and naval stores to international and domestic ports. Apalachicola emerged as the third largest port along the Gulf coast behind New Orleans and Mobile. Ships plied these waters exporting cotton to major ports such as New York or Boston, where the cotton cargo would continue on to trading ports in Europe. These ships would then return from Europe with goods such as salt, sugar wine and other foodstuff. The increased maritime traffic and economic importance of this area was manifested in the need for a lighthouse to mark the eastern entrance into Apalachicola bay. This lighthouse was constructed in 1839 and later destroyed, during a hurricane, in 1873. The site was located and examined during the 1999 field season. It consists of a scatter of large sections of articulated brick masonry over an area approximately 23 by 14 meters. These brick sections extend up to 3 meters off the seafloor (Meide et al. 2001).

Late 19th century maritime commerce centered on Post civil war Carrabelle through the expanding lumber and fishing industries. This industry shift from the cotton exporting of Apalachicola to the lumber and fishing exploitation of Carrabelle brought about a change in the number, nationality and nature of ships traveling in the region around Dog and St. George Islands. Two known wrecks exemplify the presence of these industries in the local area. Dog Island wreck #1 is possibly the fishing smack *Priscilla*, which wrecked in 1914. This wreck was initially inspected in 1987 by R. Haiduven, K.C. Smith, D. Muncher, J. Nolin and A. Nolin (Meide et al. 2001). The site was again re-visited and assessed by Nancy White in 1995 (White et al. 1995). Further documentation of the site occurred during the Dog Island Shipwreck survey 1999 field season. This wreck lies in the surf zone along the Gulf shore and is partially exposed at

low tide. The hull is approximately 23 meters long with a beam of 6 meters. The bow of the hull is well preserved with about seven strakes of hull planking still intact. The hull was fastened with iron spikes and wooden treenails (Meide et al. 2001).

Dog Island wreck #2 may be the three-masted Norwegian lumber bark *Vale* that wrecked during the hurricane of August 1, 1899. This hurricane stranded a total of nine merchant ships from the United States, Norway, Russia and Italy on the shores of Dog Island. In 1990, Chip Wright, a Florida State University student, conducted an investigation of the site that included mapping surface remains (Meide et al. 2001). The site was revisited by Nancy White in 1995 (White et al. 1995). *Vale* was investigated and mapped during the Dog Island Shipwreck Survey 1999 field season (Meide et al. 2001). The wreck lies on the inshore side of the island with its bow oriented north towards land. The hull is approximately 41 meters long with a beam of approximately 10 meters. *Vale* was composite built with wooden hull planking and frames and iron knees. The presence of *Vale* and the potential for locating other lumber and merchant ships wrecked in a single event presents a unique opportunity for comparative study between contemporary international ships and cargoes. In addition, the 1899 wrecking event is well documented, offering a parallel source of evidence to be used along with the archaeological record (Meide et al. 2001).

To conclude, the Dog and St. George Islands Shipwreck Survey and the research efforts preceding it have explored the diverse maritime resources of the Franklin County region. This research effort has recorded archaeological sites of prehistoric maritime adaptations and 19th century maritime commerce. It also offers historical documentation relating to the study and possible location of 18th century historically significant wrecks. This data has potential for application in understanding the relationship between economic systems, material culture and human behavior. The Dog and St. George Islands Shipwreck Survey will continue along these lines, emphasizing the importance of studying settlement patterns and maintaining a regional focus.

Previous Archaeological Research

Limited intensive archaeological investigations had been conducted on Dog and St. George Islands before 1999. On Dog Island, only nine archaeological sites (six terrestrial sites and three historic shipwrecks) appeared in the Florida Master Site File (FMSF) before 1999 (Meide et al. 2001; Damour and Horrell 2001). Most of this previous research is documented in Nancy White's report of archaeological investigations on Dog Island and the report of 1999 underwater archaeological investigations compiled by Chuck Meide and James McClean (White et al. 1995; Meide et al. 2001).

In 2000, the Dog Island Shipwreck Survey continued investigations begun in 1999 (Damour and Horrell 2001). A shipwreck discovered in Spring 2000 by students of the ANT 4131 class, *Techniques of Underwater Site Research*, became the subject of further investigation during the summer field school. For two weeks, transect surveys, excavation, mapping and limited artifact collections were conducted to gather information about the cultural affiliation, function and age of this vessel. These investigations recovered artifacts ranging from colonial period majolica to modern whiteware and stoneware. Only five 1x1 meter units were excavated and mapped. One endpost was located although the length and beam of the wreck could only be estimated. Preliminary hypotheses to the origin of this wreck identified it as possibly a late 19th – early 20th century coastally adapted vessel. Its function remained unclear although the presence of a large winch near one end may represent local shrimp or fishing industries. The report of 2000 investigations details the results of these investigations and the artifacts collected.

Remote sensing surveys for HMS *Fox* (1799) off St. George Island have been conducted since 1980 by Florida State University. In 2000, project staff located historic shoreline maps on the

Department of Environmental Protection's website. By examining changes in St. George Island's coastal morphology on its eastern extremity, a survey area was defined further west of previous areas investigated. This resulted in the discovery of numerous magnetic anomalies recorded by a proton precession magnetometer. These anomalies were investigated by divers with underwater metal detectors. No historic cultural materials were discovered however two prehistoric pottery sherds were recovered. Terrestrial surveys with a proton precession magnetometer also located many anomalies although none were tested due to a need for environmental sensitivity in St. George Island State Park during nesting season.

Research Design

The objective of the 2001 field season of the Dog and St. George Islands Shipwreck Survey was to investigate submerged cultural resources located in and around Dog and St. George Islands by means of remote-sensing, testing and systematic recording. The two most historically significant shipwrecks reported to be in the area are *Le Tigre*, a French merchant brig wrecked in 1766 possibly off Dog Island, and HMS *Fox*, a war schooner lost in 1799 off St. George Island. A GIS database is being developed that will incorporate historic shipwrecks in the area, as well as ballast pile features, docking remains, and other structures related to Apalachicola and Apalachee Bays' maritime history. Research has continued in Ballast Cove on Wreck A (8FR903) and on side scan sonar anomalies recorded in April 2001 (Figure 2). Remote sensing and diver survey investigations have also continued around St. George Island.

2001 Research Objectives

Ballast Cove, Dog Island

The objectives for 2001 fieldwork concentrated on excavation, mapping, artifact collection and transect surveys at 8FR903 to identify the vessel's cultural affiliation, age and function. In April 2001, a side scan sonar survey conducted throughout Ballast Cove identified more than 50 targets for investigation. A majority of these features appeared as ballast piles and ballast scatters. During the FSU Field School in Underwater Archaeology, these other potential sites were investigated along with excavation and mapping at Ballast Cove Wreck A (8FR903). Exposure and mapping of structural elements of the vessel was the primary goal of July fieldwork. Induction dredge excavations and hand fanning would uncover more of the wooden structure. Diagnostic artifacts would also be collected to aid in identifying the vessel and assigning a date range for its deposition into the archaeological record.

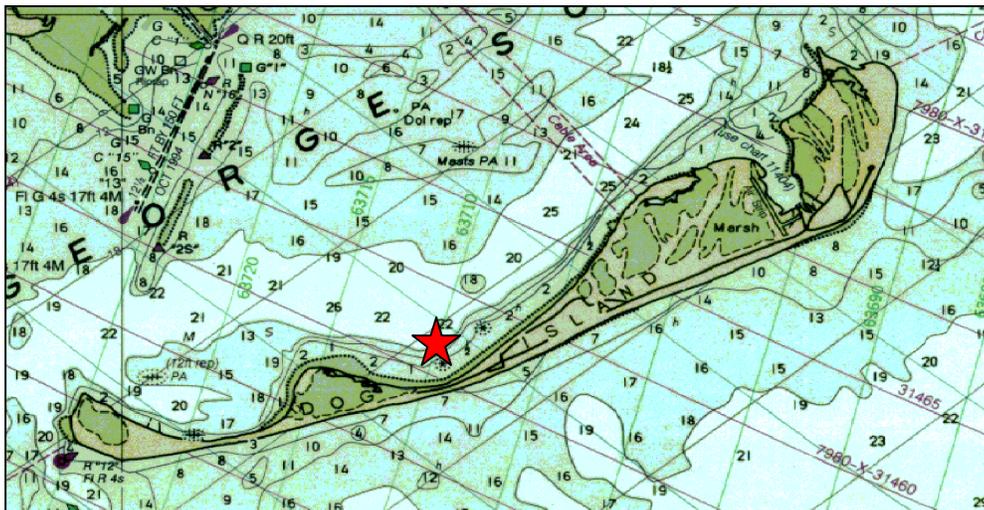


Figure 2. Location of Ballast Cove, Dog Island.

St. George Island

The objectives of the 2001 survey around St. George Island's northeastern tip continued remote sensing surveys based on results of the 2000 survey (Figure 3). Remote sensing devices such as a cesium magnetometer, sub-bottom profiler and side scan sonar were used to locate submerged cultural resources in this area. Any cultural materials observed would be systematically examined and recorded using standard underwater archaeological mapping procedures, photography and videography, if visibility permitted. During the marine magnetometer survey, anomalies identified by the magnetometer would be located by underwater metal detectors and tested by probing, hand-fanning and induction dredges. Test excavations would be limited in nature although extensive excavation could be utilized if cultural remains such as shipwrecks were discovered offshore.



Figure 3. Survey area around northeastern St. George Island.

Ballast Cove

Background Research

FSU's Program in Underwater Archaeology has been conducting research in Ballast Cove since 1999. Remote sensing surveys utilizing a proton precession magnetometer and side scan sonar located numerous potential sites for future investigations. The report of 1999 field operations details the sites investigated (Meide et al. 2001). In Spring 2000, Ballast Cove Wreck A was discovered and briefly investigated by the ANT 4131 class, *Techniques of Underwater Site Research*. During the 2000 Field School in Underwater Archaeology, further investigations uncovered wooden structure and other features such as a winch and two teardrop shaped objects. These objects were later identified as cheeks from a windlass for raising an anchor, reeling in nets, pulling in lumber or cargo, or piloting larger vessels into port (Carrell 1985:61; Chapelle 1973:670-674). Recovered artifacts ranged from colonial period majolica to modern wares, pipe bowls and stems, bricks and tile (Horrell and Damour 2001; Damour and Horrell 2001).

Historical Research for Dog Island's Ballast Cove

Archaeological investigations continue to reveal cultural and historical information on the peoples who lived and worked throughout Florida's Big Bend region. Specifically, the political and economic relationships shared between people and places such as Apalachicola, Dog Island, and St. George Island demonstrate that this region has played an important part in the development of Florida and the cultural history of this region. Recent research into the history of Dog Island's Ballast Cove, located on the island's bay side coast, has provided information on the archaeological remains lying on the bottom. This research, coupled with historic and archaeological investigations conducted in 1999 and 2000, furthers the research goals of this project; locating and categorizing submerged cultural resources.

Historical research in the area is difficult because of the lack of primary documents. The Apalachicola Courthouse burned to the ground in 1900, destroying historic documentation such as harbor records, newspapers, and other important documents. Only a few documents exist in the Florida State Archives pertaining to Apalachicola and the surrounding area. Other documents researched in the National Archives in Washington D.C. also provide scant details of the history of the area and the vessels that plied the waters of Florida's Northern Gulf Coast. The following information was gleaned from the few remaining documents pertaining to a hurricane in June of 1886 and the wrecking of a schooner named *California*.

On June 30th 1886 a hurricane blew through Florida's big bend region. According to newspaper reports after the event, Apalachicola and surrounding communities suffered severe damage. According to the New York Times:

News has just reached here of a terrible gale at Apalachicola on Wednesday, the 30th...uprooting trees, unroofing houses, and causing a loss of \$40,000. The telegraph wires were blown down, and six persons—four white and two colored—who were caught in the bay during the storm lost their lives (New York Times [NYT], 7 July, 1886:2).

During the hurricane, a small Schooner named *California* wrecked off Dog Island. According to the Apalachicola Customs Inspector John G. Reige's Wreck Report, dated July 9, 1886, the American schooner *California* "foundered and capsized" in a heavy hurricane at "one a'clock [sic] P.M Wednesday, June 30, 1886." She apparently "shifted off cable tried to make harbor but (the) vessel foundered in heavy sea". Assistance was given by the crew of *B. K. Birgette* with one William Anderson who went aboard her to help. Anderson apparently drowned when attempting to lend assistance. "The Hurricane was unexpected and they had no time to prepare for it." The Wreck Report indicates that the vessel was rated at 15 and 84/100 tons. She was 14 years of age and registered at the port of Apalachicola, Florida. Her value at the time of the wrecking event placed her at \$1500. The owner and Master was Nicholas Comforter and his crew consisted of his son William and a mate, James Morrison. At the time of *California*'s wrecking, she carried no cargo and had no insurance (Reige 1886:77).

An excerpt from the *Weekly Tallahasseean* dated July 9, 1886, nine days after the wrecking event, summarizes a paragraph from the Apalachicola Times stating that the hurricane was responsible for the wrecking of the small schooner *California* and damage to the region. A few details seem out of place. According to the wreck report, the vessel "foundered and capsized" in Dog Island Cove but does not mention any salvage attempts. According to the following newspaper report, she was recovered and towed back to the harbor.

Thursday last the tug Lottie brought to the wharf the schooner California, capsized on the day of the blow. Tuesday Messers, James Montgomery, Joseph Buzette and N. Donoroma went out to look for the schooner and found her off Turkey

Point. They proceeded to bail her out when they summoned the tug to their aid. Her masts, rudder and bowsprit, together with all her furniture were gone; nothing remained but the hull. No trace of the missing men who were aboard of here when she went down was found (Weekly Tallahassee July 9, 1886).

However, this account does not coincide with an account given by the Customs Inspectors Wreck Report. According to the report, no indication is given of the vessel's return to Apalachicola.

The *New York Times*, dated the 8th of July 1886, provides a more detailed account of the hurricane and the wrecking of *California*:

Particulars have been received of the hurricane of June 30 at Apalachicola, Fla. The wind arose about 10 o'clock, and by 1 P.M. had increased to 70 miles an hour, the barometer reaching the lowest on record. At 4:30 there was a lull, and then the wind, which had been from the southeast, suddenly blew with great fury from the opposite direction. The air was filled with flying timber and branches of trees. All business houses were closed, and the citizens bolted their windows and doors. There was a six-hour reign of terror. Coombs & Co.'s mill lost both smokestacks and a part of the roof. C. H. Smith & co. lost a lot of dressed lumber, blown away. Munro & Co.'s mill, at the bluff, had the roof and smokestack blown off, and at Carrabelle many buildings were leveled, while much timber was carried away. On the river and in the bay the disaster was extensive. S. N. Kimball's dredge was sunk as was also the steamer Emlen, belonging to Coombs & Co. She was down the bay and was swamped. Three men, Jesse Rainey, engineer; Abe Monroe, cook, and Walter Johnson, deck hand, tried to save themselves in the dingey [sic], which capsized, and the first two named were drowned. The rest of the crew, the Captain and three men, were rescued. At East Pass the lighter California made fast to the bark Bigette [sic], at Dog Island Cove. The bark had out four anchors, but she dragged ashore. The lighter was cut loose and soon swamped. There were on board at the time Nicholas Comforter and his son Willie, also William Anderson and James Norman, volunteers. She was found drifting that night waterlogged, and with no one on board; all four were drowned. As soon as the Bigette [sic] grounded she lost her masts. She will be saved... The storm was the greatest ever seen at Apalachicola (New York Times [NYT], 8 July, 1886:2).

