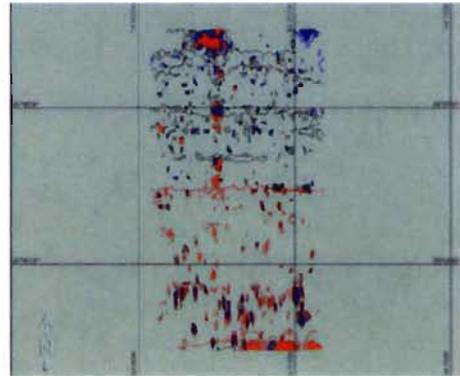
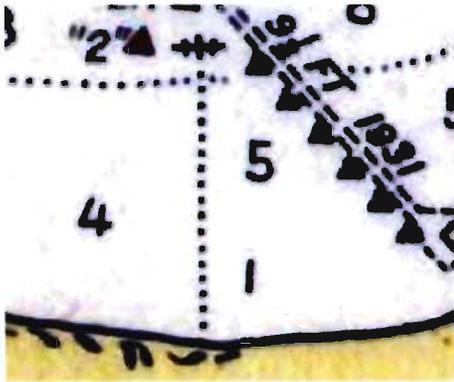


CHARLOTTE HARBOR SHIPWRECK SURVEY FOR 2005



Report of Investigations Number 3
Nautical Archaeology Program
Mote Marine Laboratory
Sarasota, Florida
2005

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by
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J. COZ Cozzi, Principal Investigator

ABSTRACT

This report summarizes a remote-sensing archaeological survey undertaken by Mote Marine Laboratory of contact period, colonial and American archaeological sites in Manatee, Charlotte, Lee, and DeSoto counties of central and southwest Florida. The project was funded by an historic preservation grant provided by the Florida Bureau of Historic Preservation with additional matching resources provided by the Mote Marine Laboratory. Project methodology included a background review of archaeological, historical and environmental data, field survey, and data reduction, analysis and interpretation. Project archaeologists investigated 400 hectares (1,000 acres) through remote sensing, including seven previously reported archaeological sites. Detected anomalies were ranked in terms of priority for future ground truthing. The project located two potentially significant archaeological sites in need of additional assessment, and probably eligible for the National Register of Historic Places. One of these is perhaps the oldest industrial site in south Florida, while the other constitutes extensive undisturbed remains of a late-19th-century railway dock facility.

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CHAPTER ONE

INTRODUCTION

Mote Marine Laboratory (Mote) hired a nautical archaeologist in August of 2003 to conduct research into shipwrecks and other submerged cultural resources in central and southwestern Florida, where Mote has conducted biological and environmental studies for the past 50 years. The Nautical Archaeology Program will investigate underwater archaeological sites and interpret them to the public through Mote Aquarium located in Sarasota. Mote's long-term goal is to supplement the ecological displays already in existence with cultural interpretive material that will explain how humans used the water systems, which other Mote scientists have studied from a biological perspective. Mote is in the midst of a five-year study of the Charlotte Harbor National Estuary and has a field station in Charlotte Harbor, both of which made an attractive area to begin cultural investigations.

Florida has significant archaeological sites located in its coastal waters. Prehistoric and historic Native American sites range from isolated finds to shell and sand middens, as well as village complexes. Sites of this type may also lie offshore where prehistoric shorelines that extended some 100 miles into the Gulf of Mexico now are inundated. Native American sites are generally found close to the water where marine and estuarine resources were easily exploited. When Europeans and Americans explored and settled Florida it was these same coastal areas that they picked to begin a journey of discovery or to place a mission, fort, farm or *rancho*. As a result Florida waters contain a large number of sites including shipwrecks. These wrecks are "time capsules" of the material culture of people in the past. These archaeological sites are windows into the lives of Native Americans, soldiers, cow hunters, citrus growers, fishermen, boat builders and many others. (Smith, Miller, Kelley and Harbin 1997)

Charlotte Harbor has long and rich maritime history dating back to Pre-Columbian, Native-American waterway usage, through explorations and attempted settlements by European colonial powers, to permanent settlement and development in

the American Period. This maritime history is represented in the archaeological record by sites in the rivers, bays and Gulf of Mexico waters in and around Charlotte Harbor. No systematic submerged cultural resource assessment has previously been undertaken.

Mote intends that this project will serve as the first of several investigations into the submerged cultural resources of Charlotte Harbor. This project is modeled on the successful Pensacola Shipwreck Survey of the 1990's that inventoried wrecked and abandoned sites in Pensacola Bay and the nearby Gulf of Mexico waters. Mote hopes to build a broad-based community effort to find and document shipwrecks, piers and other archaeological sites.

This first remote-sensing phase will require a subsequent ground truthing phase to identify targets as either significant archaeological sites or modern debris. The identification of significant remains will hopefully lead to a full-scale archaeological excavation. Mote will interpret research results to the public at each phase.

Mote obtained historic preservation grant assistance to conduct a remote-sensing survey to locate potential submerged archaeological sites. An important secondary objective - related to this primary goal - was to demonstrate the usefulness of modern state-of-the-art, remote-sensing equipment provided by a subcontractor in locating significant archaeological sites, with the aim of securing local funding for Mote to acquire these tools and to continue this type of survey work on a regular basis.

The loss of Mote's Charlotte Harbor Pineland Field Station to Hurricane Charlie in August of 2004 threatened to stop the project before it began by destroying project housing for the survey crew, and Hurricane Wilma in October of 2005 delayed fieldwork yet again. Despite these challenges, Mote investigated 400 hectares (1,000 acres) of Charlotte Harbor and identified 74 magnetic anomalies and 54 acoustic targets. A partial visual inspection was only possible at one cultural occurrence with terrestrial and submerged components.

The intended survey areas are contained within the red-colored blocks in Figure 1. They consist of nine lettered areas, but consist mainly of the areas around Punta Gorda and the town of Charlotte Harbor and one area up the Peace River at Liverpool that saw

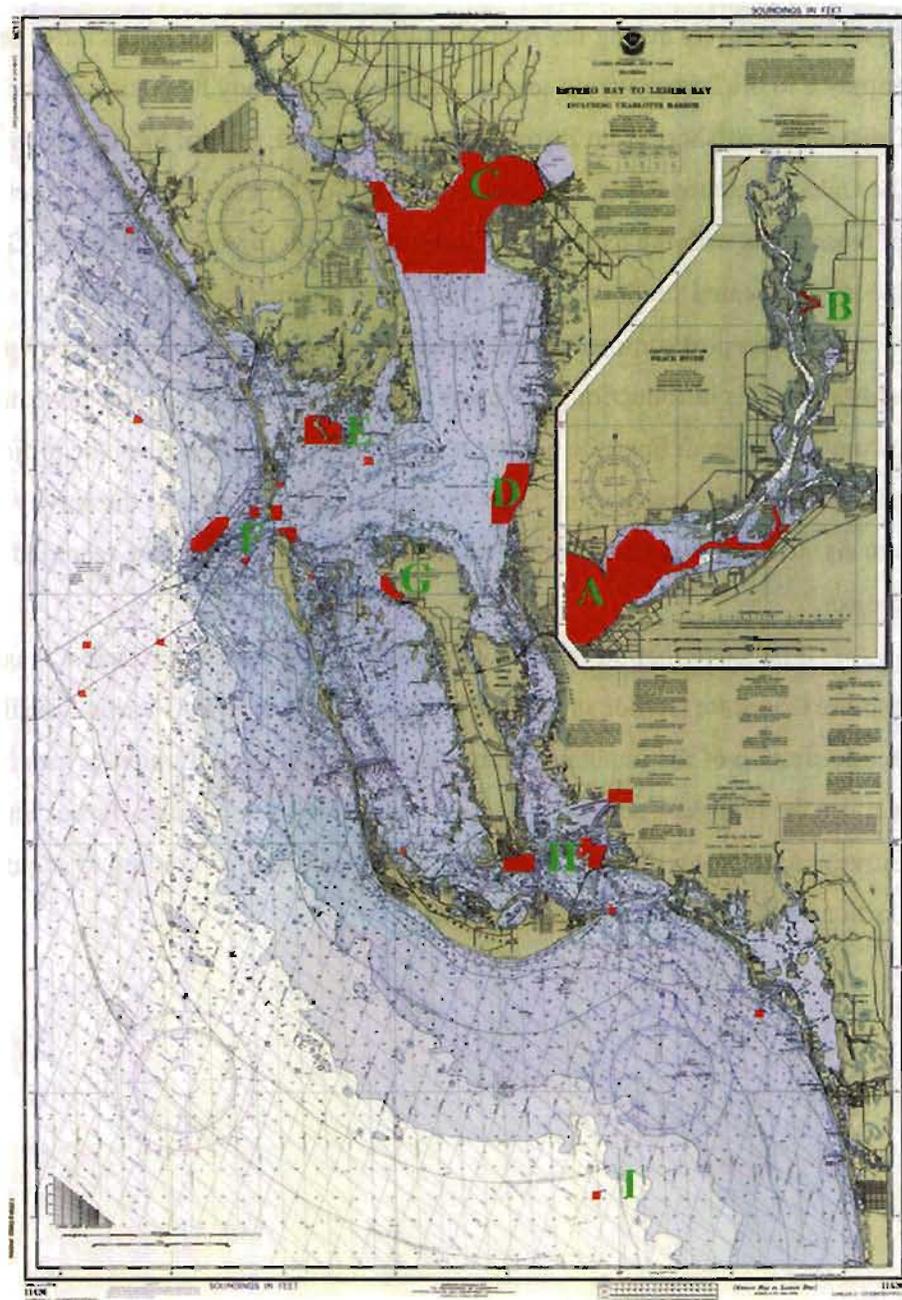


Figure 1. 1989 chart of Charlotte Harbor with areas that historical research indicates may contain submerged cultural resources. Image created from chart available from NOAA on the world wide web at: <http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Chart number 11426 6-1989.

significant activity during the American Period. The other areas include the main entrance to the harbor where several wrecks have already been located, the waters around Cayo Pelau, offshore from Burnt Store and Pineland, several locations near the mouth of the Caloosahatchee River, and sites in the Gulf of Mexico. The survey crew visited most of these areas with the exception of individual modern wreck sites in the Gulf of Mexico, the spring located south of Sanibel Island, and the area off Pineland.

This report summarizes the remote-sensing archaeological survey project. In addition to this introduction, the report presents an overview of the environmental and cultural settings, defines the project research design and describes the project methodology. The report concludes by presenting the results of the survey and addresses site significance and management recommendations for each site recorded during the project.

It is hoped that the success of this project will generate interest in continuing to explore Charlotte Harbor as well as other areas of southwest Florida. Ideally, the demonstration of the remote-sensing array's usefulness will translate into funding to acquire the high-tech survey equipment utilized in the Charlotte Harbor Shipwreck Survey. As of the writing of this report Mote has obtained funding to acquire at least a portion of the equipment described here.

CHAPTER TWO ENVIRONMENTAL SETTING

Introduction

The project area, shown in Figure 1, includes areas within Charlotte, Lee, and DeSoto counties, in the western central and southwestern peninsula of Florida. This region is bounded to the west by the Gulf of Mexico, and to the north, south and east by other Florida counties. Although the broad-ranging nature of maritime activities tie the area to other nearby locations in Collier, Hillsborough, Manatee, and Sarasota counties, as well as other regions of Florida, the United States, the Gulf of Mexico, the circum-Caribbean and foreign countries.

Charlotte Harbor was designated as a Nationally Significant Estuary on July 6, 1995. It is the ninth largest estuary in the Gulf of Mexico and has a surface area of 270 square miles and an average depth of 8 feet with a deeper channel at the main entrance, which made it attractive to Exploration and Colonial period sailors. The Greater Charlotte Harbor Watershed covers 4,360 square miles and its most significant rivers for navigation are the Caloosahatchee River in the south and the Peace River in the north, with the mouth of the Myakka River in the northwest also the site of historic activity. (Martin, Morton, Dobrzynski, and Valentine, 1996)

Charlotte Harbor's geographic subdivisions include: the Myakka River, the Peace River, the Caloosahatchee River; Lemon Bay, San Carlos Bay, Estero Bay, Gasparilla Sound, Pine Island Sound and Matlacha Pass. There are five National Wildlife Refuges and eight Florida State Aquatic Preserves within the Greater Charlotte Harbor Watershed.

Geology

Glacial and interglacial periods formed the landscapes of Florida including Charlotte Harbor. Sea levels rose and fell and the land mass was much larger with the shoreline extending some 100 miles into the Gulf of Mexico. When Florida was at its largest Charlotte Harbor would have been in the center of the Peninsula. When the first

people arrived in Florida the sea level was much lower and the present bay system was merely tributary to larger rivers whose beds are today submerged in the Gulf of Mexico.

Native American also transformed the landscape, but to a much smaller degree. Some islands, like Demere Key in Pine Island Sound, were formed by years, decades and centuries of Native American depositing shell after they had extracted what they needed. Far greater changes to the landscape came with the modern development of Florida such as the mining of phosphates and the creation of the Intracoastal Waterway.

Flora and Fauna

The shore of Charlotte Harbor is covered in mangroves except where they have been removed by development. The three varieties are red, black and white mangrove. In the water seagrasses grow in shallows. Moving inland Pine flatwoods, hardwood hammocks, cypress swamps, rivers, lakes, streams and ponds are encountered. (Estevez 1998)

The Charlotte Harbor watershed supports approximately 316 bird species, 44 Mammal species, 591 invertebrate species, 55 reptile species, 24 amphibian species, 273 marine fish species, and 66 freshwater fish species.

With modern development habitats are rapidly dwindling and today several varieties of sea turtles and storks, as well as the American crocodile, the Florida manatee, and the Florida panther are all listed as Endangered Species.