Unfortunately, this is all of the historical data available about the hurricane and the destruction of *California*. Specific information about *California* is even more elusive. Because she was not carrying insurance at the time of her wrecking, little information on the vessel's construction exists. Information from the National Archives' Bureau of Marine Inspection and Navigation, including the Licenses and Tonnage Admeasurement Books, show that the first recorded license was issued on February 4, 1874 to half-owner Nicholas Comforter of Apalachicola and half-owner Mary Redgate of Savannah, Georgia for the schooner *California*. *California* was licensed to carry on the Coasting Trade for one year, District of Apalachicola, Port of Apalachicola. Nicholas Comforter was the master of the vessel. *California* measured 47 feet in length, 16 feet in breadth, and 3 feet in depth. The next available document in 1877 indicates that Nicholas Comforter was the owner of the vessel and she would continue in the coasting trade. No changes in the vessel's dimensions were recorded and all measurements remained the same. No further documentation has been uncovered at this time.

According to Steven Singer, *Birgette* was a Norwegian Bark of 584 tons built in 1871. The vessel drifted ashore during a hurricane opposite Dog Island, Apalachicola June 30th 1886. The cargo of lumber was saved but it is implied that the vessel was lost (Singer 1992:30).

Historical evidence thus far is equivocal as to whether *California* wrecked and sank in present

day Ballast Cove or if it was salvaged and brought back to Apalachicola. Continued historical research is necessary in order to answer this question. Further research will also increase our knowledge about the construction of this vessel and its function in the region. What is important about the research is that it may be possible to identify the remains of the vessel lying at the bottom of Ballast Cove. While these secondhand newspaper accounts provide some information as to what happened to *California* after the wrecking event, it is important to question their validity. According to the official Wreck Report given in Apalachicola, *California* wrecked. In other words, no mention of salvage or towing her back to the harbor is made. Because the wreck report is the only primary source available at this time, it is still questionable as to what happened after the wrecking event. In order to address these research questions, continued efforts to search for clearer evidence are necessary. Currently, archaeological investigations of the remains of the vessel in Ballast Cove offer some insight but do not provide all of the answers.

Methodology

March/April Field Operations

In March and April 2001, the ANT 4131 class, *Techniques of Underwater Site Research*, conducted three days of test excavations and visual surveys around Ballast Cove Wreck A (8FR903). Two test units were excavated in the western ballast pile, recorded in 2000, to determine its association with the wreck (see insert, Map 1). Recovered materials include ceramics, tile, pipe fragments and a small piece of copper sheathing. The ballast piles did not appear to be associated with the wreck, and may represent a single event of offloading ballast from port and starboard sides of a vessel at anchor. This hypothesis is based on the proximity of the ballast piles to each other and their relatively proportionate dimensions of length and width. Preliminary diver visual surveys were also conducted south of Datum A and the winch in an attempt to locate more exposed structure. The diver visual survey failed to locate any structure south of the winch therefore the southernmost extent of Wreck A may lie just north and west of the winch. A total of 43 dives were completed in Ballast Cove in March-April along with 34 hours of dive time and 41 person days.

The 2001 ANT 4131 class, utilizing a Marine Sonics 600 kHz towfish, also conducted a side scan sonar survey (Figure 4). After examination of side scan sonar data, 52 targets of potential submerged cultural resources were recorded. Twenty-seven were categorized with the highest probability of historic remains such as ballast piles and scatters (Tables 4 and 5). Investigation of these targets became one objective of July field operations.



Figure 4. Side scan sonar towfish with cable on deck of R/V *Seminole*.

July Field Operations

The summer 2001 field operation in Ballast Cove comprised three objectives; excavation of Ballast Cove Wreck A, hand-fanned transect testing around the wreck, and diver visual survey of side scan sonar targets. These field operations were conducted over three weeks as part of the Summer 2001 Field School in Underwater Archaeology. A total of 203 dives were completed in Ballast Cove along with 197 hours of dive time and 132 person days.

Ballast Cove Wreck A (8Fr903)

Excavation of Ballast Cove Wreck A was the primary objective of this field operation. The site was delineated by a baseline beginning at Datum A located next to the large winch (see insert, Map 1). The baseline tape was secured to a nylon line, weighted down every 3-4 meters and stretched directly north for 50 meters. Datum A is designated as grid coordinate 1000N, 1000E on the site to orient all subsequent testing and excavation units. Excavation conducted on the wreck consisted primarily of hand fanning and use of a 4-inch induction dredge (Figure 5 - inset). Sedimentary overburden was screened through a ¼ inch screen deck and floated away from the site (Figures 5 and 6). Accumulated sediments consisted primarily of gray shell hash with light sand cover.



Figure 5. Floating screen deck and crew members.
Inset: 8-hp dredge pump with 4" hose for excavation.



Figure 6. Screening materials from induction dredge excavations.

Horizontal control of the site was maintained by weighted PVC grids, 1x1 and 2x2 meter units numbered sequentially. Sixteen 1x1m units were excavated this field season, combined with the five units excavated in 2000 brings the total number of excavated units on site to 21 (total area = 42 m²). Excavation of each unit continued until wooden structure appeared or sterile sediments with no cultural materials were reached. The northernmost extent of the wreck was delineated by an endpost in Unit 5. Whether this endpost represents the bow or stern has not yet been unequivocally established but it likely represents the bow. Unit 19 was placed one meter south of Datum A in an attempt to determine the southernmost extent of the wreck. The unit, however, did not locate any structure, therefore, the overall length of the keel, tentatively measured at 19.2 meters, is still undetermined.

After excavation of each unit was completed, a detailed map was drawn on a sheet of Mylar at a 1:10 scale. Each of the individual unit maps were digitized and combined to form a large AUTOCAD® map of all excavated units (see insert, Map 1). Artifacts recovered from all units and surface collections were sorted and separated by **Provenience Designation** (location) and **Field Specimen** number (material), or **PD/FS** (Tables 1-3). Conservation efforts began on site utilizing bags and buckets of water to prevent the artifacts from drying out and degrading. Recovered artifacts were stored at FSU Marine Laboratory facilities for further stabilization and preparation for long-term storage and analysis. After fieldwork was completed, excavated units on the wreck were backfilled with twenty 60-pound bags of All Purpose Sand to protect the wooden structure from further deterioration.

Construction of Ballast Cove Wreck A - 8FR903

The fragmentary and dispersed remains of the vessel at the bottom of Ballast Cove extend approximately 24 meters in length (from Datum A) with a maximum width of extant hull remains of five meters. The bow lies at the north end and the vessel points due north. It lies on the keel with the starboard side buried in the sediments. No remains of the port side have been located at this time. The starboard timbers are completely buried except for the upper portions of the futtocks. Preservation of the remains of the vessel varies over the extent of the site. Generally, buried features are in excellent condition while structure that exists above or at the sand surface is eroded and suffering from *teredo* worm activity. The following description of the hull and its various components are described below in the sequence of construction.

Keel

The keel extends approximately 19.60 meters from the tapered and eroded stern section to the stem. The keel was not completely exposed during this year's investigations, therefore, an accurate measurement was not possible at this point. Furthermore, it has not yet been determined if the entire keel is intact or if it consists of a series of fragments. The keel is well preserved below the sediments while the exposed portions are honeycombed with *teredo* wormholes. The keel at midships has an approximately 30 centimeter sided dimension with a molded dimension of 25 centimeters. Aft keel dimensions range from 60 centimeters sided to 25 centimeters molded, and 13.5 centimeters sided to two to three centimeters molded at the stern section. The stern section of the keel tapers to a fine point, is highly eroded, and worm eaten. This section of the highly eroded stern may represent a former scarf in the keel or the end of the keel itself. At the bow, the sided dimensions are 30 centimeters and the molded are 15 centimeters. Wood samples taken from the keel will determine wood types used and the possible construction location of the vessel.

Examination of the intact portions of the keel revealed that no other scarves are present. This indicates that the keel may have been constructed of a single piece of timber. No evidence has yet been found to indicate that a false keel, or shoe, was attached to the bottom of the keel.

The garboard strake is present on the surface of the keel. Due to the highly eroded nature of the keel, it is impossible to determine the shape of the rabbet or how the garboard strake articulated into the rabbet. The garboard measured 35 centimeters wide and five centimeters thick.

Through, or drift, bolts are present along the length of the keel indicating that a keelson and floor timbers were once present. The length of the bolts average 31 cm above the existent surface of the keel.

Bow Assembly

No remains of the bow are present except for a fragment of an endpost, identified as the stem. The stem is highly eroded and ridden with *teredo* worm casts. The stem is bolted to the keel with a scarf plate constructed of copper. The scarf plate assembly consists of a copper bolt and plates that are attached to both the keel and stem. The plates are eight centimeters wide, one centimeter thick and more than 21 centimeters in length (extended into adjacent unexcavated unit) while copper bolt measured 3 centimeters in diameter and 19.5 centimeters in length between the plates. The dimensions of the stem are 24 centimeters sided and 28 centimeters molded. Wood samples of the stem were collected to aid identification of wood types used in this vessel's construction.

Stern Assembly

No remains of the stern have been identified or recorded to date.

Framing Components

Five framing components have been identified on the starboard side of the vessel. These components consist of the partial remains of floor timbers as well as the first futtocks. The remaining portions of the floor timbers are fragmentary and in some cases indistinguishable from the first futtocks. Approximate floor timber dimensions are 15 centimeters sided and 18-20 centimeters molded. The remaining fragments of floor timbers rest on top of or inside the garboard strake. No floor timbers were recorded on the port side of the vessel. Units were excavated to 50 cm revealing no evidence of floor timbers, futtocks, or bottom planking on the port side. Large drift bolts, on average, extend 31 cm above the eroded surface of the keel. Floor timbers may have been attached to the keel with drift bolts fitting snugly down around the molded section of the keel. Floor spacing is 18-20 centimeters while frame spacing is roughly 22 centimeters at the first futtock. Limber holes were located ten

centimeters from the garboard strake and measured 10 cm wide. Wood samples were also collected from the remaining portions of the floor timbers.

Futtocks may have been fastened to the floor timbers with horizontal iron fasteners. Forward of midships, the futtocks appear to have been joined aft of the floor timbers. Futtocks aft of midships are joined with the futtocks forward of them. Extant framing components (floors and first futtocks) extend from the keel and are described from northernmost to southernmost. Frame one (the northernmost) extends from the keel 2.55 meters (following hull curvature). Frames two and three extend 2.94 meters from the keel. Frame four extends 2.95 meters from the keel. Frame five (the southernmost) extends 3.05 meters from the keel. At this point, the distance of the inboard first futtocks from the midline of the hull is unknown. The sided and molded dimensions of futtocks are 12.5 centimeters and 25 centimeters respectively. The frames appear to have been violently torn out of the hull with only minute portions remaining. These fragments measure 26 centimeters sided and 21 centimeters molded. Wood samples were collected from the first futtocks.

No cant frames have been excavated at this time.

Keelson

The keelson no longer exists and has completely eroded away. The size of the remaining drift bolts above the eroded surface of the keel measure 31 centimeters and may represent the actual size of the keelson in areas where the floor timbers were absent.

Hull Planking

The outer hull planking of this vessel measures at an average of 18.5 centimeters wide and five centimeters thick. Further excavation under the hull is necessary to understand how the hull planking is fastened to the frames. No evidence of sacrificial planking was observed although more than 90 brass tacks, likely for fastening sheathing, were collected.

Ceiling Planking

Fragments of ceiling planking were recorded. These planking fragments generally measure five centimeters thick with varying widths based on extent of degradation. They are fastened to the futtocks with iron fasteners.

Mast Step

Because the keelson no longer exists, any identifiable portions of the mast step are no longer in place.

Repairs and Oakum

The exposed sections of the wreck have revealed no evidence of any repairs. Additionally, evidence of the use of oakum has yet to be discovered.

Miscellaneous Components

One L-shaped knee has been located amidships on the port side. The knee was found on the surface and measures 73 centimeters long (from one end to center), 50 centimeters long (from other end to center) and 10 centimeters thick. The knee is composed of a single piece of compass timber and its function (whether as a standing, hanging or lodging knee) and location on the hull has not yet been determined.

Rigging Elements

Rigging elements were collected throughout the remains of the vessel. These elements are composed of iron concretions and the remains of brass races, cages and bearings of patent or roller sheaves. One wooden sheave encased in a concretion was recovered during this year's investigations. This sheave contains the race, roller cage, plate, and screws. The outer portions of the sheave indicate previous *teredo* activity.

Windlass

Two large objects, formerly described as “tear-drop shaped objects” have been identified as cheeks for a windlass (Damour and Horrell 2001; Smith pers. comm. 2001; Chapelle 1973:670). The remains of the windlass are located near the bow section of the vessel. These features are heavily concreted, therefore highly difficult to locate and identify any diagnostic markings. Other metal concretions present in the area may be associated with the remains of this windlass. Cheeks were also recorded on the 19th century Noquebay wreck in the Great Lakes (Figure 7) (Carrell 1985:61). These cheeks may have been part of a split barrel windlass, which dates to the mid-19th century (Figures 8 and 9) (Chapelle 1973:677).



Figure 7. Windlass cheek from Noquebay wreck.
(Wisconsin's Great Lakes Shipwrecks website)

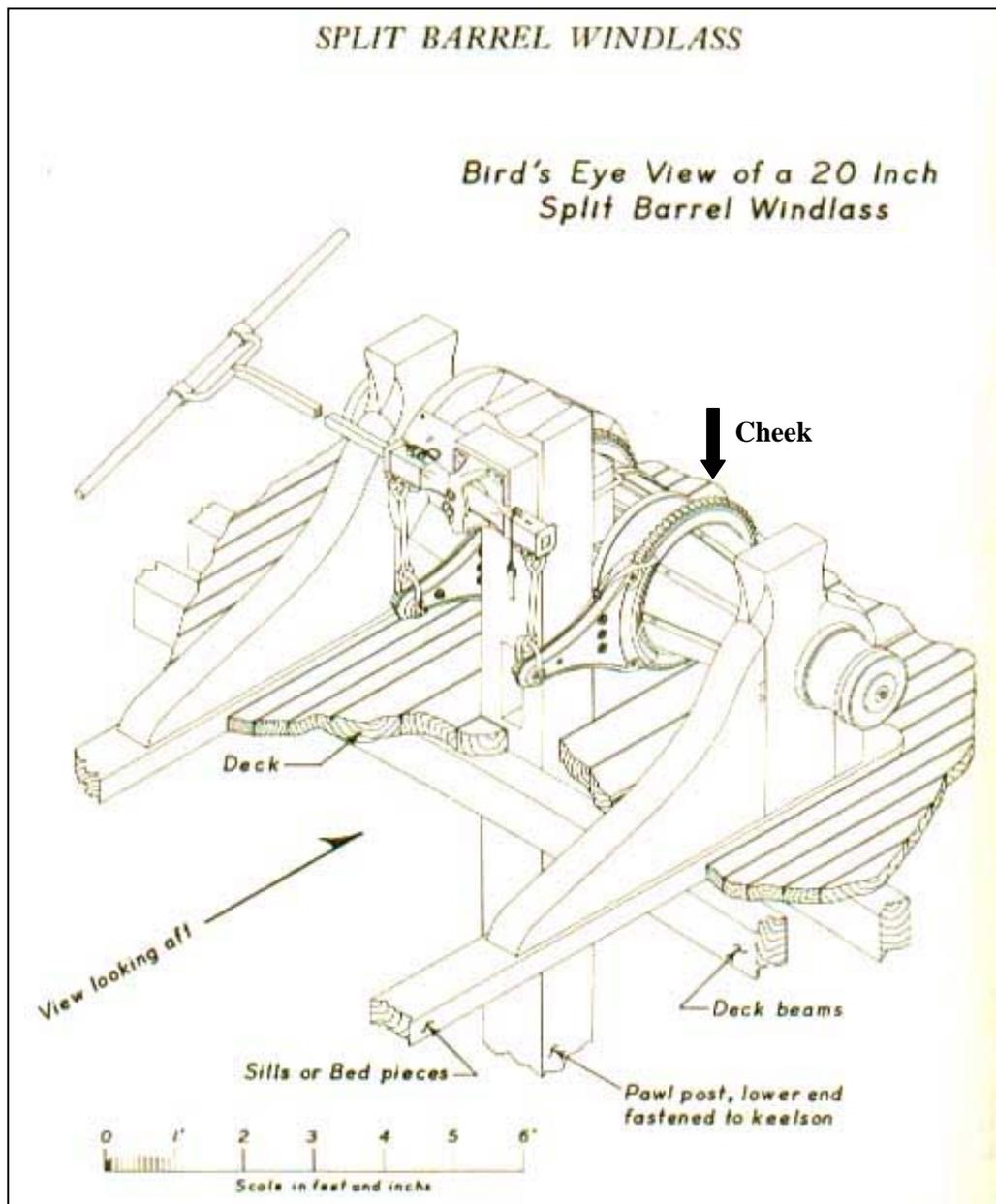


Figure 8. Sketch of 19th century split barrel windlass showing cheeks.
(Chapelle 1973:677)

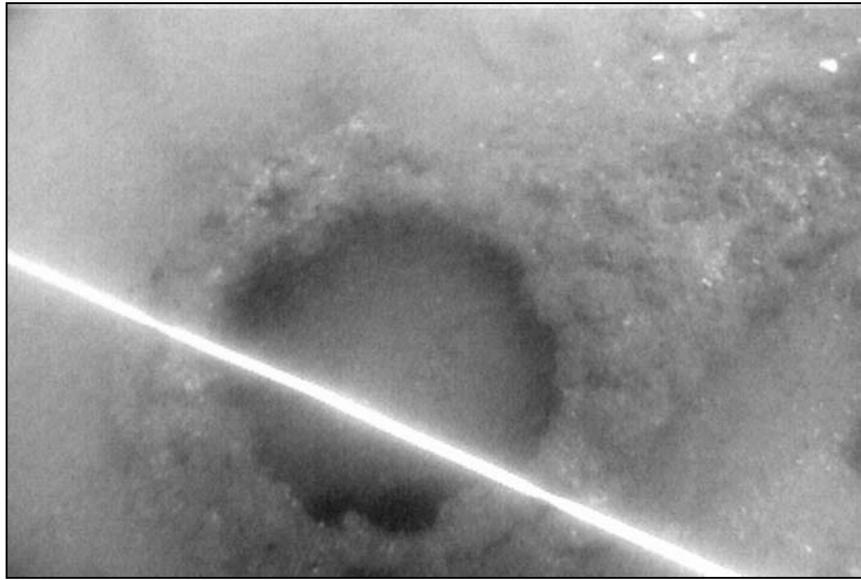


Figure 9. Cheek located near stem on Ballast Cove Wreck A.
Baseline runs over cheek, view facing northeast.

Surveys in Ballast Cove

The second objective of the Ballast Cove operations consisted of diver transect surveys. Dive teams swam ten-meter transects east and west from the baseline every two meters, along the 50-meter baseline, to determine the extent of the site. Divers swam out to ten meters on a reel tape and hand-fanned every two meters looking for artifacts and features. Each dive team conducted a brief surface collection of the area and then hand-fanned a small search area. The results of each test excavation were recorded by the dive team and plotted on the site map. Each test area was excavated to a depth of 20-30 centimeters to search for cultural material possibly associated with the wreck site. The majority of artifacts recovered from the test areas consisted primarily of historic ceramics spanning four centuries, glass, and ballast stones of various sizes.

The third objective of July operations investigated side scan sonar anomalies recorded in April 2001. The objectives of the survey dives were to identify, classify, and catalogue ballast piles and other cultural remains within Ballast Cove. A total of 52 side scan targets were identified from data collected in the spring 2001 survey whereby 27 were considered to have the greatest potential for cultural materials (Table 4). The targets consisted primarily of features that stood proud of the bottom and would be relatively easy for a dive team to identify. The survey operation investigated eight targets during the field season in an attempt to accomplish these objectives.

Diver investigation of targets began with circle searches conducted off a buoy placed on the GPS coordinates of the anomaly. Once the feature was located, divers swam North-South and East-West transects along the feature to record the overall dimensions. Surface collection of diagnostic artifacts and representative samples were collected as well (Table 5).

Artifact Analysis

Recovered materials were recorded by provenience and material under a Provenience Designation and Field Specimen number system. Provenience Designation refers to locational information pertaining to each artifact. This location can consist of a unit, level or surface collection designation. Field Specimen number refers to the material that the artifact is composed of (Table 1). A total of 1024 artifacts were recovered from investigations in Ballast Cove, Dog Island and

St. George Island (Table 3).

Ceramics

A total of 118 historic and three prehistoric ceramics were collected from Ballast Cove in 2001. Historic ceramics range from possibly early Spanish majolica to modern stoneware and whiteware (Figures 10 - 17). Forty fragments of stoneware and 54 fragments of earthenware were recovered, three of which were transfer printed. Figure 64 (PD 1057 FS 4) has been identified as a salt or pepper shaker dating roughly to the late 19th century.

The artifacts recovered during 2001 surveys indicate that a variety of site formation processes are at work in Ballast Cove. These artifacts comprise a variety of time-periods from 17th century to the present day and consist of aboriginal and colonial types. Artifacts recovered during excavations and associated with the wooden hull remains of the wreck are considered to be from intact contexts and generally date to the 19th century. These data recovered from the wreck provide further clues as to the temporal, cultural, and functional identity of this vessel. Artifacts recovered on the surface may be the result of erosion and scouring as well as other site formation processes at work at this site. These important artifacts may be the result of the continuous dumping of ballast in this area. These artifacts may also originate from other cultural resources buried in the area. The artifacts recovered from this multi-component site are important because they represent the use of the cove by many different ships and people over time.

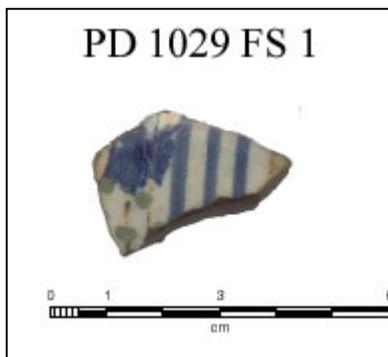


Figure 10. Majolica or faience.



Figure 11. Possible pearlware fragment with transfer print design.



Figure 12. Hand-painted ceramic.



Figure 13. Green tile fragment.



Figure 14. Stoneware fragment with brown glaze.



Figure 15. Stoneware fragment with incision.

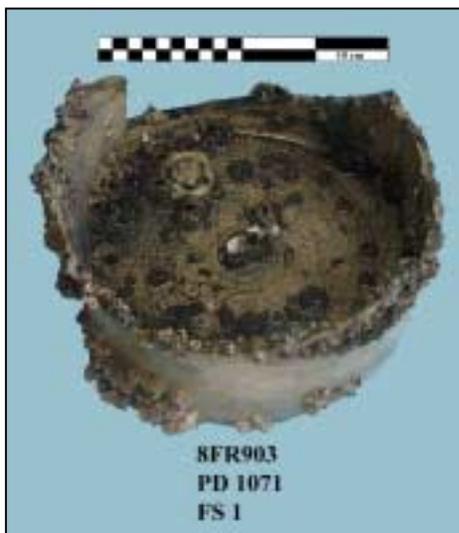


Figure 16. Base of stoneware vessel.

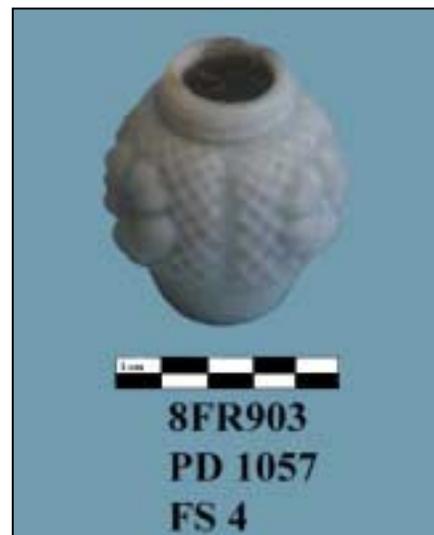


Figure 17. Salt or pepper shaker, late 19th century.

Pipe Bowls and Stems

In 2001, 13 pipe stems and one pipe bowl fragment were recovered from the site. The pipe bowl exhibited an impressed or incised design with the words “Balme London E” clearly legible. This pipe bowl likely dates to the mid- to late-19th century.



Figure 18. Fragment of a pipe stem.



Figure 19. Pipe bowl fragment with design impression.
Note: “Balme London E” appears in the design.

Glass

Glass artifacts predominantly consisted of broken fragments. Fifty glass artifacts were recovered; three pieces of milk glass (including a salt or pepper shaker), 19 green, one brown, 23 clear, one red, two undetermined and one glass marble. Bottle glass and pane glass comprised the majority of types.

Metals

Metals collected from Ballast Cove consisted of iron, brass and copper. Iron concretions typically represented fasteners and other materials used on board the vessel. Two hundred ninety small iron concretions, including one composite concretion containing a wooden pulley sheave, were recovered. Near the stem at the north end of the site, several large concretions, possibly representing hardware from the winch, were observed but not mapped or recovered. Two screws and five nails (wire and cut types) were recovered from the wreck. One small piece of copper sheathing was recovered from a test pit in the western ballast pile west of the wreck. Brass materials consisted of 96 tacks probably used to fasten sheathing to the hull, and the object in Figure 20, identified as a race for a patent sheave.



Figure 20. Brass race related to “roller” or “patent” sheaves.

Wooden sheaves recovered from Ballast Cove Wreck A and a ballast pile recorded during side scan sonar surveys have been identified as “roller” or “patent” sheaves (Figures 21-23). A single brass race with brass roller cage and bearings representing a third patent sheave was recovered as well. These patent sheaves appeared in the mid- to late-19th century (Kenchington pers. comm. 2001; Coleman pers. comm. 2001). One sheave recovered from a large ballast mound, originally recorded in April by the side scan sonar survey, had a diameter of 20 centimeters (8”). Coleman (2001) described the concept of the roller assembly in a wooden sheave.

“You have rollers with steel pins (corroded away), the ends of the pins go through narrow, loose, (Cu alloy) rings either side and are riveted in place... The rollers rotate on the pins. These rings tie all the rollers together as a unit and maintain their spacing (this needs confirming but I think the assembly may be called a ‘cage’). The whole assembly rotates within the shell or ‘race’. Now, we need to retain the ‘cage’ in the ‘race’ laterally...The top edge of the race is rolled or lipped. That would serve to retain the cage on that side...The race is inserted into the sheave and it’s narrow flange keeps it from going right through. The cage is inserted in the race. A separate plate, having an internal hole slightly less than the race..., is then riveted to the sheave thus containing the cage and locking the race in place” (Coleman pers. comm. 2001).

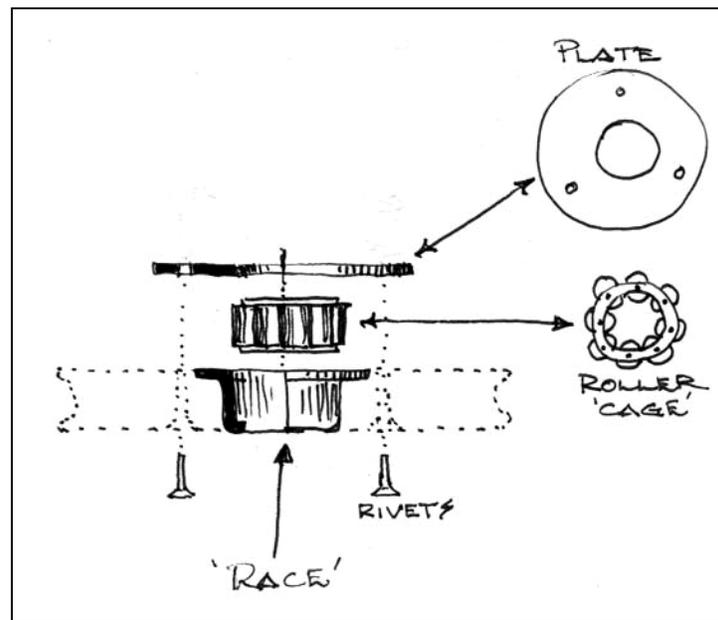


Figure 21. Sketch of roller assembly from patent sheave.
Sketch by Ron Coleman.

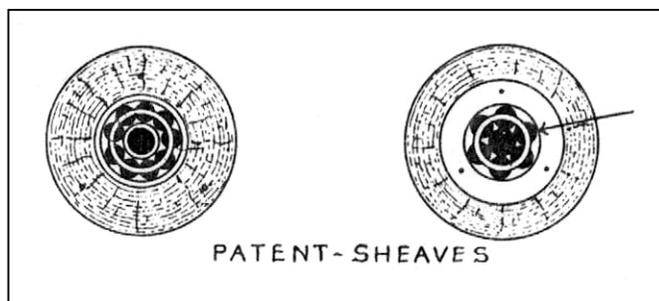
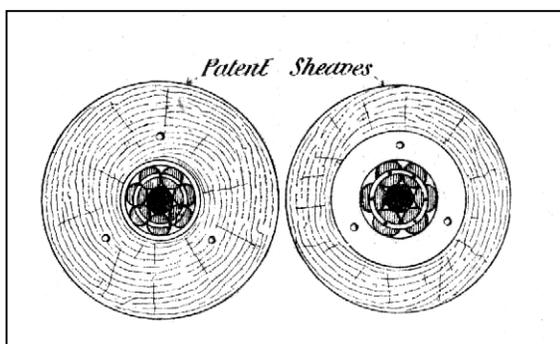


Figure 22. Patent sheave diagram from Patterson 1901:67.