Modern Development

In addition to the mining of phosphates the settling and development of south Florida have had an impact on Charlotte Harbor. Although not as developed as Tampa Bay or Sarasota Bay to the North or Naples to the south, Charlotte Harbor has seen significant development. The most noticeable features are seawalls and canals to increase the number of waterfront properties. The area of Punta Gorda Isles is an example of this type of development, which is also seen in the town of Charlotte Harbor. The southern end of Boca Grande has developed significantly with high-end housing. The same is seen

on islands like Useppa, which at the turn of the 20th century had but one home and today is ringed with houses.

The modern development period has also recorded the occurrence of natural disasters in the form of hurricanes and their attendant tidal surge. The major hurricanes recorded in Charlotte Harbor include those of 1873, 1888, 1894, 1896, 1910 (wrecking four Cuban fishing schooners and killing seven crew), 1921, 1944 (Havana-Florida hurricane), 1960 (Donna), and 2004 (Charley). (Barnes, 1998)

CHAPTER THREE

ARCHAEOLOGICAL AND HISTORICAL SETTINGS

Previous Terrestrial Research

Formal archaeological investigations in southwest Florida began in the 1880's, although this work did not reveal the presence of significant resources (Douglass, 1885, Kenworthy, 1883, Simons, 1884). In 1895 Frank Hamilton Cushing of the Smithsonian Institution, excavated a rich site on Marco Island, slightly south of the current study area, which demonstrated the potential richness of southwest Florida. He called this site "the Court of the Pile Dwellers," and it was rich in well-preserved organic artifacts associated with the people who were precursors to the Calusa. Cushing also visited and reported on several sites in Charlotte Harbor including Demere Key the site of a unique crescent-shaped Native American shell mound island. Clarence Bloomfield Moore, a lawyer and amateur archaeologist, visited the eastern Gulf Coast and investigated numerous sites within the region from the 1890's up to the First World War and also reported on Demere Key, which he visited in 1900. (Moore 1999 [1921]). The state of Florida in the 1950's inventoried archaeological sites in Charlotte Harbor. The most recent archaeological research has been carried out by the University of Florida's Randell Research Center located on Pine Island and by George Luer, who has documented numerous Native American sites in Charlotte Harbor and nearby Lemon Bay (MacMahon and Marquardt 2004, Marquardt 2003; Luer 2002)

Previous Underwater Research

Prior to the 1970's underwater work was conducted periodically by the Army Corps of Engineers to remove obstructions to navigation and by private salvors to salvage ship's equipment. Treasure hunters have been active in and around Charlotte Harbor due to legends of pirate treasure. In the late 20th century a treasure hunter reported finding a 100-gun Spanish galleon using side-scan sonar. It proved to be a modern barge with steel framing protruding from its sides giving the appearance of a vessel with cannon to those

not familiar with reading sonar records. In 1997 TritonQuest (not currently in operation) operated under an exploration contract with the state of Florida to survey for shipwrecks in southwest Florida. They reported four sites to the state on the shoal north of the main entrance to Charlotte Harbor. The following year a contract archaeology firm (Mid-Atlantic Technology, 441 Blossom Ferry Road, Castle Hayne, NC 28429) surveyed some of the same waters in association with a beach renourishment project and reported on three sites in the same area, although none were in the identical locations to those reported by the earlier salvors. The contract archaeologist made notes indicating that the sites he detected and ground truthed looked like they had been worked by Treasure Hunters. It is possible that three of the sites reported as a result of the salvage/exploration contract are in fact the same as the three sites reported by the contract archaeologist, and not seven separate sites as currently reflected in the Florida Master Site File.

Prehistoric Overview

The first inhabitants of Florida arrived approximately 13,000 years ago and are referred to as Paleoindians. They seem to have concentrated in Florida from Tampa Bay northward, although Paleoindians sites are reported in Dade County for south Florida. Little Salt Spring and Warm Mineral Springs in Sarasota County have components that date to the Paleoindian Period. Florida at the time the first inhabitants arrived was vastly larger than today as lower sea levels saw the shoreline of West Florida extending out into the present-day Gulf of Mexico some 100 miles. As polar glaciers melted and sea levels rose beginning around 11,000 years ago, Florida's land mass was greatly reduced and the climate altered as well. Florida went from a cool, dry climate to a warmer wetter one. Over time Florida's inhabitants had altered to such a degree that archaeologists recognize a new culture labeled Archaic beginning approximately 9,500 years ago.

These Archaic people are divided into Early (9,500 to 7,000 years ago), Middle (7,000 to 5,000 years ago) and Late (5,000 to 2,500 years ago) periods between 9,500 and 2,500 years ago. Archaic sites are much more prolific in South Florida. Historic Spanish Point in southern Sarasota County has a late-Archaic component.

Ceramic usage arose during the Late Archaic Period, and from 2,500 years ago until the arrival of Europeans in the Sixteenth Century. Native American cultures in Florida are described largely based upon the type of ceramics or decoration that was produced in a particular region. These regional cultures varied through time and location. The Weeden Island Culture appeared around 1,700 years ago and was named after a site excavated in the 1920's in Tampa Bay. Weeden Island sites are found from Charlotte Harbor to the panhandle. The variant south of Charlotte Harbor was the Caloosahatchee Culture, who were the progenitors of the Calusa.

Calusa Canals

The Calusa influence extended out from Charlotte Harbor to just south of Tampa Bay where the Tocobago were located, to the east coast of Florida and south to the Florida Keys. To maintain communication over such a vast area canoes were used to transport people and goods. Where natural waterways were lacking the Calusa constructed canals that have been documented by archaeologists (Luer, 1989a, 1989b, Luer and House, 2001, Luer and Wheeler, 1997). The major canals were located at Pineland, Ortona and Naples.

The Calusa chief Carlos (so named by early Spanish explorers and likely a corruption of the Native American name) was located on Mound Key in Estero Bay and it is for this chief that the Europeans named the area that is today known as Charlotte Harbor. Carlos Bay appears on maps dating throughout the 19th and 20th centuries, and the southern part of the modern Charlotte Harbor Estuary System is still called San Carlos Bay. Although Mound Key was the seat of the Chief and therefore the center of authority for the Calusa, Pine Island was the location of the second most important people in the Calusa society. Today the Randell Research Center continues to document Native American sites at Pineland. Two mounds belonging to the chief spiritual leader and to Carlos' brother-in-law are divided by a canal that crossed Pine Island to allow canoes to avoid exposure along the route north of the Island. This canal is still visible today as creeks and ponds, although modern development has destroyed features that were visible fifty years earlier (Page, 2003).

Demere Key

Mote is fortunate that Don and Dorothy Gulnack have placed Demere Key, its guest house and boat basin at Mote's disposal as a field station for scientists working in Charlotte Harbor. Additionally they have allowed Mote to place a trailer on their property. Between the guest house and trailer the facility will accommodate eight scientists.

Demere Key is Florida archaeological site LL00031. The site is located in Lee County, just west of the center of Pine Island in Pine Island Sound. It has been investigated only in a cursory manner, but by several archaeologists. It was first visited by Frank Hamilton Cushing in 1895 and described two years later. It was next visited by Clarence B. Moore in 1900, who disagreed with Cushing's interpretation of the site. John M. Goggin reported a fishing camp on the site in 1944. In 1972 Daniel T. Penton inventoried the site and Robert Williams prepared a National Register of Historic Places Inventory/Nomination Form when the state was negotiating with the owner to acquire the property. The negotiations were broken off and the property remains in private hands to the present.

The property is named for the original purchaser who acquired it shortly after the United States took possession of Florida from Spain. The island was purchased for 85 cents. The island has been referred to variously as Demere Key, Demorey Key, Demerey Key, and Demerest's Key. By the 1950's it was owned by a Mr. Atchinson of Georgia according to David O. True. It was subsequently acquired by Phil deGraff, a botanist from Michigan. It is presently owned by Don and Dorothy Gulnack, who have the *property abstract describing the island's ownership history*.

DeGraff built and operated the Sea Grape Lodge, which entertained guests for dinner in a unique structure built of concrete with large conch and *Busycon* shells pressed into the exterior surface during construction. DeGraff also cleared out mangroves in the center of the island to create a boat basin, pumping the spoil around the basin to make a level around it. The basin has a concrete seawall. DeGraff also built a causeway out to the island from the end of Maria Road. DeGraff operated the Sea Grape Lodge from

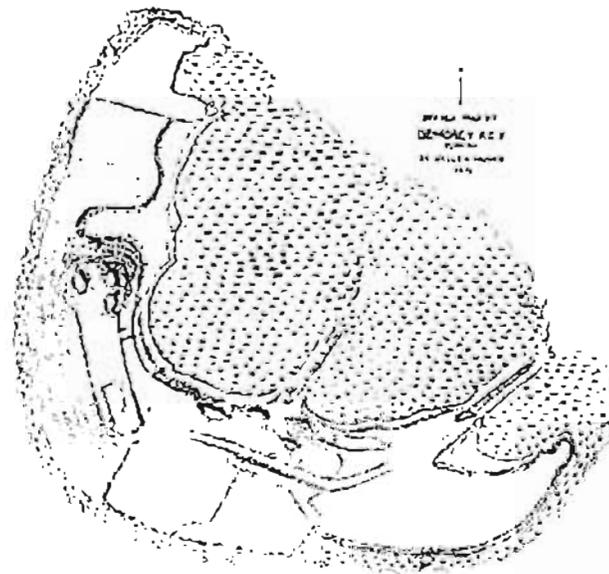
November to April, then went north to Michigan where he operated another lodge on Trout Lake.

The current owners acquired the property from DeGraff in 1973 after negotiations with the state fell through. The state had offered \$333,000 for the property, which deGraff wanted to see preserved. DeGraff broke off the negotiations when the state reported the deal in progress. DeGraff had wanted to make the announcement himself, and the leaked information caused deGraff to lose interest in the state's offer. The following year DeGraff sold it for less than \$50,000 to the current owner, Don Gulnack, and his business partner, with Gulnack eventually buying out his partner's interest. Gulnack was a friend of deGraff, and had first visited the island in 1949 for a camping outing when he was in the ninth grade. Gulnack built the guest house in a manner similar to the original lodge, and the lodge building has been remodeled and serves as the Gulnack's residence.

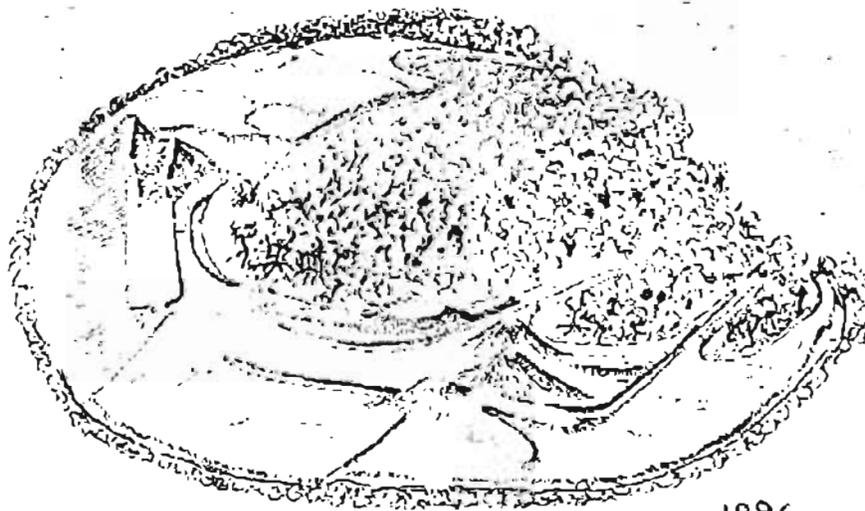
The lodge was built upon the large, flat shell feature noted by both Cushing and Moore. Don Gulnack reports that deGraff came across artifacts and skeletal material while digging foundations and utility trenches for the lodge. Gulnack, who built the guest house also encountered archaeological material while building the guest house.

On the day that we had to evacuate the Demere Key facility due to the approach of Hurricane Wilma, the survey team walked around the island with a Global Positioning System (GPS) and made note of features. We had the sketches prepared by Cushing's illustrator Wells M. Sawyer for reference (Figure 2). One shows a plan view of the island and is useful to compare to modern aerial photographs of this area. The other is a perspective view that gives a sense of the elevation of the island's features. The sketches show the long, flat shell feature upon which the old lodge was built along the west side of the island. It also indicates several mounds on the island's northwest and south sides, as well as canals running through the mangroves and the mounds on the south side. The center of the crescent-shaped island is shown as mangrove.

The modern disturbances have had an impact on the site, but there are still considerable undisturbed features present. The lodge covers the prominent feature noted



1896



1896

Figure 2. Demere Key in 1896 after sketches by Wells M. Sawyer, who was the illustrator for archaeologist Frank Hamilton Cushing. Above is a plan view and below is a perspective drawing indicating feature elevations. Note the long, flat rectangular shell feature on the west side of the island, as well as the other shell mounds and canal channels. This is a typical crescent-shaped shell mound island.

by early archaeologists. The mounds on the island's south side appear to be relatively intact. The mounds indicated on the northwest may or may not be intact. The shell we observed there appeared to be relatively recent in deposition. No canals are currently visible.

We examined a 10-meter by 10-meter area of the beach at low tide near the old lodge building and made note of numerous artifacts including prehistoric and historic ceramics, bottle glass, and iron. This material is presented in a subsequent chapter.

Historic Overview

Early Exploration

The early history of exploration along the west coast of Florida is murky at best. David O. True and others have argued that the Cabots sailed up this coast in 1498, but the point is far from proven. Very little good information was available and places along the coast seem to have been confused. Early maps reflect this confusion as places named for early explorers seem to wander up and down the coast from map to map. The confusion carries on until Tampa Bay is named after a Native American village in Charlotte Harbor. What does seem clear is that early European explorers knew that there were good harbors on the southwest Florida coast.