Figure 23. Patent sheave diagram from Desmond 1919:136.

Brick, Slate, Bone

In 2001, 37 brick fragments and one bone fragment were recovered. This brick material may be related to ballast or cargo carried on board. In 2000, some slate fragments, possibly related to building materials carried as cargo, were recovered. No slate was collected in 2000. The bone fragment has not been identified to species but likely represents food remains.

Wood

Other than wood fragments from frames and planking, one wooden knife handle was collected (Figure 24). Two wooden pulley sheaves were also collected, one individually and another as part of a larger iron concretion.



Figure 24. Wooden knife handle recovered near keel at south end of site.
Note: Also found near salt or pepper shaker, whetstone and a pipe stem.

Ballast Stones

Three hundred eighty-one ballast stones were sampled from the Ballast Cove in 2001. These stones were collected on the wreck, between frames, and from ballast piles and scatters originally recorded during side scan sonar surveys in April. In the future, a ballast pile typology will be developed and types of ballast materials will be identified.

Composite Artifacts

During July, a few composite artifacts consisting of wood, iron concretion and brass were recovered. Two such artifacts include a wooden pulley sheave with attached brass roller plate and race and a large iron concretion containing a patent sheave and other iron bars.

Other Artifacts

Other materials collected include flint, coal and other unidentified artifacts. Seven fragments of coal, one modern lead fishing weight, one quartz ballast stone and a whetstone, found near the salt or pepper shaker and wooden knife handle, comprise some of these materials.

Summary

Investigations conducted in Ballast Cove this year have yielded a large data set that aids in understanding human activity in this region. The cove represents more than a dumping site for ballast. It is a landscape feature in a maritime context that represents a broad range of cultural, spatial, and temporal, activity. Our examination of this site will allow us to focus on questions pertaining to human interaction and behavior in past maritime contexts.

The wreck located at the bottom of Ballast Cove is indicative of the late 19th century. Preliminary measurements and features associated with the wreck indicate that it is a small vessel, perhaps a fishing schooner or coastal trader. Artifacts found on the surface of the site represent a broad range of human history from the prehistoric to recent sport fishing activities. However, artifacts recovered in excavated contexts in association with the remains of the wooden hull, date to the late 19th century. Historic research indicates that a small vessel, *California*, wrecked in “Dog Island Cove” during a hurricane on June 30th 1886. While the preliminary scantling data are inconclusive, the historic and archaeological assemblage suggests that this vessel may represent the remains of *California*. Continued research is necessary before definitive conclusions can be made. Unfortunately, the entire story of this vessel may never be known.

The artifacts recovered during the transect survey also represent a broad range of human activity. The dynamic nature of Ballast Cove has made it difficult to completely understand what the artifacts represent. More importantly, it is difficult to identify areas where specific artifacts originate. Many of the artifacts may be byproducts of continued site formation processes such as scouring and erosion. These natural site formation processes challenge archaeologists and make it difficult to fully comprehend and interpret the archaeological assemblage around the wreck. It is possible that other wrecks exist in the area and these artifacts may represent these cultural deposits. Conversely, some artifacts may also have resulted from the deposition of ballast around the site. That is, these artifacts may simply have been transported across the sand surface to areas where they are blocked from continual movement. Continued research and analysis is necessary before it is possible to determine what processes are occurring in this area.

The ballast piles recorded during the ANT 4131 side scan sonar survey have demonstrated different patterns of ballast dumping. Artifacts recovered during the reconnaissance of these piles indicate that it is possible to identify and catalog these ballast piles. While these ballast piles represent synchronic events, they do provide a variety of data about human activity and interaction at this cove. The ballast piles and associated artifacts may come from the holds of ships that came to Apalachicola and Carrabelle to take on lumber or other commodities. They may also represent the activities of ships taking shelter during storms. These brief periods of activity continue to reveal information about the people who arrived at and utilized Ballast Cove. Continued research will aid in our interpretations of this site and nearby historic anchorages.

The research conducted this year has provided substantial clues as to the activities and people who utilized this important cove. Further research is necessary to continue to reconstruct the cultural and historic past. As future development threatens Florida's natural and cultural resources, it becomes increasingly important to recover and record this heritage before it is lost forever.

St. George Island

Background Research

In addition to operations conducted in Ballast Cove, the 2001 field season focused on the search for the remains of HMS *Fox* (1799) off St. George Island. William Augustus Bowles, the self-proclaimed Director-General of the Creek Indian Nation of Muskogee is associated with HMS *Fox* and the reason that this vessel has great historical significance to Florida and the Southeast. Bowles' history brings to life his enigmatic and megalomaniacal personality.

William Augustus Bowles was the oldest American-born son of an Englishman and Loyalist. Born in Frederic County, Maryland around 1764, he left home at the age of 13 to pursue his desire for a military life under British authority (author unknown 1805:82). His lifelong political and military alliance to the British Crown began when he joined the British camp in Philadelphia and served "as a volunteer" (author unknown 1805:82). He fought alongside the British at the Battle of Monmouth and followed their retreat out of Philadelphia and away from approaching American rebels (author unknown 1805:82).

He soon lost his military commission because he "was unaccustomed to restraint, and unused to subordination" (author unknown 1805:83). He apparently felt that he would be better suited to command than to obey. After his departure from the British army, he joined his Creek friends and began his journey to infamy.

Bowles, having acquired considerable authority among the savages, who had adopted him into their tribe at the very period when he was considered as a miserable outcast by those with whom he had been brought up, determined nevertheless to make use of all his influence for the advantage of the English nation (author unknown 1805:83).

With a military force of his Indian allies, Bowles attacked the Spanish in Pensacola and was rewarded for his valor by the British. After reinstatement to his former British army rank, Bowles continued attacks on Spanish territories along the Gulf coast. His problems with authority continued as he was brought up on charges and sat before a general court martial after "menacing a superior officer" (author unknown 1805:86). He soon left the British army again and joined his Indian allies, by the age of nineteen. Bowles made many journeys to the Bahamas for supplies and to build alliances for his causes. Bowles wanted to establish and lead a separate and sovereign Nation of Muskogee. He also maintained his alliance with Britain who supported him in his endeavors and campaigns against Spain and the United States, both vying for control of the Florida territories.

Bowles, with his strong military background, instructed "his companions in the art of navigation, and for this purpose he made several excursions into the gulph [sic] of Florida" (author unknown 1805:88). With his force of Indian warriors, Bowles fought the Spanish at sea as well as on land. In the 1780s, Bowles and his companions, in a vessel he purchased, were attacked by a Spanish *guardia costa*. The Spanish ship failed to take Bowles or his vessel as a prize as Bowles fired a broadside against the enemy with six four-pounders (author unknown 1805:88). For his success in battle and skills as a leader, Bowles was elected "commander in chief of (the Creek) armies by acclamation" (author unknown 1805:89). He quickly gained widespread fame, respect and

admiration among Indian tribes across America. In 1789, Bowles was “appointed war-chief” and designated “General” (author unknown 1805:90). By 1791, Bowles was 26 years old and a great leader among the Creek Indians of the Southeast. Wilson described Bowles as “about five feet eleven inches high, muscular in his frame, and constructed in such a manner, as to unite strength and agility” (author unknown 1803:29).

General Bowles, ever the British loyalist, attempted to establish trade relations between Great Britain and his Native American allies as well as usurp the power of the burgeoning United States of America. In order to accomplish this feat, Bowles wanted to attack the Spanish in La Florida and capture this territory for his Muskogee Nation. The British Crown granted a warship for Bowles’ use in his endeavors in 1799, and HMS *Fox* became forever linked with William Augustus Bowles. HMS *Fox* was listed as a 150-ton military schooner and ex-French prize (acquired 1799) according to Hepper (1994:92). She reportedly carried 14 guns and was commanded by Lieutenant-Commander James Wooldridge (Hepper 1994:92). *Fox* was loaded with provisions including munitions and supplies to entice Native Americans into taking up arms against the Spanish and later the Americans. *Fox* left Nassau, Bahamas in the fall of 1799 and traveled up the Florida peninsula to attack the Spanish Fort San Marcos located at the confluence of the St. Marks and Wakulla Rivers. En route to St. Marks, a storm blew the ship off course and onto a shoal or reef near the eastern end of St. George Island in September. Shipwrecked and devastated, Bowles would never realize his dream of an independent Muskogee Nation (Meide et al. 2001; Wright 1967; Damour and Horrell 2001).

HMS *Fox*’s historical significance lies in its association with Bowles. Had Bowles been able to take Spanish Florida and accomplish his goals, the history of the United States might have been completely different. Another contribution to history and anthropology is that Bowles and many of his Indian allies, with their personal possessions, were on board *Fox* when it wrecked. The opportunity to potentially locate a material culture composed of both European and Native American cargoes and possessions would be unique. Also, the weapons and trade goods onboard *Fox* at the time of its wrecking should provide substantial data on the material culture of the 18th century and may still be detected by the magnetometer.

HMS *Fox* reportedly sank off the eastern end of St. George Island in 1799 after striking a reef or shoal (Ellicott 1962:236; Wright 1967; Meide et al. 2001). Previous surveys for this vessel examined the modern northeastern tip with few potential targets for investigation (Brewer 1982). Project staff, in May 2000, located historic shoreline maps of Dog and St. George Islands on the Department of Environmental Protection (DEP), Office of Beaches and Coastal Systems website (Florida DEP 2000). These maps demonstrate changes within these shorelines since Department of Natural Resources (DNR) surveys in 1859. These maps consist of map overlays of surveys conducted by the DNR between 1859 and 1979. Upon examination of these maps, the dramatic accretion and erosion of sediments is readily apparent. After examining rates of sediment accumulation along with these historic shoreline maps, project staff in 2000 estimated where the 1799 tip may have been; over one kilometer west of its present location (Damour and Horrell 2001) (Figures 25 and 26). Based on this dramatic accretion, the 2000 and 2001 survey areas concentrated further west than previous surveys. Historic maps of the island also demonstrate the presence of oyster shoals that may have brought about the demise of *Fox* (Figures 27 and 28). Ellicott stated that “the sound is so full of oyster banks, and shoals, that it is difficult to navigate it, without a pilot” (Ellicott 1962:236). Remote sensing surveys during the summers of 2000 and 2001 located a number of magnetic and sonar anomalies that potentially represent the remains of *Fox* or other historic shipwrecks (Damour and Horrell 2001).

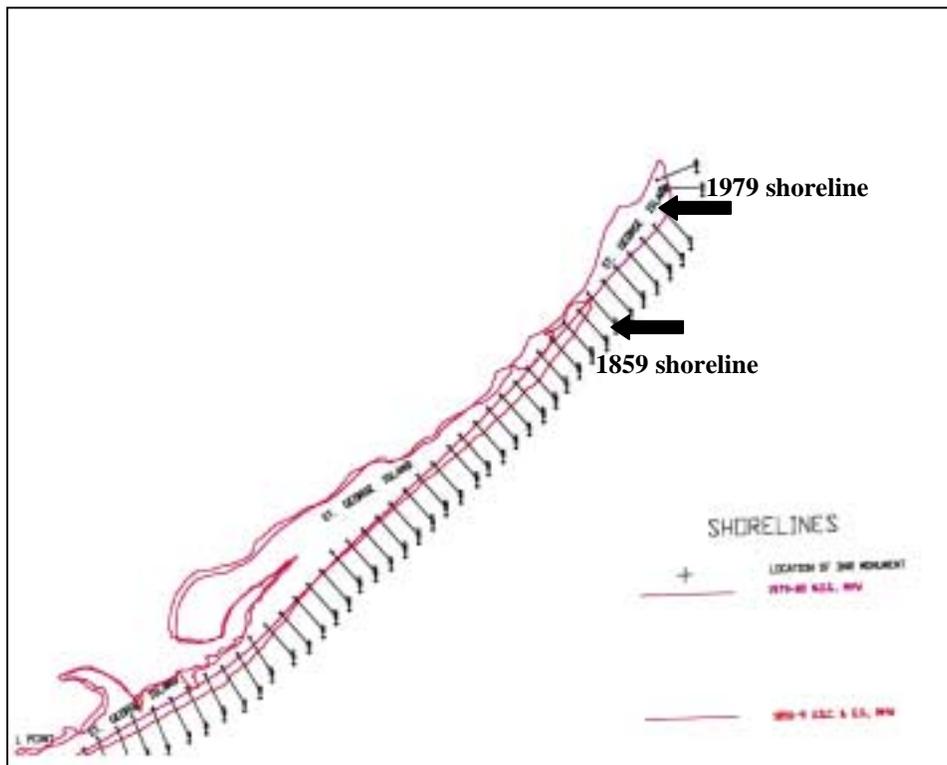


Figure 25. St. George Island eastern tip shorelines, 1859 in red, 1979 in purple. Note: Black lines denote locations of DNR survey marker locations every 1000 yards. (Florida DEP 2000)

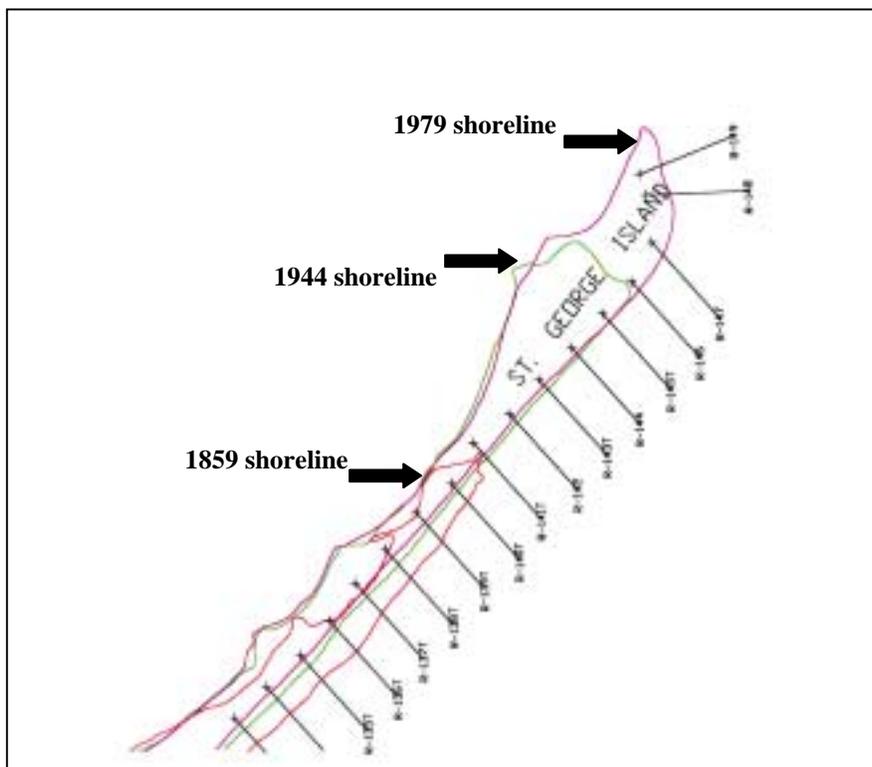


Figure 26. Close up view of northeastern St. George Island historic shoreline changes. Note: 1859 in red, 1944 in green, 1979 in purple, black X's are DNR survey marker locations. (Florida DEP 2000)

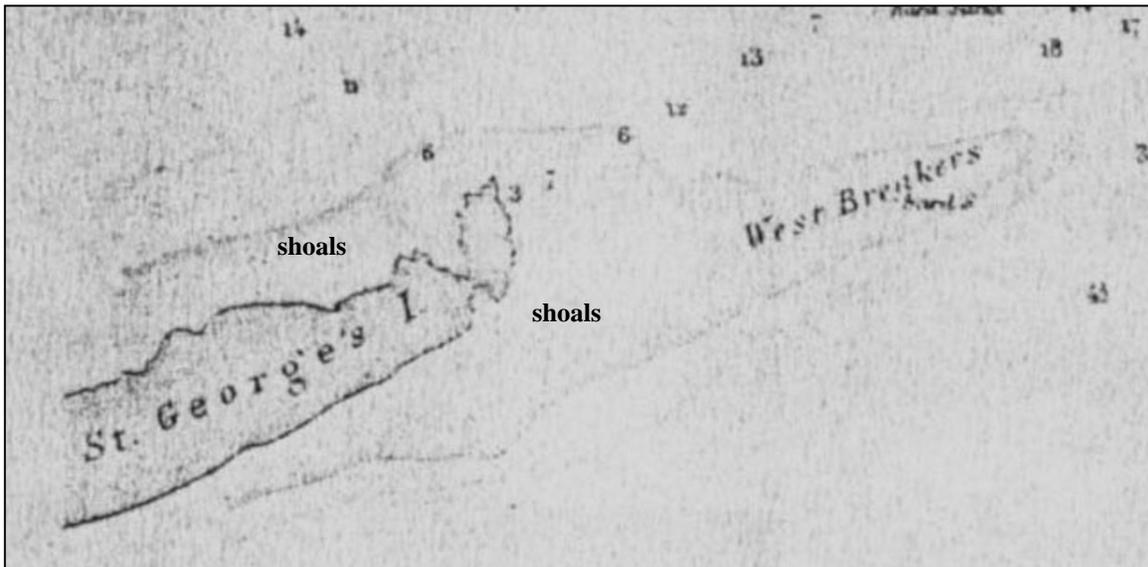


Figure 27. Close-up of 1853 map demonstrating shoals around St. George Island's eastern tip. (Meide et al 2001:170)

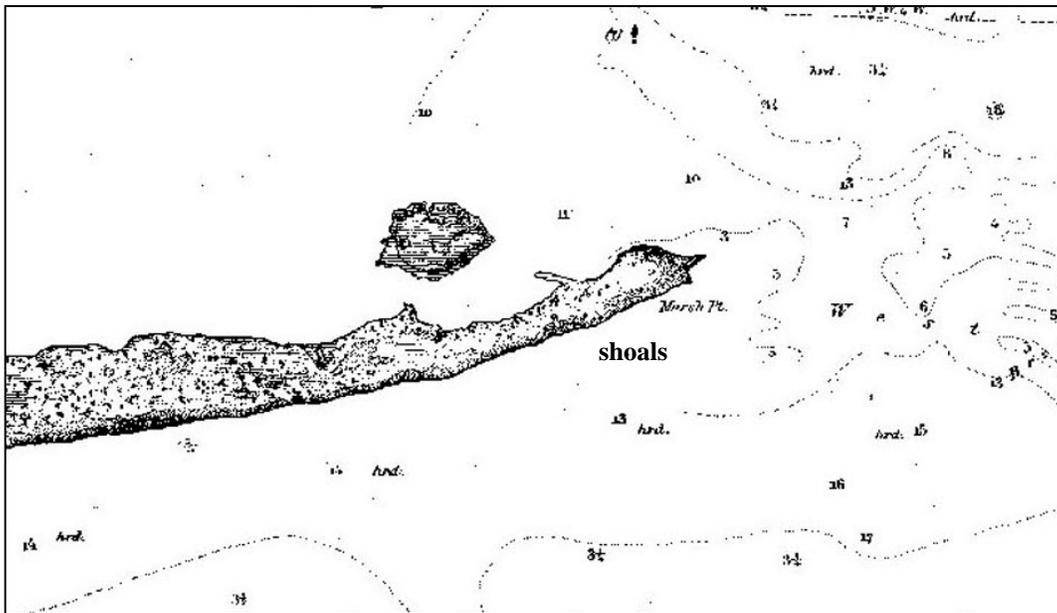


Figure 28. Close-up of U.S. Coast Guard nautical chart of 1859 showing eastern end of St. George Island and surrounding shoals. (Meide et al 2001:172)
 Note: Marsh Island not yet attached to greater St. George Island.

Methodology

Shipwreck survey around St. George Island comprised two segments, remote sensing survey and diver investigations of anomalies. The objectives of these operations consisted of locating all culturally and historically significant remains around the eastern end of St. George Island. The search for HMS *Fox* was the primary goal. Survey and dive teams operated from the FSU Marine Laboratory's 50ft R/V *Seminole*.

The R/V *Seminole* towed a Geometrics 881 cesium marine magnetometer 25 meters behind the vessel to prevent magnetic interference from ferrous materials onboard. Survey tracklines initially

ran parallel to the island's shoreline and were plotted in advance to establish a systematic search of the area. GPS coordinates for magnetic anomalies were recorded along with estimates of size during daily surveys. Tracklines running perpendicular to the first set allowed saturation of areas containing anomalies. A DataSonics CHIRP II sub-bottom profiler with high and low frequency transducers recorded subsurface anomalies that may be related to shipwreck remains or modern debris. Once an area with magnetic anomalies had been delineated, the sub-bottom profiler recorded any subsurface anomalies that may be associated with magnetic anomalies. A Marine Sonics 600 kHz side scan sonar was used to record surface anomalies that may be related to shipwrecks.

After anomalies were recorded, they were rated by size and location then prioritized for further investigation by dive teams (Table 7). Dive teams completed circle searches around GPS coordinates for an anomaly with a metal detector to locate the source of magnetic disturbance. A total of 12 magnetic anomalies were investigated in the field season, three of which were later reinvestigated with a more sensitive metal detector. Five anomalies were determined to consist of modern debris or WWII era ordnance and artillery (Table 6). Ten sub-bottom profiler anomalies have yet to be investigated (Table 8).

Marine Survey

In 2000, remote sensing surveys utilized a Geometrics 866 marine proton precession magnetometer on the Bay and Gulf sides and a Geometrics 856 terrestrial proton precession magnetometer to survey the eastern end of St. George Island along the beach. In 2001, a Geometrics 881 optically pumped cesium marine magnetometer recently acquired by the FSU Department of Anthropology was employed. The cesium magnetometer can record up to ten readings per second in comparison to the proton precession magnetometer that records up to one reading per second. In 2000, the proton precession magnetometer, with tow cable fastened to ½" nylon line and an orange buoy, was towed 50 meters behind the R/V *Seminole*. The towfish cable is delineated in ten-meter increments with white duct tape. Red duct tape around each increment denotes its length at that location in tens of meters (Figures 29 and 30).

In 2001, the cesium magnetometer was towed 25-30 meters behind the same vessel with only a small Styrofoam buoy attached to the towfish for visual reference (Figure 31). Data from the magnetometer is integrated with a Lowrance Global Map 100 GPS. All data recorded from the magnetometer and GPS is handled in a desktop PC mounted inside the survey vessel. Data collected with the magnetometer is logged using Geometrics software, MagLog Lite®. This program has a layback feature that interpolates the towfish's location in relation to the GPS antenna, allowing archaeologists to record the location of the towfish as the magnetometer detects changes in the earth's ambient magnetic field (Figure 32). The system also allows archaeologists to record data in UTM's (Universal Transverse Mercator grid system) providing better provenience of the anomalies recorded. The advantages of conducting magnetometer surveys with the cesium model are readily apparent over the older proton precession model. Other remote sensing devices such as a sub-bottom profiler (Figures 33 and 34) and side scan sonar were employed as well (Figure 4). In May and July, an area of 20.6 km² was surveyed with these remote sensing devices.



Figure 29. Towfish cable with 10-meter increments denoted (at 30 meters).



Figure 30. Towfish cable secured to R/V *Seminole*'s stern.

May Field Operations

In May 2001, a small crew of 4-5 people conducted remote sensing surveys offshore of St. George Island. Two and a half weeks of magnetometer and sub-bottom profiler surveys located more than 50 magnetic anomalies, a majority of which ranged from one to nine gammas (nT). After sorting raw data through a statistical program to remove diurnal variation in the ambient magnetic field, most of these smaller false anomalies disappeared.

Magnetometer Survey: Using the Geometrics 881 optically-pumped cesium marine magnetometer, project staff decided to resurvey the offshore portion of the survey area to compare with 2000 data from a proton precession marine magnetometer. Six days of magnetometer survey was conducted. Tracklines initially ran east-west but north-south lanes completed saturation of areas with magnetic anomalies. After plotting anomalies recorded during survey in Earth Systems Research Institute's program ArcView®, targets were rated according to strength and systematically investigated in clusters (Tables 6 and 7).



Figure 31. Deploying the G-881 Cesium Marine Magnetometer.

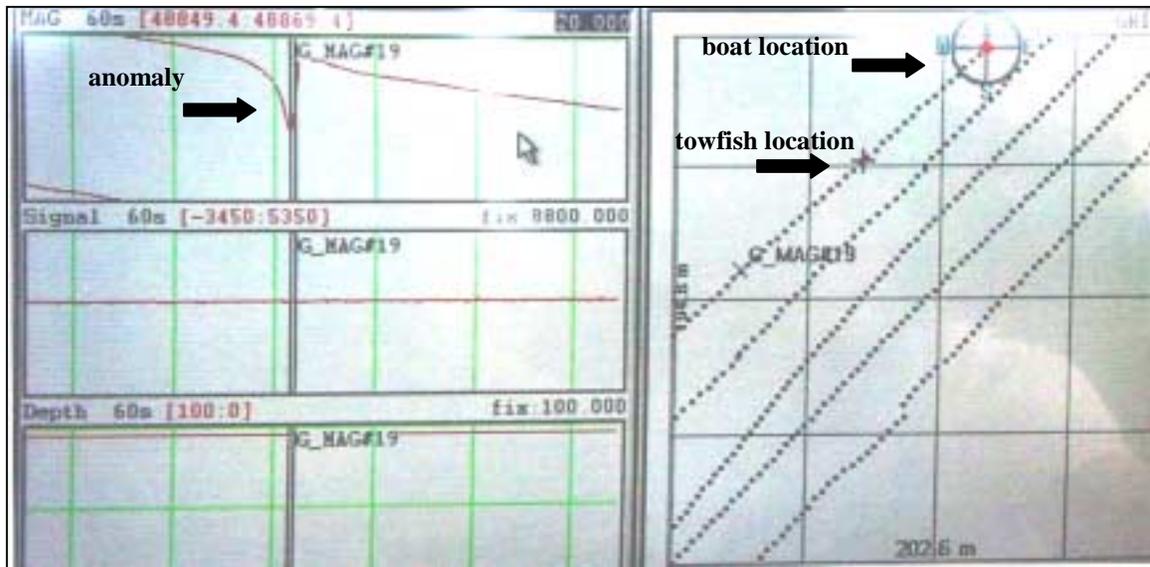


Figure 32. Example of magnetic anomaly on left, tracklines, boat, and towfish locations on right.

Sub-bottom profiler Survey: Four days of survey with the sub-bottom profiler were conducted in May (Figure 35). One survey lane recorded the sedimentary record on Dog Island’s Bayside. One predominant feature of this record is a paleochannel of the Carrabelle River that is located roughly north-northwest of Tyson’s Harbor. Off St. George Island, ten anomalies buried a few meters beneath the sediments were recorded. These anomalies are described in Table 8. A total area of 1.69 km² was surveyed with the sub-bottom profiler.



Figure 33. Sub-Bottom Profiler CPU.



Figure 34. DataSonic Chirp II Sub-Bottom Profiler towfish.

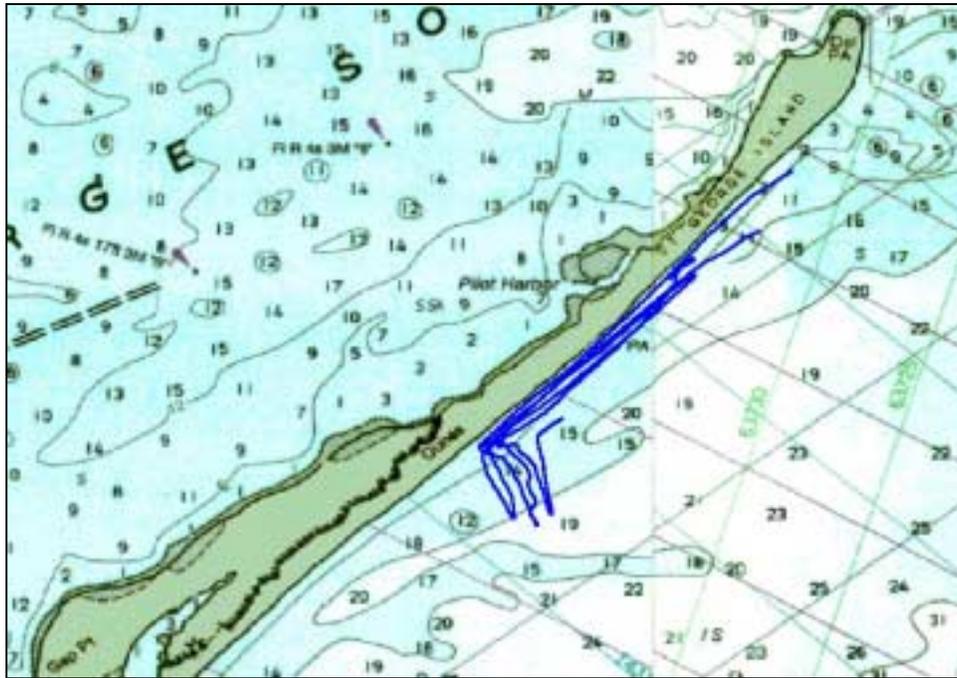


Figure 35. Sub-bottom profiler tracklines from May 2001.

June Field Operations

In May 2001, Brian and Emily Yates, of Tallahassee, located a wooden barrel or cask partially exposed near Gap Point on St. George Island (Figure 36). The Yates' contacted project staff in early June to investigate and possibly recover this wooden artifact as it lies in a relatively active environment subject to tides, waves and sedimentary erosion. Upon examination in late June, project staff tentatively identified the wooden barrel as possibly associated with the turpentine industry of the early 20th century. It has a 1.76 meter circumference, diameter of 53 centimeters (external), exposed length of 53 centimeters, and was constructed of 15 wooden staves measuring 8 - 12 centimeters wide and 1.5 centimeters thick. Four wooden hoops holding the staves in place were observed and relatively well preserved although several fragments broke off and were collected (Figure 37). Some small iron tacks or fasteners were observed. The uppermost portions of the barrel staves have been eroded as it is exposed during very low tides. It is filled with sediments and will provide a challenge for its recovery. Close monitoring of this artifact by St. George Island Park staff is the primary recommendation of this report until its conservation and curation can be initiated and fulfilled.