Ponce de Leon gets credit for officially discovering and naming Florida, although it is generally accepted that other Europeans knew of its existence and European mariners had probably visited prior to Ponce in 1513. There is some discussion as to whether or not John and Sebastian Cabot coasted around the Florida peninsula in 1487, and although some early maps indicate land where Florida is, there is no way to prove the Cabots were here and so Ponce continues to get credit for the discovery. Ponce traveled as far up the Gulf Coast of Florida as Charlotte Harbor before returning to Puerto Rico. In 1521 he returned to Charlotte Harbor to establish a colony but quickly angered the Calusa and was driven off when the Native Americans amassed a sizeable force to meet Ponce. This Indian force was gathered mainly through use of canoes and the canal system that allowed the coastal Calusa to communicate with those inland at Lake Okechobee and beyond to the east and south. Ponce's force was driven off by the Calusa and Ponce was

wounded by an arrow in either the thigh or the buttocks, a wound that became gangrenous and eventually took the explorer's life. (Gannon, 1996)

Following on Ponce's heels was Panfilo de Narvaez in 1528, who landed either in Tampa Bay or Charlotte Harbor. The precise location of Narvaez' arrival is unknown (Williams, 1986) but for years it has been assumed to have been somewhere on the Pinellas Peninsula. Alternatively, his expedition may have missed its intended destination of Boca Grande due to a storm that drove the fleet out to sea and when they returned they mistook Stump Pass for their landing site and therefore unloaded for the land march somewhere in present-day Englewood. Narvaez marched his force up to the panhandle and the province of Apalache, but they were short of food and supplies and were forced to construct boats from available material including melting down iron goods to make nails for their boats. Most of these small boats sank, and only four people returned after wandering through Texas, Arizona and New Mexico, to New Spain. Narvaez' treasurer, Cabeza de Vaca, was one of these survivors and he published an account of his and his companions four-year ordeal.

In 1539, Hernando de Soto again arrived either at Tampa Bay or Charlotte Harbor. Early interpretations (Smith, 1965 [1866]) place de Soto in Tampa Bay. The DeSoto Commission in 1939 concluded that de Soto had landed in Tampa Bay (Swanton 1939). The DeSoto Commission adopted the Schoolcraft theory of DeSoto's trail through the Southeast United States. Almost immediately after the report was issued writers disagreed with the conclusion. (Schell, 1966). Today Donald Sheppard continues to argue for a landing site in Charlotte Harbor (Figure 3) on the Cape Haze Peninsula (Sheppard, 1995). Unfortunately historical records are not likely to help identify which is the true site from which the explorer took off to wander the interior until his death near the Mississippi River in 1542.

De Soto sent a scout ship ahead to prepare the way for his fleet's landing. Juan de Anasco led this mission, and again his destination is unclear. In 1941 Longboat Key resident and developer, Gordon Whitney, claimed to have located Anasco's boat. He had

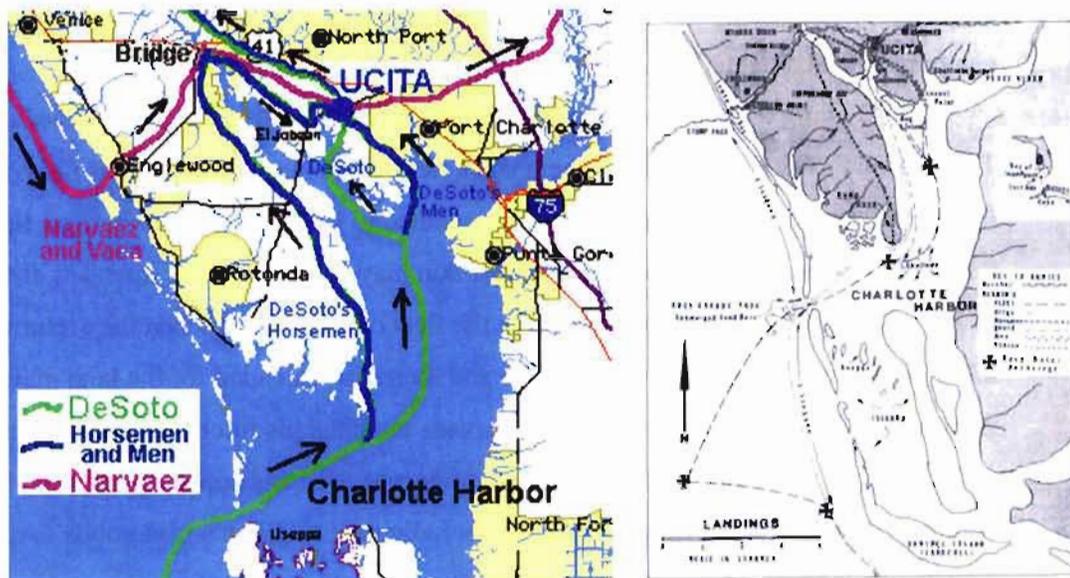


Figure 3. Maps showing Donald Sheppard's interpretation of the landing sites of the explorers Narvaez and DeSoto. a) illustrates the possible routes taken, while b) shows locations where DeSoto's fleet may have anchored and gone ashore. From *American Conquest*, available at: <http://www.floridahistory.com/inset44.html>.

wood samples dated by the American Museum of Natural History through radiocarbon, and received an age of from 200 to 400 years. In addition to the carbon-dated wood Whitney also collected a couple of bushel baskets of artifacts. The South Florida Museum holds the remains of the Whitney collection today (Figure 4), which consists of several small to large fasteners and a couple of rudder gudgeons together with some wood fragments that have been heavily infiltrated with iron. The wide range of the carbon dates and the small size of the gudgeons argue for a smaller and later vessel, perhaps associated with the area's Rancho Period when Spanish/Cuban fishermen in small sloops and schooners seasonally occupied the harbors of west Florida to catch, dry or salt and ship their catch back to Cuba.

The last of the early Spanish explorers and would-be conquerors was Pedro Menendez d'Aviles, who had earlier founded St. Augustine in 1565. D'Aviles built a fort called San Antonio in 1567, but after two years the effort was withdrawn due to poor relations with the indigenous peoples. The accepted location for this mission has always been Charlotte Harbor, although its precise location is unknown.

If Narvaez or DeSoto did land in Charlotte Harbor could there be an indication of this in the archaeological record? Sixteenth-century Spanish artifacts have been found in Charlotte Harbor from time to time (Williams 1993). Spanish artifacts found on Florida's west coast may very well have originated from the sites of shipwrecks on Florida's east coast and then transported across the peninsula by the Calusa. The anchoring of such a large fleet as that of de Soto and the discharge of cargos may be our best hope for finding artifacts. With so many ships at anchor, perhaps one lost an anchor. It still will be difficult to link an artifact such as this conclusively to one of the early explorers.

The Rancho Period

Perhaps as early as 1688 (pers. comm. John Worth) Spanish/Cuban fisherman began setting up at first seasonally and later permanently on the west coast of Florida to



Figure 4. Gordon Whitney artifacts in South Florida Museum. Whitney found these in 1941 and believe they were from Juan Anasco's scout ship sent out by DeSoto in 1538 to reconnoiter a landing spot in Florida for DeSoto's fleet. The artifacts, primarily the rudder gudgeons, appear to be too small for such a vessel and from a later period.

fish. They would dry or salt their catch and take it back to Havana for sale. They would have utilized small vessels, sloops and schooners. No historical account of such a vessel's loss survives, but their loss was as likely as modern fishing boat losses (Figure 5). John Worth at the Randell Research Center located in Pineland on Pine Island has been conducting research on a variety of topics related to Charlotte Harbor and Cuba. His investigations in the archives in Havana have uncovered descriptions of how these small watercraft were outfitted for journeys to the Florida *ranchos*. This material would be helpful in analyzing an archaeological site of this type.

American Period (1821-present)

Florida became an American Territory in 1821 after a series of successful invasions by Andrew Jackson in pursuit of Native Americans. These Creek Indians were hostile to American expansion. The Spanish finally sold Florida to the United States and withdrew, ceding Florida by treaty to the United States in 1819. King Ferdinand of Spain signed the treaty in 1820, and Florida became an American territory in 1821 (McGovern 1974). Jackson became interim governor. Between 1821 and 1861, the region saw a series of Seminole Wars and beginnings of settlement following these wars and the relocation of Native Americans to other areas out west. The transition from Spanish to American rule also saw illicit activities that have led to stories of pirates in Charlotte Harbor.

Cayo Pelau

Dr. Richard Pierce, Mote Marine Laboratory's Director of the Center for Ecotoxicology, put us in touch with several local informants with knowledge of Charlotte Harbor and Sarasota Bay. One of these individuals, Mr. Pat Mylum, has for years undertaken explorations in and around Charlotte Harbor. In 1987 Pat Mylum had an exploration contract with the state of Florida and investigated Cayo Pelau, where he had hoped to find treasure associated with pirate activity. The result was that he located



Figure 5. Cuban fishing smack driven ashore by the October 1941 hurricane at Marco Island, Florida. From the Florida Photographic Collection #ge1548.

historical properties on the island and in the waters just off the island's northwestern and western sides.

Pat Mylum has a copy of a type-written document by John D. King in 1909. King was a resident of Charlotte Harbor and claimed to be descended from pirates. The King manuscript discusses the activities pirates including the burial of treasures. The story that caught Pat Mylum's attention centered on a treasure buried beneath a stone platform off the west end of Cayo Pelau. Mylum's team located a two-square-meter platform constructed from stone cobbles, possibly reused ballast stone that matched the description in the King manuscript of stone from Isle of Pines in Cuba. Mylum used this platform to arrest the site. Extensive dredging produced no treasure and, in fact, the effort convinced Mylum that no treasure was present. Mylum's team did locate burned timbers at the site and Mylum now believes the platform may have served as a light to direct vessels to safe anchorage once they had crossed the bar into Charlotte Harbor.

Mylum also noted that the remains of a marine railway were visible on the northwestern side of the island and that a car or cart from this railway was at that time in the water. The railway consists of timbers capped with iron. A nearby slab with an iron ring may mark this area as a careening place.

Mylum also noted the presence of two large pipes sunk into the beach near the stone platform that may be from an earlier salvage effort. The island has the foundation of a warehouse, a graveyard and a well indicating that it was inhabited at one time.

Civil War

When the Civil War began in 1861, most Floridians who lived in the southwestern Peninsula area had loyalties with the Confederacy, although there were union sympathizers as well. Smuggling cattle, salt and cotton in exchange for manufactured goods was common all along the Florida coast until the Union could effectively establish a naval blockade.

Blockade Running from the Official Records of the US Navy

1861

On October 13, 1861 the USS *Keystone State* captured the James McKay's steamboat *Salvor* off the Dry Tortugas carrying a cargo of cigars, coffee, and munitions. According to a later report by Governor John Milton the munitions consisted of "21,000 stands of arms, 10 boxes of revolvers, six rifled cannon, and ammunition." On October 24, 1861 the USS *Rhode Island* captured the schooner *Aristides* off Charlotte Harbor.

1862

On January 29, 1862 a Union vessel captured the Confederate schooner *Stephen Hart* south of Sarasota with a cargo of arms and ammunition. On November 1, 1862 the Union stationed 18 ships off Florida's Gulf Coast to blockade Confederate activity.

1863

On March 4, 1863 the USS *James S. Chambers* captured the Spanish sloop *Relampago* and the schooner *Ida* today. The *Ida* was run aground on Sanibel Island and destroyed by Union forces. On March 13, 1863 the USS *Huntsville* captured the British vessel *Surprise* off the main entrance to Charlotte Harbor with a cargo of cotton destined for Havana. On April 6, 1863 the USS *Huntsville* captured the sloop *Minnie* off Charlotte Harbor with a cargo of cotton. On May 5, 1863 the USS *Tahoma* captured the schooner *Crazy Jane* between Egmont Key and Charlotte Harbor with a cargo of cotton and turpentine. On May 21, 1863 the USS *Union* captured the British vessel *Linnet* west of Charlotte Harbor. On June 18, 1863 the USS *John S. Chambers* captured the British vessel *Rebekah* 30 miles west of Charlotte Harbor with a cargo of whiskey. On July 18, 1863 the captured Confederate sloop *Rosalie* was officially taken into the Union Navy for blockade duty off Charlotte Harbor by the U.S. District Court in Key West. On July 29, 1863 the USS *Rosalie* captured the British vessel *Georgie* in the Caloosahatchee River near Fort Myers, abandoned and without cargo. On September 30, 1863 the USS *Gem of*

the Sea captured the British schooner *Director* between Punta Rassa and Sanibel Island with a cargo of salt and rum. On October 17, 1863 a crew from both the USS *Tahoma* and the USS *Adela* captured and set fire to James McKay's steamboat *Scottish Chief* and schooner *Kate Dale* in the Hillsborough River. The *Scottish Chief* carried 156 bales of cotton, while the *Kate Dale* stowed 11 bales. On December 23, 1863 Federal troops under the command of Henry A. Crane was began to disrupt the flow of cattle from Charlotte Harbor to the Confederacy.

1864

On April 26, 1864 the USS *Union* captured the schooner *O.K.* between Tampa Bay and Charlotte Harbor. On June 28, 1864 Federal troops boarded three ships at Punta Rassa bound for Bayport in preparation for a raid on Brooksville. On October 24, 1864 the USS *Rosalie* captured an unidentified sloop off Little Marco Island with a cargo of salt and shoes.