Figure 36. Wooden barrel on St. George Island.



Figure 37. Wooden barrel hoop fragments.

July Field Operations

Magnetometer Survey: As in May, the Geometrics 881 optically-pumped cesium marine magnetometer was employed both offshore and behind St. George Island. Combining May and July survey areas, 18.28 km² were surveyed with the magnetometer. Five days of magnetometer surveys were completed in July. Tracklines ran east-west along with north-south lanes to saturate areas with magnetic anomalies (Figure 39). After plotting anomalies recorded during survey in ArcView®, targets were rated according to strength and systematically investigated in clusters (Tables 6 and 7).

Contouring Magnetometer Data for Analysis: After data had been recorded in the field, it was post processed and plotted using ArcView®. To process raw magnetometer data, statistical formulae were used to smooth the diurnal effects of the sun on the magnetometer data throughout the day. These formulae provide a series of analysis to account for the variation occurring in the Earth's ambient magnetic field. The smoothed data was then manipulated in an Access database and subsequently contoured in ArcView® to demonstrate where anomalies were located. Data was also interpolated using UTM's (Universal Transverse Mercator grid system) to project the location of the anomalies in relation to the survey tracklines. Once the data is contoured, it was possible to determine the strength of the gamma readings in order to delineate the most promising targets to be investigated (Figure 38). After examining the contoured magnetometer data, 48 anomalies (some in clusters) have been discerned. Future diver investigations will test these anomalies for cultural materials. Clusters of anomalies will be investigated first as they are more likely to contain shipwreck remains than isolated anomalies.

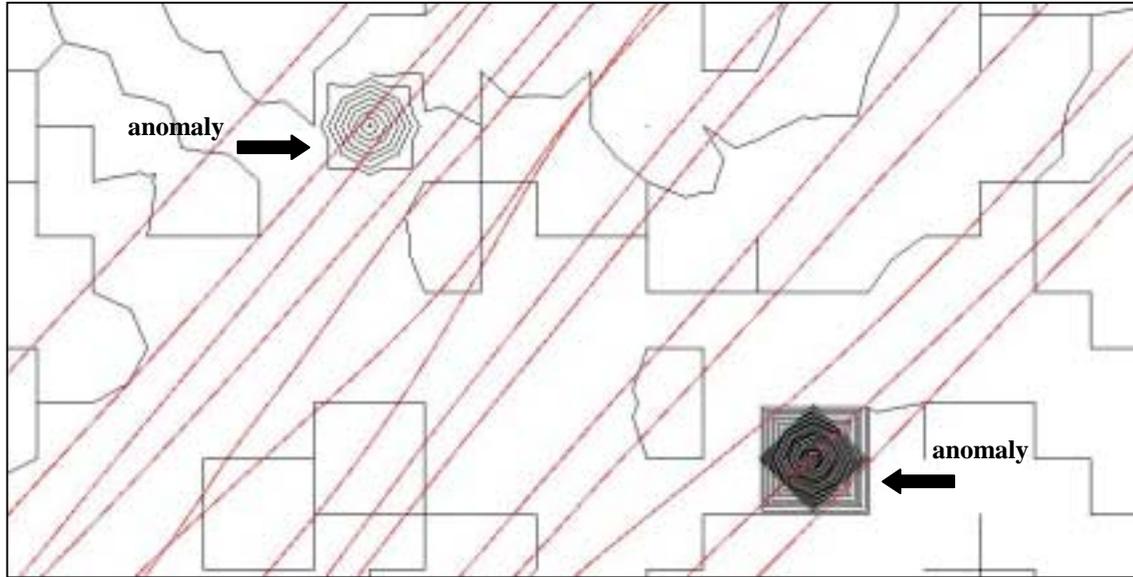


Figure 38. Contoured magnetometer data showing two discrete anomalies of substantial size.
 Note: Diagonal lines indicate survey tracklines.

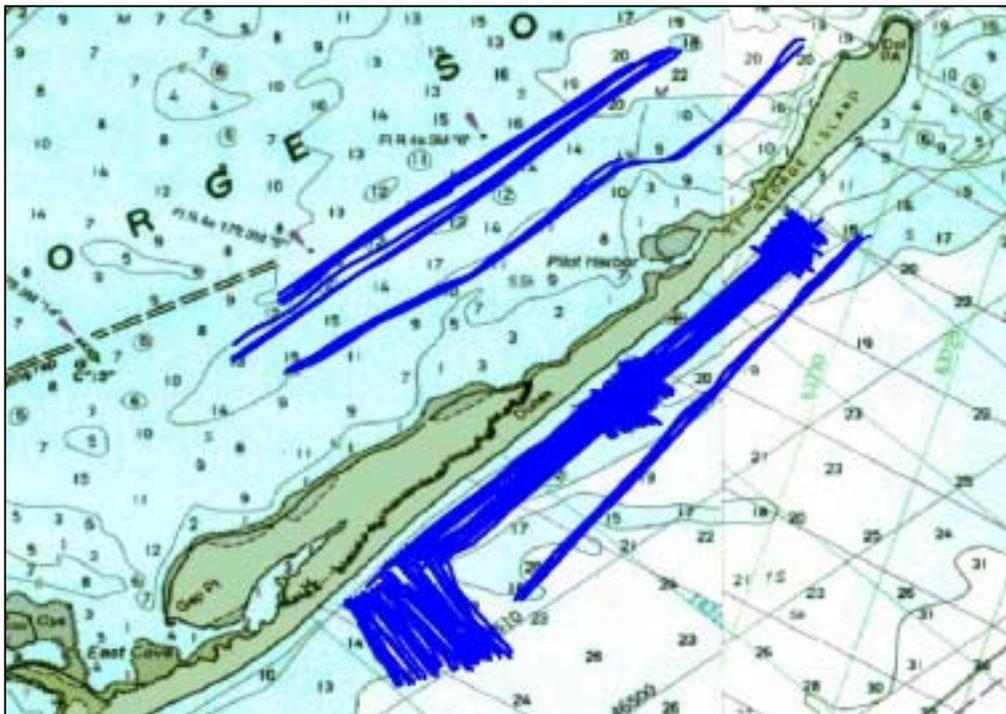


Figure 39. Magnetometer survey tracklines for 2001 field season.

Side Scan Sonar Survey: One day of side scan sonar survey was conducted behind St. George Island adjacent the channel to investigate magnetic anomalies recorded the previous day. The area surveyed comprised 0.63 km². No anomalies standing proud of the bottom were observed.

Diver Investigations

In May and July, divers investigated magnetic anomalies by conducting circle searches off buoyed GPS locations with hand-held underwater metal detectors. After registering a hit with the metal detector, divers either hand-fanned or probed the location with a three-foot long metal probe. A total of 46 dives were completed in May and July with over 48 hours of diving and 133 person days. In May, more than 50 anomalies were recorded (before statistical analysis to remove false anomalies caused by diurnal variation), four anomalies were investigated and one later reinvestigated by divers with metal detectors. In July, more than 100 anomalies were recorded (before statistical analysis), eight anomalies were investigated and two were reinvestigated by divers.

Diver visual survey with underwater metal detectors investigated one area containing 45-55 gamma (nT) anomalies. These anomalies were located in the same area as the 100-gamma anomaly recorded during 2000 with the proton precession magnetometer. After deploying a buoy on the GPS location of the towfish when it recorded the anomaly, divers conducted circle searches until they registered a hit with the metal detector, usually five to seven meters from the buoy. Hand fanning located a large quantity of modern steel cable debris scattered over a ten-meter square area. This cable had a diameter of 8-10 centimeters and appeared to have been discarded or lost.

Another anomaly investigated by divers registered as 20 gammas (nT). Within five meters of the buoyed location, a hit registered on the metal detector. After hand fanning 25 centimeters below the sand, divers located a WWII era (1940's) 100-lb concrete-filled practice aerial bomb (Figures 40 and 41). This practice bomb represents clear evidence of U.S. military actions that took place on Dog and St. George Islands in 1942 to practice for the Allied invasion of Normandy (Rogers 1986:265; Meide et al 2001). Divers from the Panama City Explosives Ordnance Disposal Unit recovered the bomb.



Figure 40. 1940s era U.S. military 100-pound concrete-filled practice aerial bomb.
Note: Tail section is severely corroded, gaping hole was buried in sediments when originally located.
(Courtesy of CWO4 Rex Rousseau)



Figure 41. Front view shows concrete filling and extent of casing corrosion on its underside.
Note: Tail section broke apart from main body after its recovery by EODU.
(Courtesy of CWO4 Rex Rousseau)

Pedestrian Metal Detector Survey

A pedestrian metal detector survey was conducted one day in July around the shallow perimeter of Marsh Island, behind St. George Island. A heavily-concreted wrought iron bolt was recovered along with a fragment of another on the surface in six inches of water. The origin and date of these bolts has yet to be determined. Several World War II era 50 caliber shells and casings were also located buried in sand and mud. Eight carbine rifle rounds with some crimping were identified as World War II era from a Springfield or M-14 rifle (Matthews pers. comm. 2001). Two recent (< 20 years) shotgun shell casings were also recovered during pedestrian metal detector survey.

Summary

Remote sensing and diver investigations of anomalies were conducted in May and July 2001 in search of the remains of HMS *Fox* (1799). *Fox*'s historical significance is due to its association with William Augustus Bowles, the self-proclaimed Director-General of the Creek Indian Nation of Muskogee. The 2000 and 2001 survey areas were defined based on examination of historic shoreline maps and rates of erosion and accretion. This data has determined that the location of the 1799 tip was located more than one kilometer west of its present location. In comparison with historic accounts that state that *Fox* wrecked on a shoal near the east end of the island, project staff defined a survey area further west of previous surveys conducted by FSU. More than one hundred anomalies were recorded during May and July surveys, although a majority registered one to nine gammas (nT). After statistically analyzing magnetometer data collected in 2001, almost 50 anomalies have been recorded. Several clusters of anomalies have been recorded and may represent the remains of shipwrecks. These anomalies will be investigated during the next field season of 2002. The sub-bottom profiler recorded ten subsurface anomalies as well that

warrant further investigation by probing and hand fanning. Future diver investigations of these anomalies will determine whether the remains of HMS *Fox* indeed lie in this survey area. To date, prehistoric ceramics (collected in 2000), two wrought iron bolts, WWII ordnance and ammunition and modern refuse have been collected. More archaeological surveys must be conducted to systematically examine this area that is likely to contain the remains of HMS *Fox* or other historic shipwrecks.

Conclusions and Recommendations

The Dog and St. George Islands Shipwreck Survey is committed to systematically examining the waters of Apalachee and Apalachicola Bays in Franklin County, Florida. The project has provided important information about the archaeological record within Franklin County's waters. Further work however, is necessary to determine the origin, function, and nationality of the vessel that lies at the bottom of Ballast Cove (8Fr903). Its comparisons to *California* may only be circumstantial, but the identity of Wreck A will potentially be gleaned in the future. Further investigations are necessary to determine the full extent of the site as well as its origin, function and nationality. Other sites within Ballast Cove will be located, investigated and recorded to comprehend the dynamics of this natural harbor and how it has been exploited historically as well as its role in the greater anthropological framework of the Florida Panhandle economic system.

Other previously recorded sites on Dog Island should also be further investigated. The Dog Island II site (8FR343), consisting of the remains of a prehistoric dugout canoe discovered in the late 1960's, and other artifacts including Fort Walton Incised and Check-Stamped pottery, has not been investigated since 1979. The East Pass Wreck (8FR813) should also be relocated and investigated. A thorough archaeological survey should continue to locate and catalogue the submerged cultural remains on and around Dog Island as well as those lying off St. George Island.

Research around and on St. George Island should and will continue surveys for HMS *Fox* as a part of the FSU Field School in Underwater Archaeology. Almost 50 magnetic and ten sub-bottom profiler anomalies wait to be investigated in the future. Perhaps the remains of *Fox* are represented by one or more of these anomalies. Testing of terrestrial magnetic anomalies recorded in 2000 should be investigated as well. Other submerged cultural resources discovered as a result of remote sensing surveys will also be catalogued and recorded for future investigation. Student and volunteer involvement as well as cooperation with state and local authorities are important in order to conduct these investigations of the submerged cultural resources around the barrier islands of Franklin County, Florida.

Appendix – Tables and Site Plan

Table 1. Provenience Designations and Field Specimen Categories.

PD # 1000 to 1499 = Dog Island
PD # 1500 to 1999 = St. George Island

<u>Field Specimen Number</u>	<u>Artifact Class</u>
1	Historic Ceramic
2	Prehistoric Ceramic
3	Smoking Pipe
4	Glass
5	Metal
6	Brick
7	Slate
8	Bone
9	Wood
10	Ballast
11	Chipped Stone
12	Other/Unidentified
13	Sediment Sample

Nomenclature

SC = Surface collection

HFT = Hand-fanned transect

Numbered units = Grid excavation units

Lettered units = Test pits

Table 2. Number of Artifacts by Field Specimen Number.

<u>Field Specimen Number</u>	<u>Number of Artifacts</u>
1 – Historic Ceramics	118
2 – Prehistoric Ceramics	3
3 – Smoking Pipe	14
4 - Glass	50
5 - Metal	297
6 - Brick	37
7 – Slate	0
8 - Bone	1
9 - Wood	73
10 - Ballast	382
11 – Chipped Stone	20
12 – Other/Unidentified	29
13 – Sediment Sample	1

Table 3. Provenience Designation and Field Specimen Log

Date Recovered	Locus or Site	Unit	Level	PD	FS	Count
7/20/2001	8FR903	4	1	1006	5	1
7/20/2001	8FR903	4	1	1006	5	1
7/21/2001	8FR903	4	1	1006	9	x
4/7/2001	8FR903	Surface Collection	x	1022	3	1
4/7/2001	8FR903	Surface Collection	x	1023	1	1
4/7/2001	8FR903	Surface Collection	x	1024	1	1
4/7/2001	8FR903	Surface Collection	x	1024	4	1
4/7/2001	8FR903	Surface Collection	x	1024	10	1
4/8/2001	8FR903	C	1	1025	1	1
4/8/2001	8FR903	C	1	1025	4	1
4/8/2001	8FR903	C	1	1025	4	1
4/8/2001	8FR903	C	1	1025	6	1
4/8/2001	8FR903	C	1	1025	10	1
4/8/2001	8FR903	C	1	1025	12	1
4/8/2001	8FR903	D	1	1026	1	1
4/8/2001	8FR903	D	1	1026	4	1
4/8/2001	8FR903	D	2	1027	1	4
4/8/2001	8FR903	D	2	1027	1	1
4/8/2001	8FR903	D	2	1027	3	2
4/8/2001	8FR903	D	2	1027	4	4
4/8/2001	8FR903	D	2	1027	4	1
4/8/2001	8FR903	D	2	1027	4	1
4/8/2001	8FR903	D	2	1027	5	1
4/8/2001	8FR903	D	2	1027	6	4
4/8/2001	8FR903	D	2	1027	10	14
4/8/2010	8FR903	Surface Collection	x	1028	10	1
7/2/2001	8FR903	Surface Collection	x	1029	1	1
7/2/2001	8FR903	Surface Collection	x	1029	1	1
7/2/2001	8FR903	Surface Collection	x	1029	4	1
7/3/2001	8FR903	HFT 1044N 998E	x	1030	1	1
7/3/2001	8FR903	HFT 1050N 1004E	x	1031	4	2
7/3/2001	8FR903	HFT 1050N 994E	x	1032	1	1
7/3/2001	8FR903	HFT 1048N 1002E	x	1033	1	1
7/3/2001	8FR903	HFT 1050N 1004E	x	1034	1	2
7/3/2001	8FR903	HFT 1050N 1004E	x	1034	1	1
7/3/2001	8FR903	HFT 1050N 1010E	x	1035	1	1
7/3/2001	8FR903	HFT 1050N 1010E	x	1035	1	1
7/3/2001	8FR903	HFT 1050N 1010E	x	1035	1	1

Table 3. Provenience Designation and Field Specimen Log

Contents/Material	Comments/ Description	Divers
Unidentified brass	Possible bearing/ same as PD1093 FS5	RG/WH/ZG
Fishing lure	Intrusive	RG/WH/ZG
Wood sample	Wood sample- ceiling planking	CH
Pipe stem	Located at 1000.29N 999.60E	WH/ZG
Whiteware	Locatd at 997.75N 896.44E/ blue on white decoration	WH/RG
Stoneware base	Located at 1005.61N 983.4E	DL/PG
Glass chunk w/ concretion	Located at 1005.61N 983.4E	DL/RG
Ballast	Located at 1005.61N 983.4E	DL/PG
Stoneware base	Brown glaze	ZG/BM/BD
Milk glass		ZG/BM/BD
Clear glass		ZG/BM/BD
Brick fragment		ZG/BM/BD
Ballast cobble		ZG/BM/BD
Coal		ZG/BM/BD
Whiteware	Blue on white decoration/ possible writing	MD/RG/SD
Green bottle glass	Possibly melted	MD/RG/SD
Stoneware	White glaze	PG/WH/ZG
Stoneware	Brown glaze	PG/WH/ZG
Pipe stems		PG/WH/ZG
Clear pane glass		MD/RG/ZG
Clear bottle glass		PG/WH/ZG
Green bottle glass		PG/WH/ZG
Copper sheathing		PG/WH/ZG
Brick fragments		PG/WH/ZG
Ballast stones		PG/WH/ZG
Ballast sample		CH/MD
Lead glazed earthenware	Possibly majolica/ collected from west ballast pile	CH/NG
Lead glazed earthenware	Collected from west ballast pile	CH/NG
Glass marble	Collected from west ballast pile	CH/NG
Whiteware	Blue on white decoration	RG/NG
Green bottle glass	Base fragment w/ kick up	LJ/CT
Unidentified whiteware	Rim sherd w/ blue decoration	CS/CH
Unidentified whiteware	Plate fragment w/ rim and base	LJ/CT
Stoneware tile		LJ/CT
Stoneware		LJ/CT
Stoneware		LJ/CT
Stoneware	Green glaze band/ handle attachment/ incised	LJ/CT
Unidentified ceramic		LJ/CT

Table 3. Provenience Designation and Field Specimen Log

7/3/2001	8FR903	HFT 1050N 1010E	x	1035	1	1
7/3/2001	8FR903	HFT 1050N 1002E	x	1036	11	2
7/4/2001	8FR903	HFT 1042N 990E	x	1037	1	1
7/4/2001	8FR903	HFT 1036N 989.5E	x	1038	1	1
7/4/2001	8FR903	HFT 1036N 989.5E	x	1038	1	13
7/4/2001	8FR903	HFT 1036N 989.5E	x	1038	1	1
7/4/2001	8FR903	HFT 1038N 990E	x	1039	1	1
7/4/2001	8FR903	HFT 1044N 996E	x	1040	1	1
7/4/2001	8FR903	HFT 1038N 992E	x	1041	12	1
7/4/2001	8FR903	HFT 1038N 1010E	x	1042	12	1
7/4/2001	8FR903	HFT 1046N 1012.90E	x	1043	1	1
7/4/2001	8FR903	HFT 1046N 1012.90E	x	1043	3	1
7/4/2001	8FR903	HFT 1046N 1012.90E	x	1043	4	1
7/4/2001	8FR903	HFT 1046N 1000.90E	x	1044	1	1
7/4/2001	8FR903	HFT 1040N 1004.1E	x	1045	9	3
7/4/2001	8FR903	HFT 1046N 1007E	x	1046	1	1
7/4/2001	8FR903	HFT 1042N 1002E	x	1047	1	1
7/4/2001	Survey Locus 2001-01	Surface Collection	x	1048	1	1
7/4/2001	Survey Locus 2001-01	Surface Collection	x	1048	1	1
7/4/2001	Survey Locus 2001-01	Surface Collection	x	1048	1	1
7/4/2001	Survey Locus 2001-01	Surface Collection	x	1048	1	1
7/4/2001	Survey Locus 2001-02	Surface Collection	x	1049	1	1
7/4/2001	Survey Locus 2001-02	Surface Collection	x	1049	6	1
7/4/2001	Survey Locus 2001-02	Surface Collection	x	1049	10	1
7/5/2001	8FR903	HFT 1036N 990E	x	1050	1	1
7/5/2001	8FR903	HFT 1036N 1006E	x	1051	6	1
7/5/2001	8FR903	HFT 1036N 1006E	x	1051	12	1
7/5/2001	8FR903	HFT 1036N 1008E	x	1052	12	1
7/5/2001	8FR903	6	1	1053	1	1
7/5/2001	8FR903	6	1	1053	1	1
7/5/2001	8FR903	6	1	1053	1	1
7/5/2001	8FR903	6	1	1053	3	2
7/5/2001	8FR903	6	1	1053	4	2
7/5/2001	8FR903	6	1	1053	5	1
7/5/2001	8FR903	6	1	1053	6	4
7/5/2001	8FR903	6	1	1053	10	8
7/5/2001	8FR903	6	1	1053	11	6
7/5/2001	8FR903	6	2	1054	4	3
7/5/2001	8FR903	6	2	1054	4	1
7/5/2001	8FR903	6	2	1054	5	5

Table 3. Provenience Designation and Field Specimen Log

Tin enameled earthenware		LJ/CT
Flint		LJ/CT
Earthenware		WH/DL
Unidentified ceramic		WH/DL
Earthenware tile	Writing and possible makers marks/ 2 bags	WH/DL
Unidentified ceramic		WH/DL
Stoneware		WH/DL
Earthenware		WH/DL
Coal		WH/DL
Coal		MD/CS
Unidentified ceramic		ZG/LJ
Pipe stem		ZG/LJ
Milk glass		ZG/LJ
Unidentified ceramic	Blue transfer print	ZG/LJ
Wood fragments		ZG/LJ
Earthenware	Brown glaze	ZG/LJ
Unidentified ceramic	Blue transfer print/ same design as PD1044 FS1	ZG/LJ
Stoneware base	10.2m at 180 degrees from datum point	CH
Stoneware transfer print	4.3m at 300 degrees from datum point	CH
Unidentified ceramic	4m at 330 degrees from datum point/ blue decoration	CH
Stoneware	4m at 290 degrees from datum point/ blue-red painted decoration	CH
Stoneware	3m from datum point/ neck sherd	CH
Brick fragment	3m from datum point	CH
Ballast sample	3m from datum point	CH
Unidentified ceramic	Green glaze on 1 side/ possible tile fragment	CT/DL
Brick fragment		CS/NG
Coal		CS/NG
Coal		CS/NG
Unidentified ceramic		?
Unidentified ceramic	Foot ring	?
Unidentified ceramic	Possibly prehistoric	?
Pipe stems		?
Clear glass		?
Metal concretion	Fastener impressions	?
Brick fragments		?
Ballast stones		?
Flint		?
Green bottle glass	Molded decoration/ "18.."	CH/LJ
Clear bottle glass		CH/LJ
Metal concretion		CH/LJ

Table 3. Provenience Designation and Field Specimen Log

7/5/2001	8FR903	6	2	1054	5	1
7/5/2001	8FR903	6	2	1054	5	2
7/5/2001	8FR903	6	2	1054	5	17
7/5/2001	8FR903	6	2	1054	6	2
7/5/2001	8FR903	6	2	1054	9	2
7/5/2001	8FR903	6	2	1054	11	1
7/5/2001	8FR903	6	2	1054	12	2
7/5/2001	8FR903	6	2	1054	12	2
7/7/2001	8FR903	7	1	1055	1	1
7/7/2001	8FR903	7	1	1055	1	1
7/7/2001	8FR903	7	1	1055	1	1
7/7/2001	8FR903	7	1	1055	3	1
7/7/2001	8FR903	7	1	1055	4	2
7/7/2001	8FR903	7	1	1055	4	3
7/7/2001	8FR903	7	1	1055	4	1
7/7/2001	8FR903	7	1	1055	4	2
7/7/2001	8FR903	7	1	1055	4	1
7/7/2001	8FR903	7	1	1055	5	2
7/7/2001	8FR903	7	1	1055	5	5
7/7/2001	8FR903	7	1	1055	5	1
7/7/2001	8FR903	7	1	1055	5	6
7/7/2001	8FR903	7	1	1055	5	13
7/7/2001	8FR903	7	1	1055	5	1
7/7/2001	8FR903	7	1	1055	6	3
7/7/2001	8FR903	7	1	1055	9	4
7/7/2001	8FR903	7	1	1055	11	9
7/7/2001	8FR903	7	1	1055	12	2
7/7/2001	8FR903	7	1	1055	13	1
7/7/2001	Survey Locus 2001-03	Surface Collection	x	1056	1	5
7/7/2001	Survey Locus 2001-03	Surface Collection	x	1056	1	1
7/7/2001	Survey Locus 2001-03	Surface Collection	x	1056	10	1
7/9/2001	8FR903	7	2	1057	4	1
7/9/2001	8FR903	7	2	1057	5	1
7/9/2001	8FR903	7	2	1057	5	14
7/9/2001	8FR903	7	2	1057	5	1
7/9/2001	8FR903	7	2	1057	6	1
7/9/2001	8FR903	7	2	1057	9	1
7/9/2001	8FR903	7	2	1057	9	3
7/9/2001	8FR903	7	2	1057	10	9
7/9/2001	8FR903	7	2	1057	12	1

Table 3. Provenience Designation and Field Specimen Log

Folded metal		CH/LJ
Metal concretion	Fastener impressions	CH/LJ
Unidentified metal	Possibly sheathing	CH/LJ
Brick fragments		CH/LJ
Wood fragments	Fastener impressions	CH/LJ
Flint	Possibly ballast	CH/LJ
Quartz ballast		CH/LJ
Unidentified		CH/LJ
Stoneware		RG/PG
Stoneware	Foot ring	RG/PG
Earthenware	Possibly burned	RG/PG
Pipe stem		RG/PG
Red glass		RG/PG
Clear pane glass		RG/PG
Green bottle glass		RG/PG
Clear bottle glass		RG/PG
Clear glass chunk		RG/PG
Screws		RG/PG
Nails	Wire and cut	RG/PG
Metal concretion		RG/PG
Metal concretion	Fastener impressions	RG/PG
Unidentified metal	Possible sheathing	RG/PG
Unidentified metal		RG/PG
Brick fragments		RG/PG
Wood fragments	Fastener impressions	RG/PG
Flint		RG/PG
Unidentified		RG/PG
Sediment sample		RG/PG
Earthenware	Possible pipe	WH/NG
Earthenware		WH/NG
Ballast sample		WH/NG
Intact milk glass vase	Intact sediments	CS/RG
lead fishing weight	Intrusive	CS/RG
Unidentified metal	Possible sheathing	CS/RG
Metal concretion	Fastener impressions	CS/RG
Brick fragment		CS/RG
Wood fragment	Possible knife handle	CS/RG
Wood fragments	Fastener impressions	CS/RG
Ballast stones		CS/RG
Unidentified		CS/RG

Table 3. Provenience Designation and Field Specimen Log

7/9/2001	8FR903	7	2	1057	12	1
7/9/2001	Survey Locus 2001-04	Surface Collection	x	1058	1	4
7/9/2001	Survey Locus 2001-04	Surface Collection	x	1058	10	1
7/9/2001	Survey Locus 2001-04	Surface Collection	x	1058	12	2
7/10/2001	8FR903	HFT 1034N 992E	x	1059	1	1
7/10/2001	8FR903	8	1	1060	4	1
7/10/2001	8FR903	8	1	1060	5	4
7/10/2001	8FR903	8	1	1060	9	1
7/10/2001	8FR903	8	1	1060	10	3
7/12/2001	8FR903	8	1	1060	3	1
7/12/2001	8FR903	8	1	1060	5	1
7/12/2001	8FR903	8	1	1060	5	28
7/12/2001	8FR903	8	1	1060	5	1
7/12/2001	8FR903	8	1	1060	5	1
7/12/2001	8FR903	8	1	1060	5	5
7/12/2001	8FR903	8	1	1060	6	8
7/12/2001	8FR903	8	1	1060	9	5
7/12/2001	8FR903	8	1	1060	10	13
7/12/2001	8FR903	9	1	1061	1	1
7/12/2001	8FR903	9	1	1061	4	1
7/12/2001	8FR903	9	1	1061	5	1
7/12/2001	8FR903	9	1	1061	5	1
7/12/2001	8FR903	9	1	1061	5	5
7/12/2001	8FR903	9	1	1061	5	4
7/12/2001	8FR903	9	1	1061	6	2
7/12/2001	8FR903	9	1	1061	9	4
7/12/2001	8FR903	9	1	1061	10	6
7/12/2001	8FR903	HFT 1034N 994E	x	1062	9	1
7/12/2001	8FR903	HFT 1024N 996E	x	1063	1	1
7/12/2001	8FR903	HFT 1028N 994E	x	1064	1	1
7/12/2001	8FR903	HFT 1030N 990E	x	1065	4	1
7/12/2001	8FR903	HFT 1026N 996E	x	1066	4	2
7/12/2001	8FR903	HFT 1026N 990E	x	1067	4	1
7/12/2001	8FR903	HFT 1030N 994E	x	1068	1	1
7/13/2001	8FR903	9	1	1069	3	1
7/13/2001	8FR903	9	1	1069	4	1
7/13/2001	8FR903	9	1	1069	5	10
7/13/2001	8FR903	9	1	1069	5	1
7/13/2001	8FR903	9	1	1069	10	3
7/13/2001	8FR903	10	1	1070	4	1