1865

On February 20, 1865 the Battle of Fort Myers, the southernmost land battle of the Civil War with both sides claiming victory. On February 24, 1865 Federal troops under the command of General John Newton boarded ships at Punta Rassa bound for Cedar Key.

USS *Gem of the Sea*

The USS *Gem of the Sea* was a merchant bark of the same name that was purchased at New York on August 3, 1861 by the Union Navy. By October it joined the South Atlantic Blockading Squadron and following repairs at the Boston Navy yard it departed at the end of 1862 for the East Gulf Blockading Squadron. After capturing several vessels off Jupiter Inlet and Indian River, the vessel began patrolling off Charlotte Harbor. On July 29, 1863 it captured the British schooner *George* off Sanibel, and the following month caught the sloop *Richard* in the Peace Creek (Peace River). On

September 6 the *Gem of the Sea* supported an expedition up the Peace River to capture and destroy four boats and a couple of buildings that belonged to a blockade runner named Johnson. Although only described in the official records of the Civil War as four boats, they were likely four small schooners. Their location is only approximated at 15 miles up the Peace River, though locals believe that Johnson was based out of Horse Creek.

At the end of September, the Union's 371-ton bark captured Johnson's schooner *Director*. Johnson was arrested and sent off to prison at Fort Taylor, but not before he saw the Federals burn his vessel to the waterline off Punta Rassa. On October 21 the vessel captured the sloop *Matilda*. The last week in 1863 *Gem of the Sea* supported an expedition up the Myakka River to relocate Union sympathizers from Useppa Island to the mainland. Together with the tender *Rosalie* the bark patrolled outside Charlotte Harbor and on June 11, 1864 the pair captured the steamer *Emma* off nearby Marco Inlet to the south. After the war *Gem of the Sea* was decommissioned and sold.

Blockade Runner *Scottish Chief*

Capt. James MacKay is a controversial figure in the Civil War history of Southwest Florida. MacKay smuggled goods in and out of the area first on his steamboat the *Salvor* and later on another steamer, the *Scottish Chief*. MacKay was in partnership with cattle barons Jacob Summerlin and Jesse Knight as well as Jesse's brother, Joel Knight, and they smuggled cattle out of Charlotte Harbor for the Confederacy. MacKay's side-wheel steamer *Salvor* was at first leased and later seized by the Union Navy as a smuggler. MacKay and his son Donald were released after five months captivity when they signed an oath of allegiance to the Union and received pardons from President Lincoln. MacKay continued smuggling with his new steamboat *Scottish Chief*. MacKay's vessels operated out of both Tampa Bay and Charlotte Harbor. MacKay made six runs from Charlotte Harbor between the summer of 1862 and the fall of 1863, which paid for his investment in *Scottish Chief*, subsequently he made another five runs from Charlotte Harbor that yielded him all profit (pers. Comm. Lindsey Williams). Kyle vanLandingham

maintains that MacKay was a staunch supporter of the Confederacy, while Canter Brown believes that MacKay was, in fact, an agent for the Union. Whatever the case the remains of *Scottish Chief* and other vessels engaged in smuggling along the southwest Florida coast may lie at the bottom of the Hillsborough River. (Williams and Cleveland, 1993)

Summerlin cut a road from Fort Ogden to Punta Gorda and then built a dock of “unpeeled pine poles” extending 800 feet out to a deep channel at Burnt Store. There had been a dock at Burnt Store operated by Kennedy and Darling as far back as 1848, but this had been abandoned after a hurricane. Summerlin together with Capt. James McKay of Tampa - who operated a steamboat *Salvor* and then later the *Scottish Chief* - and the Knight brothers, Joel and Jesse. Summerlin’s first dock was abandoned by 1862 due to the presence of the USS *Gem of the Sea* on Union blockade duty, which could look directly into the harbor’s main entrance and see boats preparing to leave. In 1862 Joel Knight built a dock on the northeast shore of the town Charlotte Harbor at the mouth of the Peace River and his brother Henry built a store nearby to sell merchandise brought in by blockade runners. This dock (Figure 6) and the schooner channel (Figure 7) up the Peace River appear on an historic map. At this location ships could be loaded without being seen by the Union blockade. (Williams and Cleveland, 1993)

In early 1863 the Union blockade was busy along the coast of Southwest Florida. The USS *Tahoma* captured seven blockade runners off Tampa Bay and Charlotte Harbor including: the sloop *Silas Henry*; the British schooner *Margaret*; the yacht *Stonewall*; the schooners *Crazy Jane* and *Statesman*; the British schooner *Harrietton*; and the *Mary Jane*. On April 2, 1863, the *Tahoma* exchanged fire with a Confederate shore battery at Gadsden's Point. Confederate smugglers were flush with success early in the war as the Union Blockade was not effective along Florida’s Gulf Coast, but in 1863 information from Union sympathizers together with a naval presence in Gulf waters would see a crack down on smuggling.

After learning that Confederate smugglers were loading cotton in the Hillsborough River, Union Rear Admiral Theodorus Bailey, sent the USS *Tahoma* under Lieutenant Commander A.A. Semmes and the USS *Adela* under Acting Lieutenant Louis

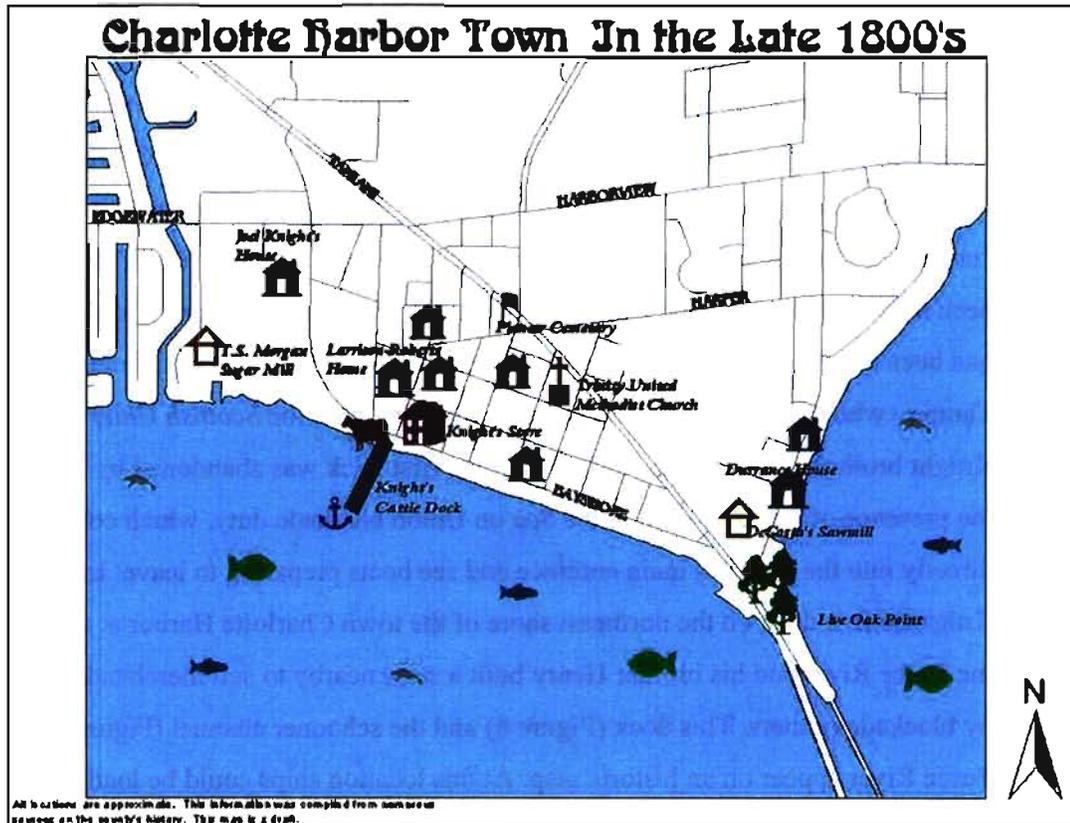


Figure 6. Joel Knight's cattle dock and his brother Henry's store located at the present town of Charlotte Harbor. Image by Melissa Eliff from Charlotte Harbor Community Redevelopment Area. Available at: http://www.charlottecountyfl.com/Adv_Committees/CRA/historic_district.asp.



Figure 7. Map of the mouth of the Peace River at Punta Gorda and the town of Charlotte Harbor showing the location of Knight's Pier built around 1879. Also shown is the schooner channel up the Peace River from the dock. Map from the collection of Vernon Peoples.

N. Stodder to seize these vessels. Semmes, brother of Rafael Semmes of the commerce raider CSS *Alabama*, was placed in overall command of the Union forces. Beginning on October 16, 1863 the Union blockade ships *Adela* and *Tahoma* launched a bombardment of Tampa mainly as a cover for a raid up the Hillsborough River. A.A. Semmes sent Acting Master Thomas R. Harris to head a landing party consisting of 107 sailors and marines. Harris' party landed at Ballast Point just before midnight. On October 17, Henry Crane, a local Union sympathizer, guided Harris' party 14 miles to the Hillsborough River where they found the paddlesteamer *Scottish Chief* and the sloop *Kate Dale*. The Confederates had already destroyed the steamer *A.B. Noyes* to prevent its falling into Union hands. The Union party proceeded to burn the two vessels at their moorings together with 167 bales of cotton awaiting shipment (Zerfas, 2001). Two confederates escaped undetected from the burning of the vessels and warned the garrison at Tampa. On October 18, a Confederate force under the command of Captain John Wescott attacked the returning Federals killing and wounding 15 men with five others captured. Confederate losses other than the vessels are not recorded. (US Navy, 1971)

Local informant Pat Mylum told Mote researchers that he thought the *Scottish Chief* had been located by a Tampa dive club 30 years ago. To the best of his recollection the site was near the south end of the Lowry Park Zoo, just downstream of Sleigh Avenue. Local informants in Charlotte Harbor believe that they know the approximate location of Summerlin's first cattle dock at Burnt Store. It may have been built at the location of a Seminole-Indian War trading post. Although built of "unpeeled pine poles," a dock feature in operation for two years may have left a detectable signal due to refuse and other objects thrown or dropped from the dock.

Blockade Runner Capt. Robert Johnson

Confederate smugglers hid their vessels up the rivers of Southwest Florida's Bays to hide them from the Union. The Peace River was a favorite haunt for blockade runners. On July 8, 1863 the Union tender *Rosalie* and cutter *Restless* chased the schooner *Ann* and an unidentified sloop through the harbor and into the Peace River. Smugglers often

went up as far as Horse Creek, which was too shallow for the Union vessels to continue pursuit. In this case, though, the smuggler's cotton cargoes were seized and their vessels set afire.

James MacKay was the most prominent smuggler but there were many others. Chief among those operating from Charlotte Harbor was the daring Captain Robert Johnson. Johnson was originally based at Cedar Key and with his schooner *Director* smuggled cargoes along the southwest Florida coast to Cuba and the Bahamas. (Williams and Cleveland, 1993)

In November of 1862 over a two-week period he loaded cotton that had come overland to several Charlotte-Harbor locations and smuggled it to Cuba. He returned with a shipment of medical supplies, manufactured goods and food stuffs. Johnson had a warehouse that doubled as a store near Fort Ogden.

On September 5, 1863 a Union force from USS *Gem of the Sea* under the command of Acting Ensign William H. Winslow and Acting Master's Mate Charles A. Edgcomb, together with Acting Lieutenant Baxter made a reconnaissance of the Peace River in search of Johnson. They came across his home, warehouse and four boats at a location approximately 15 mile up the Peace River and set the houses and boats afire. Johnson was not present during the raid, but his schooner *Director* was captured at Punta Rassa while attempting to run the blockade with a cargo of salt and whiskey on September 30 and was burned by Union forces off of Punta. Johnson was tried and convicted and sent to prison, never to be heard of again. Historical novelist Robert Macomber remembers exploring the Punta Rassa area as a youth and finding bottles in the area where the *Director* and other schooners are thought to lie. (Macomber, 2005) Although this area has been developed recently with high-rise condominiums with dock facilities, Macomber believes that the site he visited as a youth are still undisturbed. (pers. comm. Robert N. Macomber)

The Peace River and its tributaries are likely to contain the remains of vessels burned during the Civil War as well as later period vessels. Phosphate mining of pebbles from the River beds may have destroyed some of these sites and today may threaten

others. Horse Creek, where the schooner *Ann* was burned, was recently in the news as a location where the phosphate industry would like to operate, however, environmental groups are opposing their application.

USS Annie

The Union gunboat *Annie* began the war as a British blockade-runner, but was captured by the Federals at the Suwannee River in 1863. Converted to blockade duty the vessel was en route from Key West to Charlotte Harbor when it mysteriously disappeared with its entire crew. *Annie* was located a month and a half later in 30 FSW off Cape Romano, but no more detail of the vessel's loss are known.

Other Losses in 1864

The British schooner *Ida* was chased by a crew from the USS *James L. Chambers* in May 1864. The blockader-runner's crew beached their vessel on Sanibel Island and fled into the wilderness evading capture. The Federals fired the craft before leaving. Later that same year the Spanish sloop *Relampago* was captured by the USS *Chambers* and it is thought to lie in the vicinity of Knapps Point on the south coast of Sanibel Island.

Phosphates

The discovery of phosphate pebbles in the Peace River in 1881 and later phosphate deposits on land created an industry that is still in existence today. In the 1880s dredges and barges mined pebbles from the Peace River and tributaries, and sent them downstream where they were loaded on four and five-masted schooners and steamships for shipment to ports in the United States and overseas. The last phosphate shipment from Charlotte Harbor went out in 1979.