Table 3. Provenience Designation and Field Specimen Log

Coal		CS/RG
Earthenware tile	Writing and possible makers marks	ZG/CT
Ballast sample		ZG/CT
Unidentified		ZG/CT
Stoneware base		RG/CT
Green bottle glass		ZG/WH
Metal concretions		ZG/WH
Wood	Fastener impressions	ZG/WH
Ballast stones		ZG/WH
Pipe stem		ZG/WH
Unidentified metal	Intact circular fitting	ZG/KP
Brass tacks		ZG/KP
Brass tack w/ attached fiber		ZG/KP
lead fishing weight	Intrusive	ZG/KP
Metal concretion	Fastener impressions	ZG/KP
Brick fragments		ZG/KP
Wood fragments	Fastener impressions	ZG/KP
Ballast stones		ZG/KP
Whiteware w/ red decoration	Possibly burned	CH/KP
Clear pane glass		CH/CT
lead fishing weight	Intrusive	CH/CT
Brass wood screws		CH/CT
Brass tacks		CH/CT
Metal concretions		CH/CT
Brick fragments		CH/CT
Wood fragments	Fastener impressions	CH/CT
Ballast stones		CH/CT
Wood fragment	Fastener impression	RG/CT
Lead glazed earthenware	Blue on white hand painted decoration	CS/WH
Unidentified ceramic		CS/WH
Glass chunk		CS/WH
Green bottle glass		CS/WH
Brown bottle glass		CS/WH
Earthenware tile		CS/WH
Pipe stem		CH/CT
Green bottle glass		CH/CT
Brass tacks		CH/CT
Unidentified metal	Possible bearing	CH/CT
Ballast stones		CH/CT
Green bottle glass		CH/CT

Table 3. Provenience Designation and Field Specimen Log

7/13/2001	8FR903	10	1	1070	5	1
7/13/2001	8FR903	10	1	1070	5	4
7/13/2001	8FR903	10	1	1070	5	17
7/13/2001	8FR903	10	1	1070	5	1
7/13/2001	8FR903	10	1	1070	5	1
7/13/2001	8FR903	10	1	1070	5	2
7/13/2001	8FR903	10	1	1070	5	1
7/13/2001	8FR903	10	1	1070	5	1
7/13/2001	8FR903	10	1	1070	9	1
7/13/2001	8FR903	10	1	1070	9	1
7/13/2001	8FR903	10	1	1070	10	18
7/13/2001	8FR903	10	1	1070	12	3
7/19/2001	8FR903	10	1	1070	5&9	1
7/9/2001	Survey Locus 2001-05	Surface Collection	x	1071	1	1
7/9/2001	Survey Locus 2001-05	Surface Collection	x	1071	9	1
7/13/2001	8FR903	11	1	1072	1	1
7/13/2001	8FR903	11	1	1072	1	1
7/13/2001	8FR903	11	1	1072	1	1
7/13/2001	8FR903	11	1	1072	4	2
7/13/2001	8FR903	11	1	1072	4	1
7/13/2001	8FR903	11	1	1072	5	1
7/13/2001	8FR903	11	1	1072	5	14
7/13/2001	8FR903	11	1	1072	5	2
7/13/2001	8FR903	11	1	1072	5	6
7/13/2001	8FR903	11	1	1072	9	8
7/13/2001	8FR903	11	1	1072	10	9
7/13/2001	8FR903	11	1	1072	10	1
7/13/2001	8FR903	11	1	1072	12	3
7/13/2001	8FR903	11	1	1072	13	x
7/21/2001	8FR903	11	1	1072	9	1
7/13/2001	8FR903	HFT 1026N 1002E	x	1073	8	1
7/13/2001	8FR903	HFT 1022N 1006E	x	1074	1	1
7/13/2001	8FR903	HFT 1022N 1008E	x	1075	1	1
7/13/2001	8FR903	HFT 1024N 1004E	x	1076	1	1
7/14/2001	8FR903	12	1	1077	1	1
7/14/2001	8FR903	12	1	1077	5	2
7/14/2001	8FR903	12	1	1077	5	13
7/14/2001	8FR903	12	1	1077	6	1
7/14/2001	8FR903	12	1	1077	10	11
7/17/2001	8FR903	12	1	1077	1	1

Table 3. Provenience Designation and Field Specimen Log

Unidentified metal	Possible sheathing	CH/CT
Metal concretions	Fastener impressions	CH/CT
Brass tacks		CH/CT
Unidentified metal	Possible bearing/ same as PD1069 FS5	CH/CT
Brass	Contains bearing same as PD1093 FS 5 and ring like PD 1093 FS 5	?
Brass tacks		?
Unidentified lead		?
Unidentified metal rod		?
Wood fragment		CH/CT
Wood fragment	Associated with PD 1070 FS 5	?
Ballast stones		CH/CT
Unidentified	Possible rubber material	CH/CT
Composite concretion	Rigging components and wood/metal pulley component	WH/CS
Stoneware base		ZG/MA
Wooden pulley w/ concretion		ZG/MA
Stoneware	Possibly Rhenish	CS/KK
Earthenware		CS/KK
Earthenware	Brown glaze	CS/KK
Clear bottle glass		CS/KK
Green bottle glass		CS/KK
Brass ring		CS/KK
Brass tacks		CS/KK
Fishing lure	Intrusive	CS/KK
Metal concretions	Fastener impressions	CS/KK
Wood fragments	Fastener impressions	CS/KK
Ballast stones		CS/KK
Flint	Possibly flaked	CS/KK
Unidentified	Possible rubber material	CS/KK
Sediment sample		CS/KK
Wood sample	Wood sample- bottom planking	CH
Bone		ZG/KK
Stoneware		ZG/KK
Stoneware		ZG/KK
Stoneware transfer print		ZG/KK
Stoneware		CH/ZG
Brass tacks		CH/ZG
Metal concretions		CH/ZG
Brick fragment		CH/ZG
Ballast stones		CH/ZG
Stoneware	Black glaze	RG/CB

Table 3. Provenience Designation and Field Specimen Log

7/17/2001	8FR903	12	1	1077	2	2
7/17/2001	8FR903	12	1	1077	3	1
7/17/2001	8FR903	12	1	1077	4	2
7/17/2001	8FR903	12	1	1077	4	1
7/17/2001	8FR903	12	1	1077	5	9
7/17/2001	8FR903	12	1	1077	5	1
7/17/2001	8FR903	12	1	1077	6	4
7/17/2001	8FR903	12	1	1077	9	1
7/17/2001	8FR903	12	1	1077	10	20
7/17/2001	8FR903	12	1	1077	11	1
7/18/2001	8FR903	12	1	1077	1	1
7/18/2001	8FR903	12	1	1077	1	1
7/18/2001	8FR903	12	1	1077	2	1
7/18/2001	8FR903	12	1	1077	3	1
7/18/2001	8FR903	12	1	1077	6	2
7/18/2001	8FR903	12	1	1077	9	5
7/18/2001	8FR903	12	1	1077	10	20
7/14/2001	8FR903	HFT 1028N 1010E	x	1078	1	1
7/14/2001	8FR903	HFT 1028N 1010E	x	1078	5	1
7/14/2001	8FR903	HFT 1028N 1010E	x	1078	9	1
7/14/2001	8FR903	HFT 1028N 1008E	x	1079	10	1
7/14/2001	8FR903	HFT 1028N 1008E	x	1079	12	1
7/14/2001	8FR903	HFT 1028N 1004E	x	1080	5	1
7/14/2001	8FR903	HFT 1030N 1004E	x	1081	6	1
7/14/2001	8FR903	HFT 1030N 1000E	x	1082	5	7
7/14/2001	8FR903	16	1	1083	1	1
7/14/2001	8FR903	16	1	1083	1	1
7/14/2001	8FR903	16	1	1083	10	4
7/14/2001	8FR903	16	1	1083	12	1
7/14/2001	8FR903	17	1	1084	1	1
7/14/2001	8FR903	17	1	1084	4	1
7/14/2001	8FR903	17	1	1084	10	1
7/14/2001	8FR903	17	1	1084	11	1
7/14/2001	8FR903	17	1	1084	12	2
7/18/2001	8FR903	13	1	1085	3	1
7/18/2001	8FR903	13	1	1085	5	5
7/18/2001	8FR903	13	1	1085	10	21
7/18/2001	8FR903	14	1	1086	1	1
7/18/2001	8FR903	14	1	1086	1	1
7/18/2001	8FR903	14	1	1086	1	1

Table 3. Provenience Designation and Field Specimen Log

Prehistoric ceramic	Unglazed/ grog tempered/ 2 sherds fit together	RG/CB
Pipe stem		RG/CB
Green bottle glass		RG/CB
Clear pane glass		RG/CB
Metal concretions	Fastener impressions	RG/CB
Unidentified brass		RG/CB
Brick fragments		RG/CB
Wood fragment		RG/CB
Ballast stones		RG/CB
Flint	Possible gun flint	RG/CB
Stoneware	Incised	CH
Earthenware		CH
Prehistoric ceramic	Unglazed/ Grog tempered	CH
Bowl fragment	Writing "Balme London E"	CH
Brick fragments		CH
Wood fragments		CH
Ballast stones		CH
Earthenware		CB/KP
Metal concretion		CH/ZG
Wood fragment	Fastener impression	CB/KP
Ballast stone	Slate	CB/KP
Unidentified		CB/KP
Metal concretion		CB/KP
Brick fragment		CB/KP
Metal concretions		CB/KP
Stoneware		ZG/WH
Earthenware tile		ZG/CH
Ballast stones		CH/ZG
Whetstone		ZG/CH
Stoneware		WH/CS/CT
Clear bottle glass		WH/CS/CT
Ballast stone		WH/CS/CT
Flint		WH/CS/CT
Unidentified	Possibly plastic	WH/CS/CT
Pipe stem		?
Metal concretions		?
Ballast stones		?
Stoneware	Green glaze	RG/CB
Earthenware	White glaze	RG/CB
Stoneware		RG/CB

Table 3. Provenience Designation and Field Specimen Log

7/18/2001	8FR903	14	1	1086	1	12
7/18/2001	8FR903	14	1	1086	1	1
7/18/2001	8FR903	14	1	1086	4	1
7/18/2001	8FR903	14	1	1086	5	2
7/18/2001	8FR903	14	1	1086	5	12
7/18/2001	8FR903	14	1	1086	10	162
7/21/2001	8FR903	14	1	1086	9	13
7/18/2001	8FR903	15	1	1087	1	1
7/18/2001	8FR903	15	1	1087	1	2
7/18/2001	8FR903	15	1	1087	1	1
7/18/2001	8FR903	15	1	1087	1	1
7/18/2001	8FR903	15	1	1087	1	1
7/18/2001	8FR903	15	1	1087	3	1
7/18/2001	8FR903	15	1	1087	5	2
7/18/2001	8FR903	15	1	1087	5	11
7/18/2001	8FR903	15	1	1087	9	1
7/18/2001	8FR903	15	1	1087	10	52
7/18/2001	8FR903	15	1	1087	12	1
7/19/2001	8FR903	Surface Collection	x	1088	1	1
7/19/2001	8FR903	19	1	1089	1	1
7/19/2001	8FR903	19	1	1089	1	1
7/19/2001	8FR903	19	1	1089	1	1
7/19/2001	8FR903	19	1	1089	3	1
7/19/2001	8FR903	19	1	1089	4	2
7/19/2001	8FR903	19	1	1089	4	1
7/19/2001	8FR903	19	1	1089	5	4
7/19/2001	8FR903	19	1	1089	5	2
7/19/2001	8FR903	19	1	1089	12	1
7/19/2001	8FR903	19	1	1089	12	2
7/19/2001	8FR903	Unit cleanup	x	1090	1	1
7/19/2001	8FR903	Unit cleanup	x	1090	5	1
7/19/2001	8FR903	Unit cleanup	x	1090	9	1
7/20/2001	8FR903	1	1	1091	5	11
7/21/2001	8FR903	1	1	1091	9	6
7/20/2001	8FR903	2	1	1092	9	1
7/20/2001	8FR903	3	1	1093	5	1
7/20/2001	8FR903	3	1	1093	5	2
7/20/2001	8FR903	3	1	1093	5	4
7/20/2001	8FR903	3	1	1093	5	2
7/20/2001	8FR903	3	1	1093	9	1

Table 3. Provenience Designation and Field Specimen Log

Earthenware tile	Writing	RG/CB
Earthenware	Blue on white hand painted/ possible majolica	RG/CB
Green bottle glass		RG/CB
Brass tacks		RG/CB
Metal concretions		RG/CB
Ballast stones		RG/CB
Wood sample	Wood sample- futtock	CH
Earthenware	Lead glazed	CB/CS
Stoneware		CB/CS
Unidentified		CB/CS
Stoneware		CB/CS
Stoneware base		CB/CS
Pipe stem		CB/CS
Brass tacks		CB/CS
Metal concretions	Fastener impressions	CB/CS
Wood fragment	Fastener impression	CB/CS
Ballast stones		CB/CS
Lead fishing weight	Intrusive	CB/CS
Earthenware	Lead glazed/ hand painted/ possible majolica	WH/RG
Stoneware transfer print		CH/RG
Earthenware	Lead glazed/ blue hand painted design	CH/RG
Earthenware		CH/RG
Pipe stem		CH/RG
Green bottle glass		CH/RG
Clear bottle glass	Base	CH/RG
Unidentified metal	Possible sheathing	CH/RG
Metal concretions	Fastener impressions	CH/RG
Coal		CH/RG
Unidentified		CH/RG
Unidentified ceramic		WH/RG/ZG
Metal concretion	Fastener impression	WH/RG/ZG
Wood stopper		WH/RG/ZG
Brass tacks		WH/RG/ZG
Wood sample	Wood sample- keel	CH
Wood fragment		RG/CH/ZG
Brass ring		RG/WH/ZG
Bras tacks		RG/WH/ZG
Unidentified brass	Possible bearings/ associated with brass rings	RG/WH/ZG
Metal concretions		RG/WH/ZG
Wood fragment		RG/WH/ZG

Table 3. Provenience Designation and Field Specimen Log

7/13/2001	8FR903	HFT 1022N 1002E	x	1094	1	1
7/20/2001	8FR903	19	1	1094	6	2
7/13/2001	8FR903	HFT 1020N 998E	x	1095	1	2
?	8FR903	No Provenience	x	1096	1	3
?	8FR903	No Provenience	x	1096	4	1
7/30/2001	St. George Is./Backside	Surface Collection	x	1505	5	4
7/30/2001	St. George Is./Backside	Surface Collection	x	1505	5	1
7/30/2001	St. George Is./Backside	Surface Collection	x	1506	5	8
7/30/2001	St. George Is./Backside	Surface Collection	x	1506	5	2
7/30/2001	St. George Is./Backside	Surface Collection	x	1506	5	2
6/23/2001	St. George Island	Surface Collection	x	1507	9	7

Table 3. Provenience Designation and Field Specimen Log

Unidentified whiteware	Green decortaion	ZG/KK
Brick fragments		RG/WH/ZG
Earthenware		ZG/KK
Stoneware	1 sherd with blue hand painted decoration	?
Clear glass	Case bottle base	?
Brass shell casings	Located at 29 44.997, 84 3.793	CB/NG/LJ
Unidentified metal	Located at 29 44.997, 84 3.793	CB/NG/LJ
Bullet shells	Metal detector survey/ west side of Marsh Is./North of isolated grass patch	MD/ZG/KP
Shell casings	Metal detector survey/ west side of Marsh Is./North of isolated grass patch	MD/ZG/KP
Unidentified metal	Metal detector survey/ west side of Marsh Is./North of isolated grass patch	MD/ZG/KP
Barrel hoop fragments		MD/CH

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