Some seven miles up the Peace River from Punta Gorda is the island of Liverpool (Figure 8), which may represent the oldest industrial site in South Florida. Here phosphates were brought in by rail and sent down the river on barges towed by steamboats like the *Phoenix* (Figure 9) to Punta Gorda. In the early days outgoing vessels

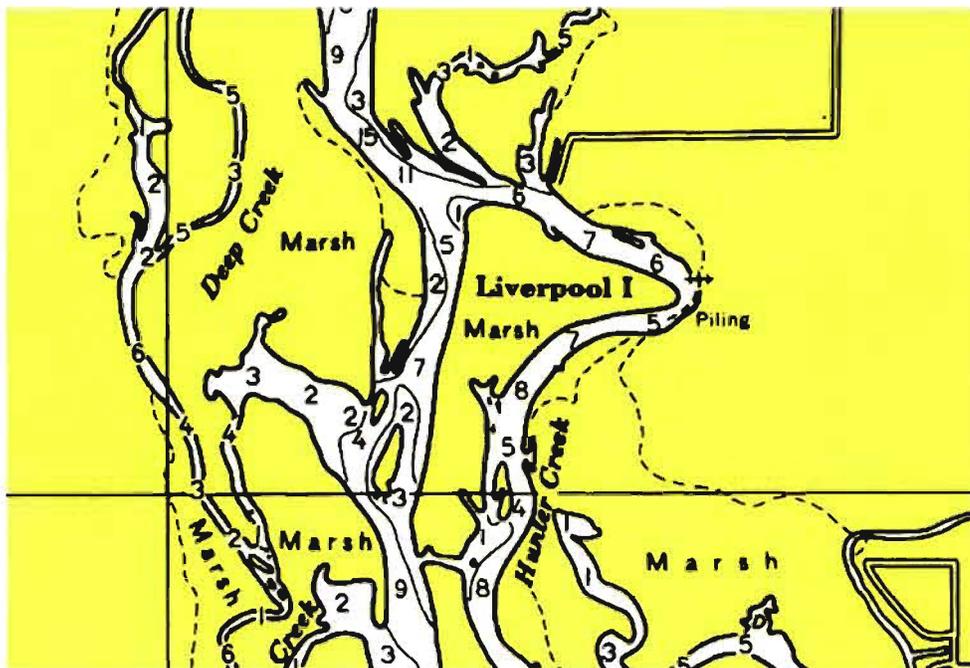


Figure 8. 1974 chart of Charlotte Harbor showing a derelict dock symbol in the area of the Liverpool phosphate loading facility site. Image cropped from chart available from NOAA on the world wide web at:

<http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Chart number 11426 7-1974.



A close-up photograph of the nameboard of the steam tug Phoenix. The name "PHOENIX" is written in large, bold, capital letters on a dark, oval-shaped background.

Figure 9. Steam tug *Phœnix*, which was used to tow phosphate barges from Liverpool to Punta Gorda. Close-ups of pilot house and nameboard showing name. From the collection of Vernon Peeples.

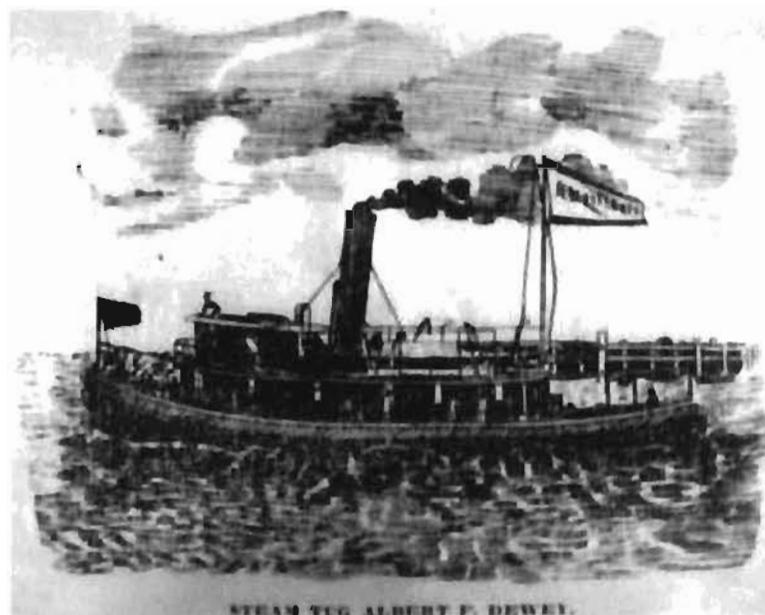


Figure 10. Two views of the steam tug *Albert F. Dewey*. The top illustration is from the *Florida Times Union* dated May 31, 1896. From the collection of Vernon Peeples. The Dewey in the line art at the bottom differs from the newspaper illustration in the size and placement of the superstructure on the deck area as well as some of the fittings. After a photo in Pearse 1954.



Figure 11. The *Mary Blue* was used to tow phosphate barges down the Peace River to Charlotte Harbor where they would load schooners and steamers. The *Mary Blue* was reportedly lost in the Peace River (local informant). The *Phoenix*, like *Mary Blue*, earlier towed phosphate barges to the harbor and was similarly lost in the Peace River. From the Florida Photographic Collection.

were loaded in Punta Gorda, but later tugs like the *Albert F. Dewey* (Figure 10), *Alice Howard* and *Mary Blue* (Figure 11) towed barges to Boca Grande. Today the Liverpool site is a rich archaeological deposit that dates back to the earliest years of the phosphate industry.

Liverpool, Florida, is the site of an earlier phosphate loading facility that was comprised of a Railroad spur and a complex built on brick foundations that served to load barges in a stream off the main channel of the Peace River. Liverpool may represent the earliest industrial site in south Florida. The area was settled prior to the discovery of phosphates and is located at approximately the farthest point at which the Peace River was navigable by small schooners during the settlement period. The loading facility extended into the water for the loading of barges.

Liverpool first appears on Colton's New Sectional Map of the Eastern Portion of Florida in 1880 (<http://www.bplonline.org/>). It appears regularly on maps until the 1920's when it begins to drop off some maps at the end of the decade. It last appears on US Bureau of the Census map entitled: *Florida Minor Civil Divisions (1930 Census)*. (<http://maplibrary.ua.edu/>)

Around 1912, the SS *Millinocket*, Capt. Thomas J. Sammon, arrived at Boca Grande approximately every two weeks to transport phosphate to various east coast ports including Searsport, ME, and New York (Johnson 2002).

Other Vessel Types on Charlotte Harbor

Small fishing boats and other sailing craft such as yachts (Figure 12) were a common site on Charlotte Harbor around the turn of the last century. The following is a list of some of the approximately 40 vessels operating on Charlotte Harbor in the late-19th and early 20th centuries: *Bill Lewis* (Capt. J.R. Jack); *Defender*; *E.C. Knight*; *Electric*; *Elite* (Capt. Clennie Coston); *Emily Lewis*; *E.W. Smith*; *Mirage* (Heusted brothers); *Nellie* (Capt. John Olsen); *Ruth*; *Trenshant*; *Uist*; *Vigilant*; and *Viola* (Iredell Johnson). In addition there were two steamboats owned by the fish wholesale firm of Blocksom and Lewis, and another by the Punta Gorda Fish Company. (Johnson 2002)

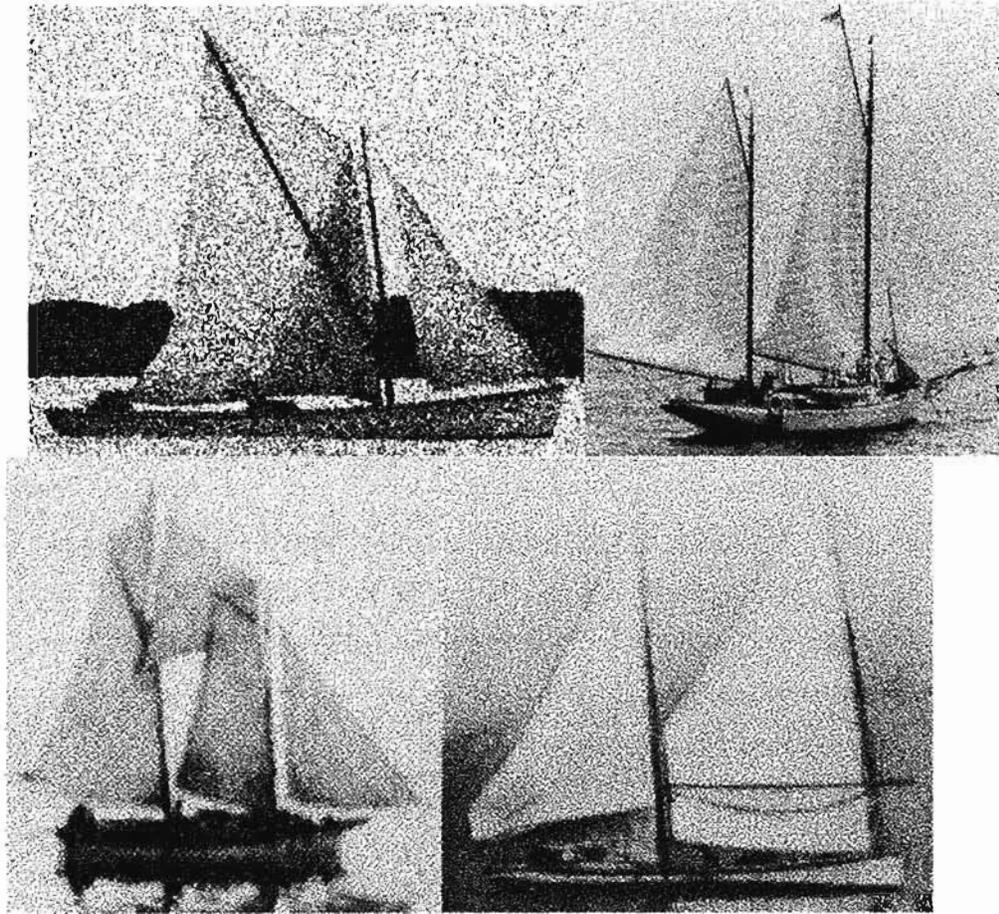


Figure 12. The types of small watercraft used at Charlotte Harbor. Upper left is a Cuban fishing smack, upper right is the yacht *Oriole*, lower left is a schooner on Pine Island Sound, and lower right is a sharpie. Images after photographs from *Florida's Vanishing Era* by Eleanor H.D. Pearse, 1954.

Steamboats operated throughout Charlotte Harbor, including the *St. Lucie*, *H.B. Plant*, *Thomas A. Edison*, and *Suwannee*. The local boats were western-style steamboats and were usually sternwheelers and later propeller-driven. There were eastern-style steamboats that visited the harbor. In 1906 the USRC *Fessenden* (Figure 13) towed a disinfecting barge from Key West to the Boca Grande Quarantine Station.

There was a daily boat that ran between Punta Gorda and Fort Myers as well as other occasional boats. This traffic was examined at the turn of the century and it warranted recommending dredging of spots in Pine Island Sound (Figure 14), although this work was not undertaken until the Intracoastal Waterway was constructed in 1960. The government report also listed the traffic and commodities being shipped at that time (Table 1).

Table. 1 Commerce of Charlotte Harbor from *Examination and Survey of Inside Passage from Punta Rasa to Charlotte Harbor, Florida. Letter from the secretary of war transmitting, with a letter from the chief of engineers, report of examination of the inside passage from Punta Rasa to Charlotte Harbor, Florida.* (US Government 1900).

ARTICLES	TONNAGE	VALUE \$
Phosphate pebble and fertilizers	69,378	708,780
Merchandise	2,400	120,990
Fish and oysters	25,758	146,895
Vegetables	1,700	51,000
Grain	3,500	38,104
Oranges	887	32,000
Hay	1,000	18,875
Lumber	1,250	15,000
Cattle	225	11,250
Pineapples, etc.	232	9,315
Hides	10	2,250
Honey, syrup, etc.	6	371
TOTAL	106,345	1,154,839

Other vessels used in Charlotte Harbor include a variety of small boats for fishing in the bay and Gulf of Mexico waters. They range from bateau, punts, skiffs, sloops, schooners, ketches, yawls, and various motor launches. The Bass Biological Station on

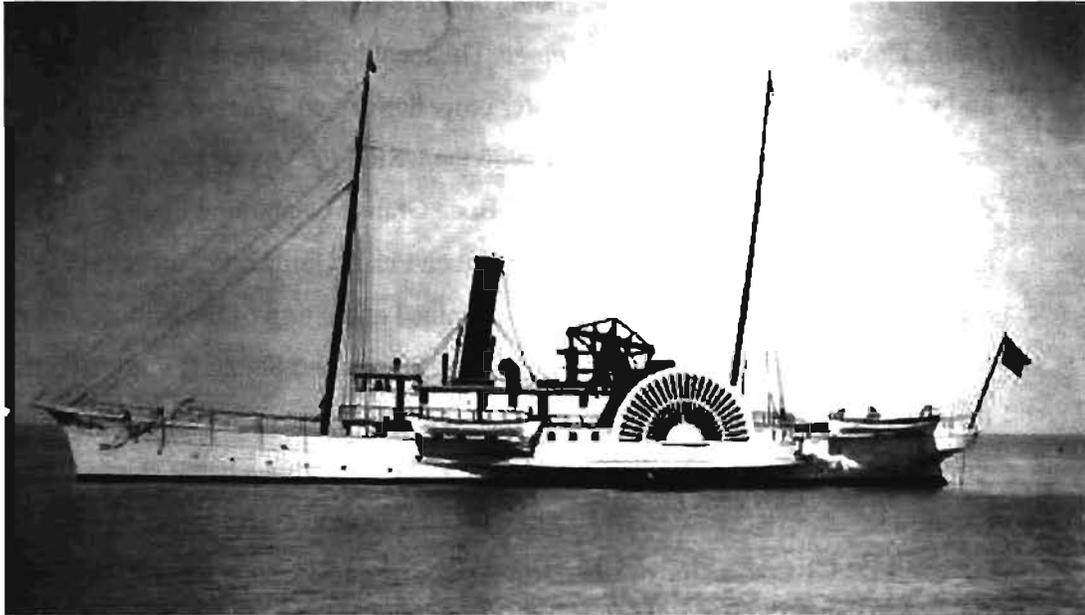


Figure 13. The US Revenue Cutter *Fessenden*, which in 1906 towed a disinfecting barge from Key West to the Charlotte Harbor Quarantine Station. Photo from Eighteenth & Nineteenth Century Revenue Cutters, A Historic Image Gallery, available at: http://www.uscg.mil/hq/g-cp/history/USRC_Photo_Index.html.

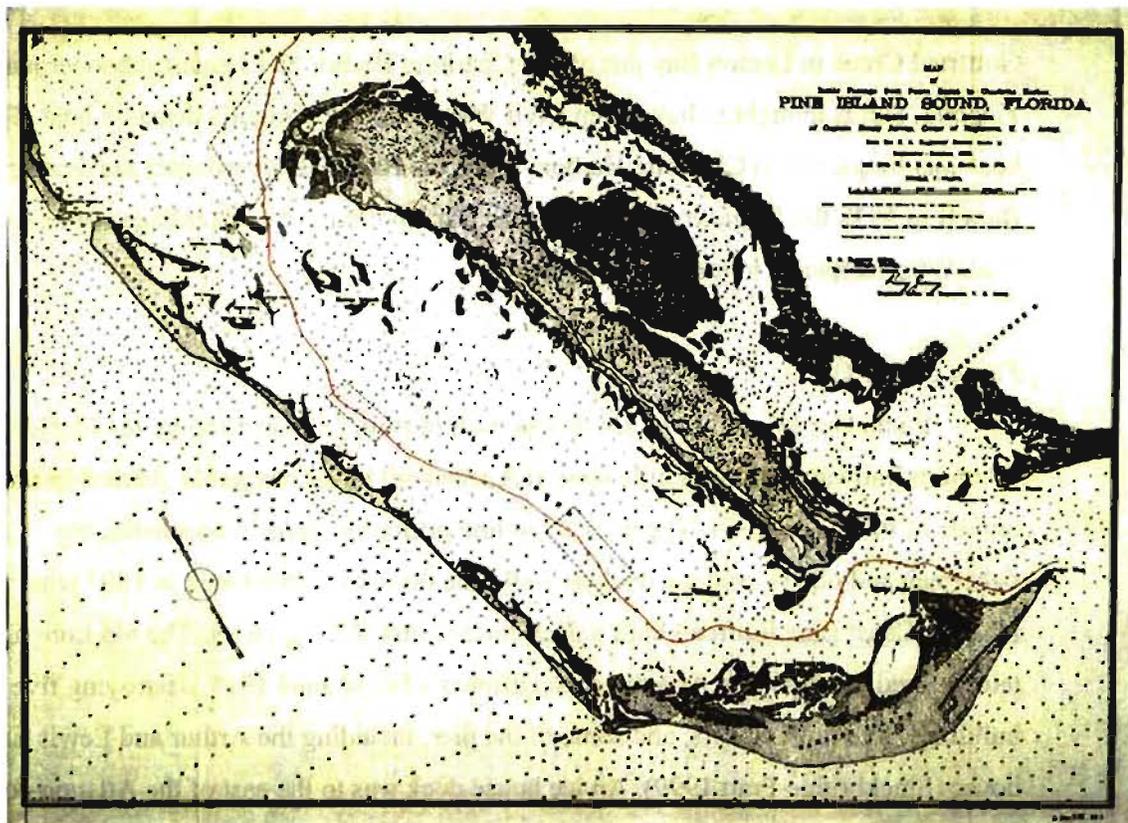


Figure 14. 1898 map illustrating path of daily steamboats through Pine Island Sound traveling between Punta Gorda and Fort Myers. This map was prepared to show areas in need of dredging to maintain a channel depths of seven feet required by the boats in use. From US Government, *Examination and Survey of Inside Passage from Punta Rasa to Charlotte Harbor, Florida*. 56th Cong. 1st Sess., Docu. No. 286, 1900. Available online at: <http://palmm.fcla.edu/feol/>.

Gottfried Creek in Lemon Bay just above Charlotte Harbor had a small schooner named *Virginia*, that is thought to have been Civil War Admiral Farragut's dispatch boat. The boat was frequently in Charlotte Harbor. When the Bass Lab closed after the death John Bass II in 1938 the *Virginia* was sold. It was last reported in Cortez village with a load of coal. What happened to it after this is unclear.

Punta Gorda Docks

Punta Gorda's old Long Dock was built in from 1885 to 1886 by the Florida Southern Railway. Almost a mile long, it reached out to the navigable channel in the middle of the Peace River. The dock's rail line primarily carried phosphates, but fishermen and others used the dock as well. The dock was abandoned in 1897 when the Atlantic Coast Line Railroad built a dock farther east at King Street. The old Long Dock later burned in 1904. The Atlantic dock suffered a fire in June 1915, destroying five buildings, five railroad cars, and some of the pier, including the Arthur and Lewis fish house (Stockbridge-Pratt 1999). An ice house dock was to the east of the Atlantic dock. The King Street dock and the ice house dock were abandoned in the late 1920's when this area was set aside for a bridge across the Peace River.

The old Long Dock appears on a navigation chart (Figure 15a) dated to 1883. although this map may have been published later as it includes the Long Dock, but it is labeled as the "Ocean S. S. [Steamship] Pier." The King street pier is labeled as the "Hotel Pier" on this map. A chart Figure 15b) dated to 1916 shows the Long Dock as a derelict pier, while showing the king Street dock and the ice house dock to the east. The old Long Dock appears on Albert W. Gilchrist's map of Punta Gorda (Figure 16) dated to 1892. Also visible on this map is the King Street pier. All later charts (Figure 17) of the area show the old Long Dock as a derelict pier until it finally disappears entirely between 1956 and 1967.

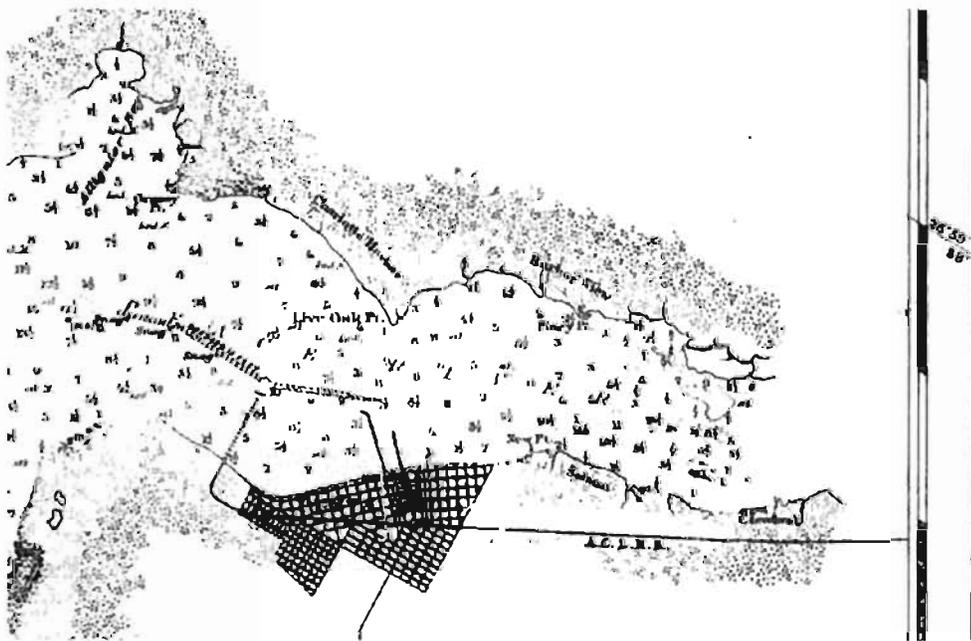
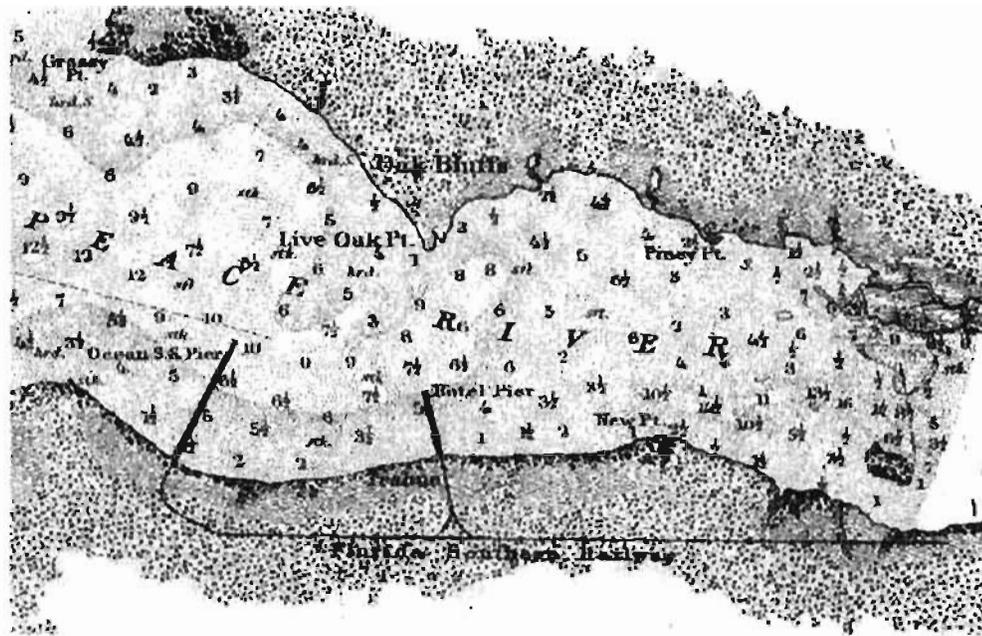


Figure 15. Punta Gorda piers from maps in a) 1883 and b) 1916. The old Long Dock is at the left (west), while to the east are the King Street Dock and the Ice House dock. Images cropped from charts available from NOAA on the world wide web at: <http://historicals.ned.noaa.gov/historicals/histmap.asp>. Chart numbers CP1815C and 1759-1916.

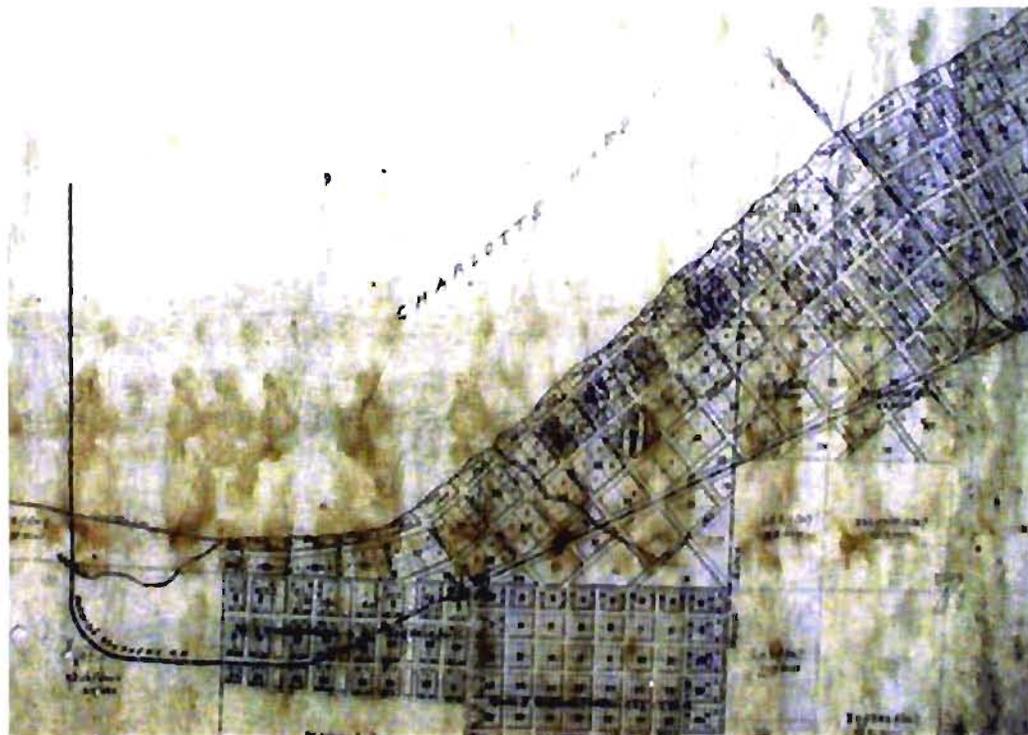
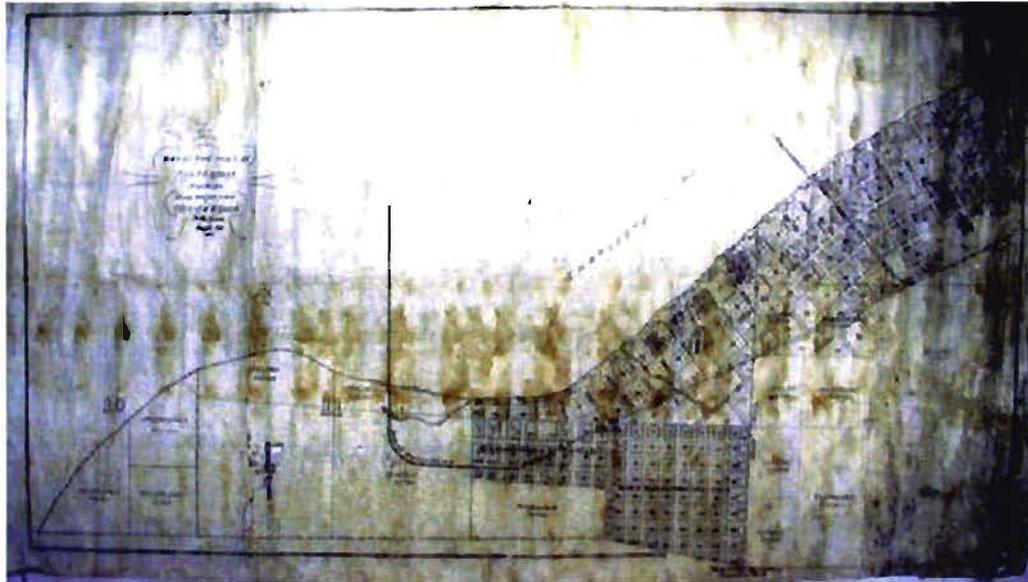


Figure 16. Two views of the A.W. Gilchrist Map of Punta Gorda dated to 1892 showing location of Long Dock. The upper image is of the complete map and the lower image is of the waterfront between Long Dock and the Hotel Pier. Map from the collection of Vernon Peeples.

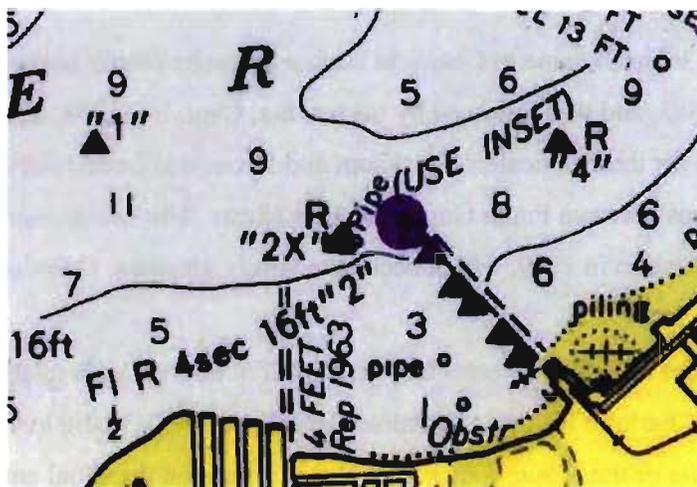
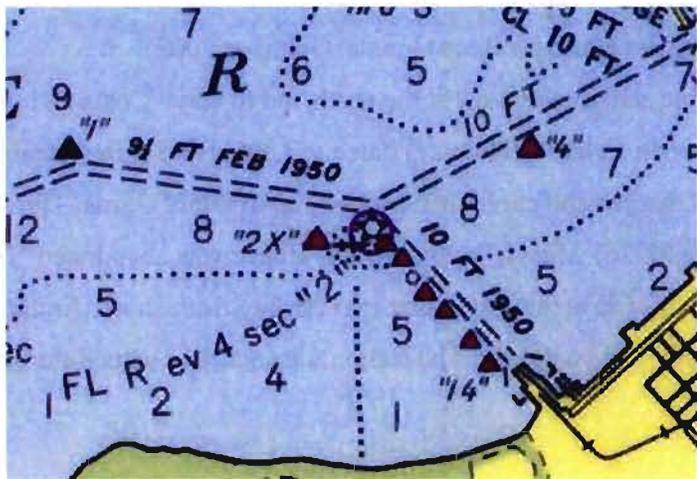
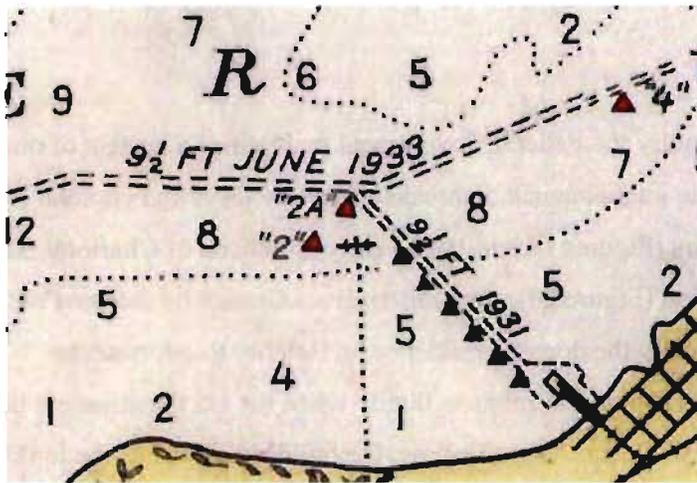


Figure 17. Three views of the mouth of the Peace River at Punta Gorda in the area of Long Dock from nautical charts dated to

1929,

1956 and

1967.

Quarantine Stations

In the late 19th century the Federal Government maintained a system of quarantine stations at ports of entry to guard against outbreaks of yellow fever and cholera. No Quarantine Station appears (Figures 18 and 19) on early US charts of Charlotte Harbor. The first Quarantine Station (Figure 20) was built on Boca Grande by the state of Florida around 1890 and was actually the doctor's residence on Belcher Road, near the lighthouse. The house was sold to the Johnson family when the US Government built a Quarantine Station on Cayo Costa. After this time, the building served as the look out for Boca Grande pilots as Iredell W. Johnson served as chief pilot from 1889 to 1933. This structure is currently the oldest house on Boca Grande. (Johnson 2002)

A second quarantine station was built at the north end of Cayo Costa and operated by the US Navy. It appears on a chart (Figure 21) dated to 1895. Here ships remained until they were cleared of disease and could then proceed up to Punta Gorda. The station appears on charts (Figures 22-26) while in operation and after it was abandoned. This station consisted of a T-shaped structure extending into the bay from shore. At the end of the structure were a building and boat dock. The station's launch was named the *Sea Gull*. (Figure 27)

Pilots

Capt. William H. Johnson came to Charlotte Harbor from the family home in North Carolina around 1885, and was followed by his brother, Capt. Iredell W. Johnson in 1888. William worked for the fish dealers Blocksom and Lewis and Iredell ran the *Alice Howard* on daily runs between Punta Gorda and Fort Myers. The two formed the Boca Grande Pilots Association in 1889, which became a family business. (Johnson 2002)

Without the services of a pilot a vessel may find itself in distress as is related by the descendent of one of Charlotte Harbor's captains. Capt. Ernest J. DeVedig lost a vessel – either the *Cornelia* or the *Minna Erwin* - off Boca Grande on the shoal entering

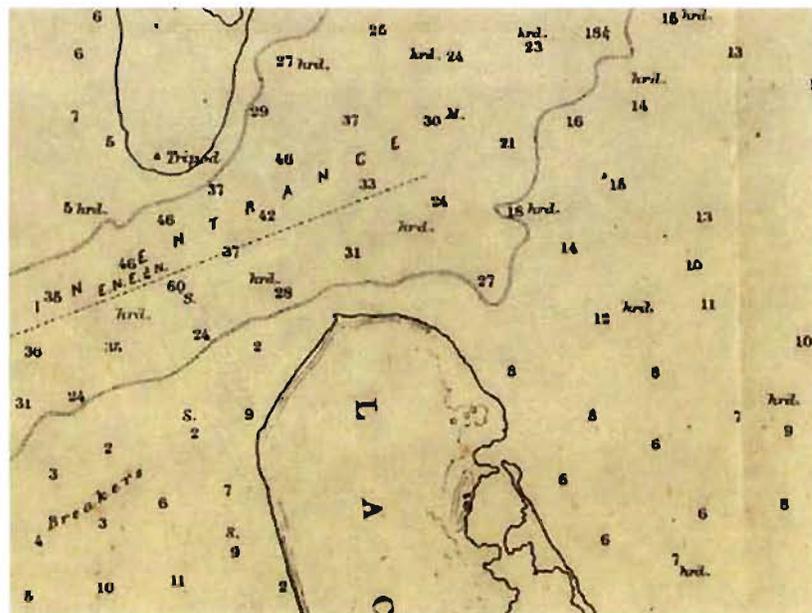
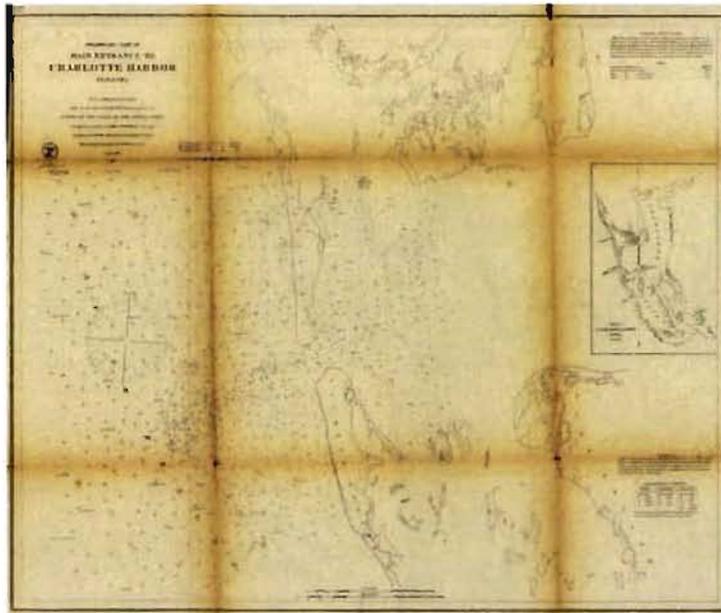


Figure 18. 1863 chart of the main entrance to Charlotte Harbor with a close-up of shores of Gasparilla Island and Cayo Costa decades prior to the construction of quarantine facilities. Image captured from chart available from the Library of Congress on the world wide web at: <http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Call number G3932.C5 1863 .U5 CW 117.37.

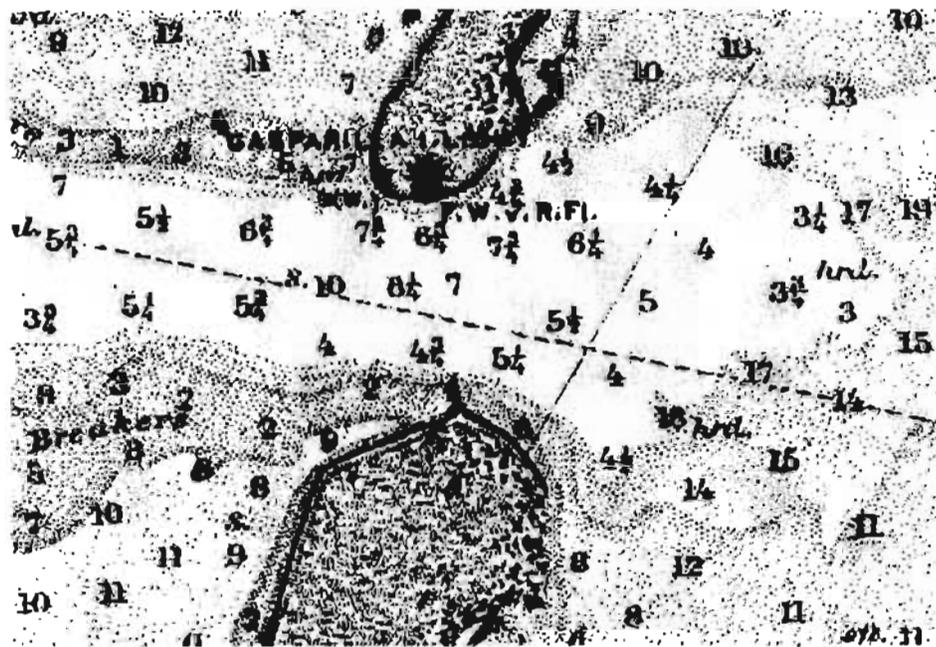
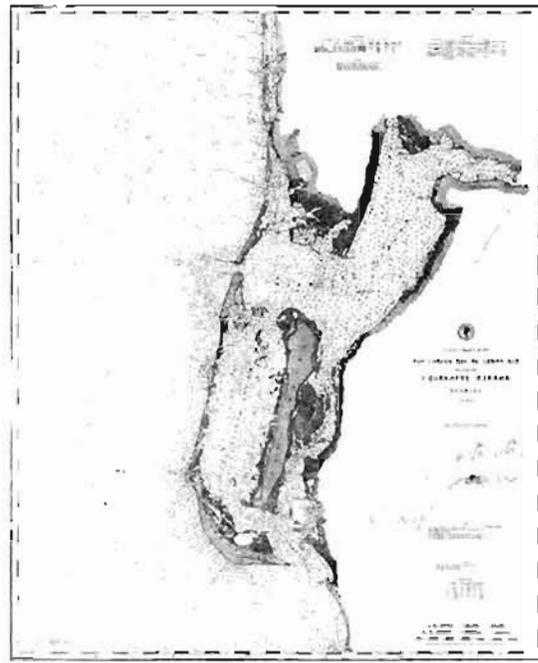


Figure 19. 1883 chart of Charlotte Harbor with a close-up of shores of Gasparilla Island and Cayo Costa prior to the construction of quarantine facilities. Image created from chart available from NOAA on the world wide web at: <http://historicals.ned.noaa.gov/historicals/histmap.asp>. Chart number CP1815C.

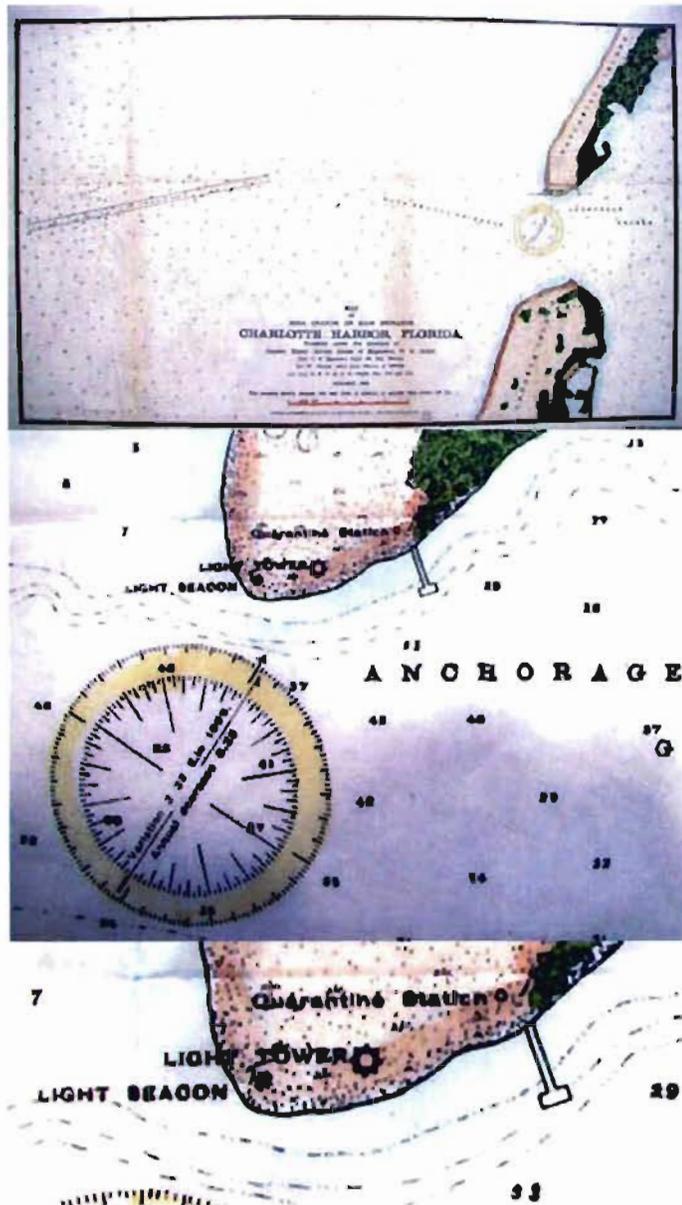


Figure 20. Boca Grande Quarantine Station as seen on 1899 map of the main entrance into Charlotte Harbor. From the collection of Vernon Peebles.

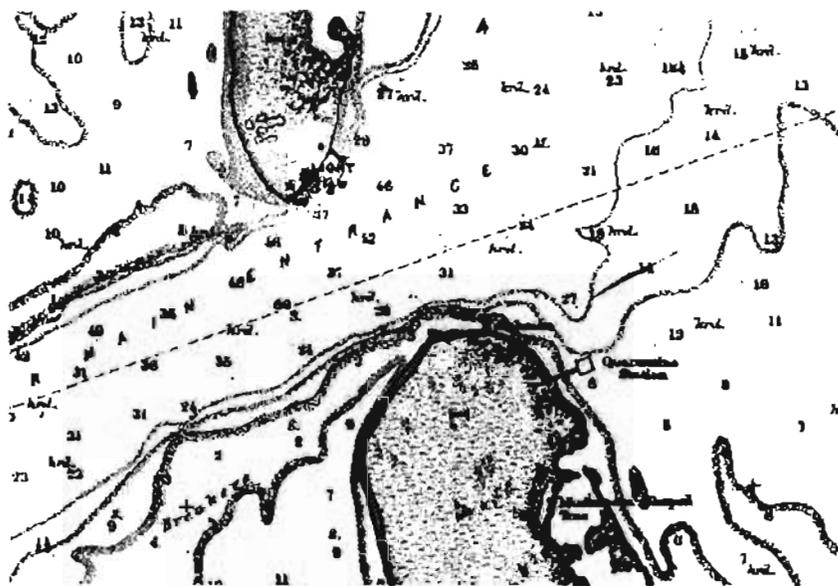


Figure 21. 1895 chart of the main entrance to Charlotte Harbor with a close-up of shores of Gasparilla Island and Cayo Costa showing the Quarantine Station and warehouse at the north end of Cayo Costa. Image created from chart available from NOAA on the world wide web at: <http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Chart number CP1121C.

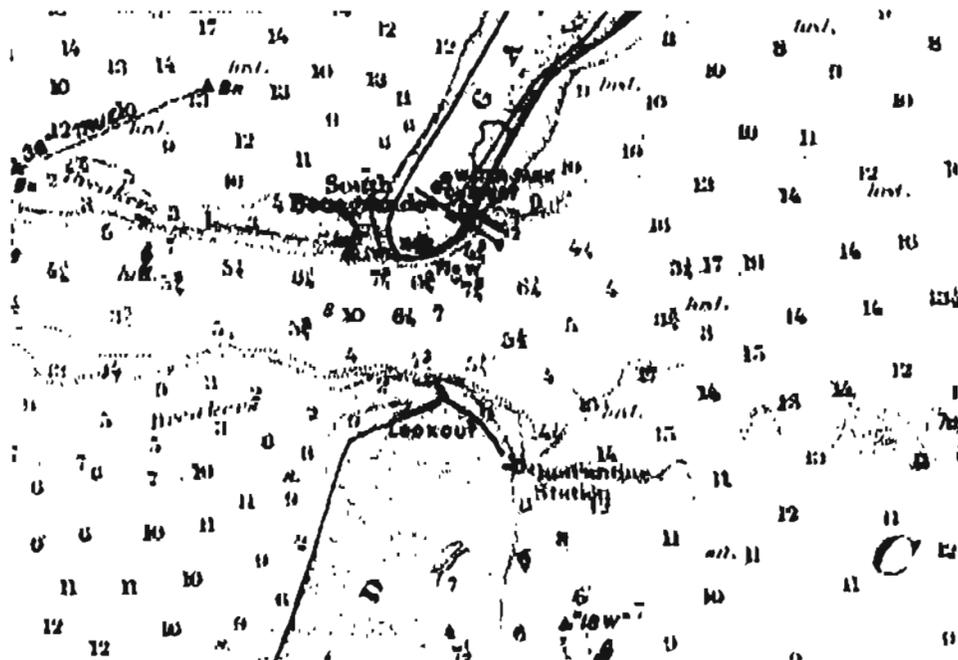


Figure 22. 1916 chart of Charlotte Harbor with a close-up of shores of Gasparilla Island and Cayo Costa showing the Quarantine Station at the north end of Cayo Costa and the phosphate dock at Boca Grande. Image created from chart available from NOAA on the world wide web at: <http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Chart number 1759-1916.

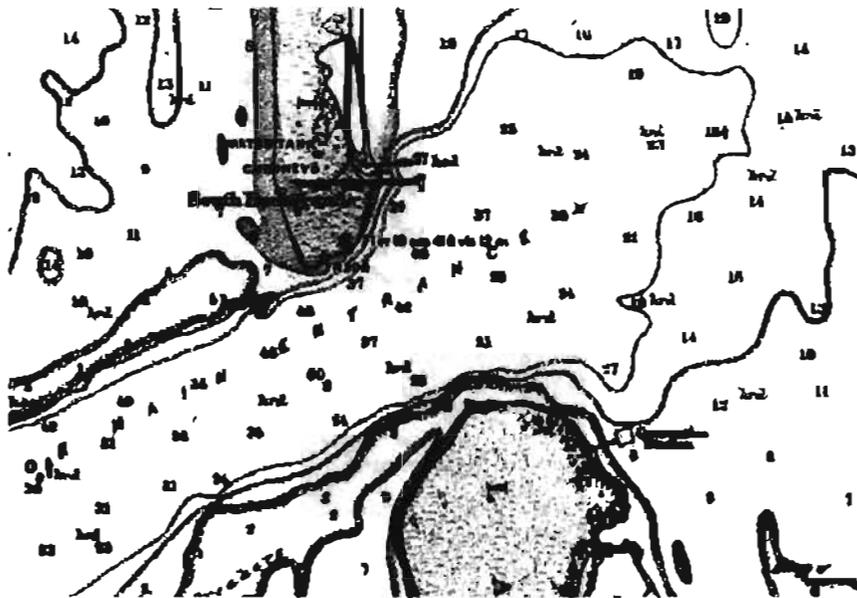
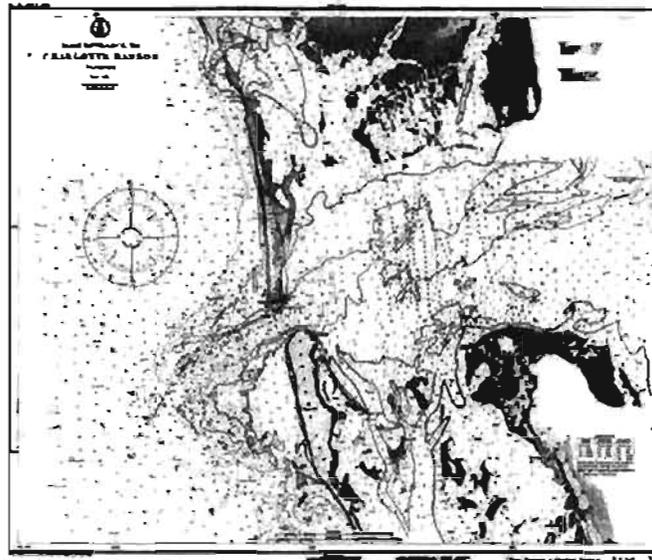


Figure 23. 1925 chart of the main entrance to Charlotte Harbor with a close-up of shores of Gasparilla Island and Cayo Costa showing the Quarantine Station at the north end of Cayo Costa and the phosphate dock at Boca Grande. Image created from chart available from NOAA on the world wide web at: <http://historicals.ned.noaa.gov/historicals/histmap.asp>. Chart number CP3234C.

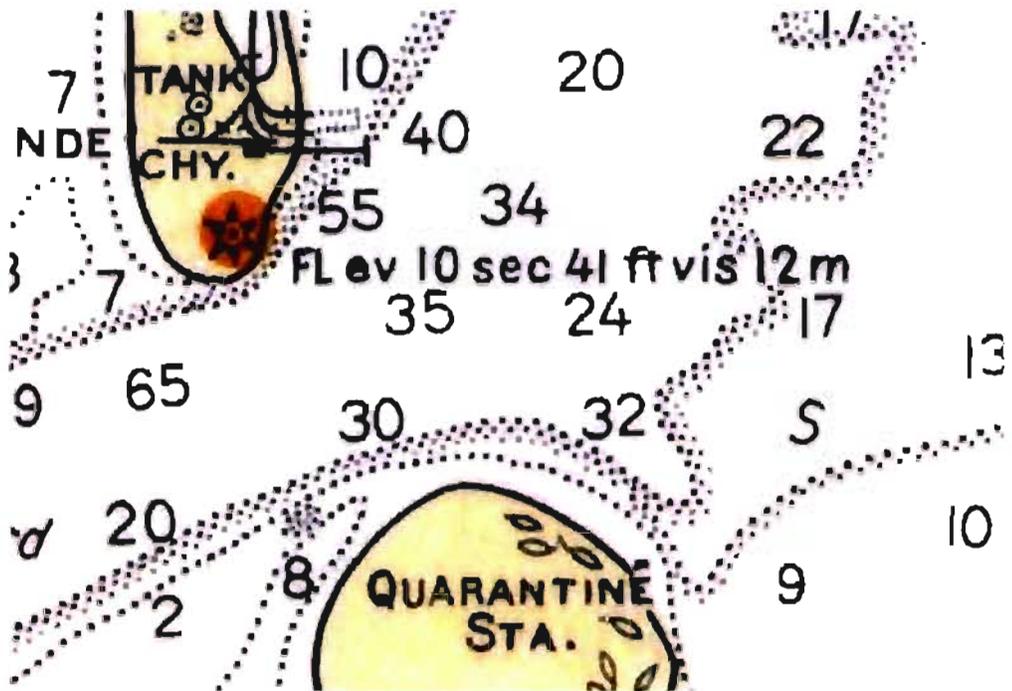
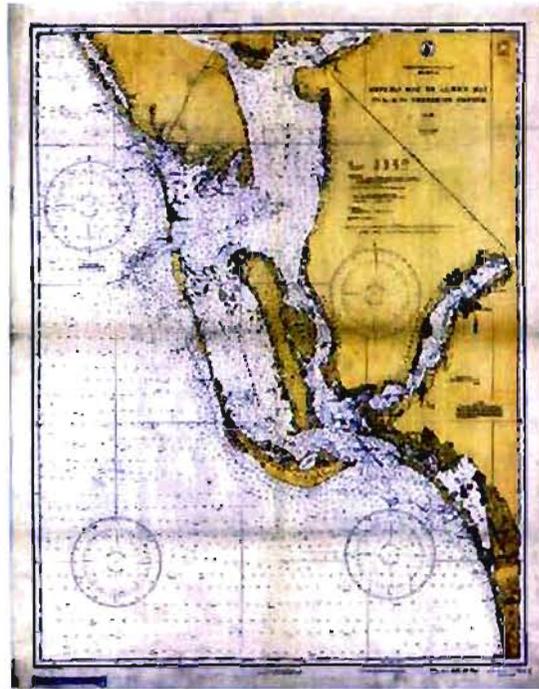


Figure 24. 1929 chart of Charlotte Harbor with a close-up of shores of Gasparilla Island and Cayo Costa with the Quarantine Station labeled, but with no structure drawn at the north end of Cayo Costa. Note the phosphate dock at Boca Grande. Image created from chart available from NOAA on the world wide web at: <http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Chart number 1255 11-1929.

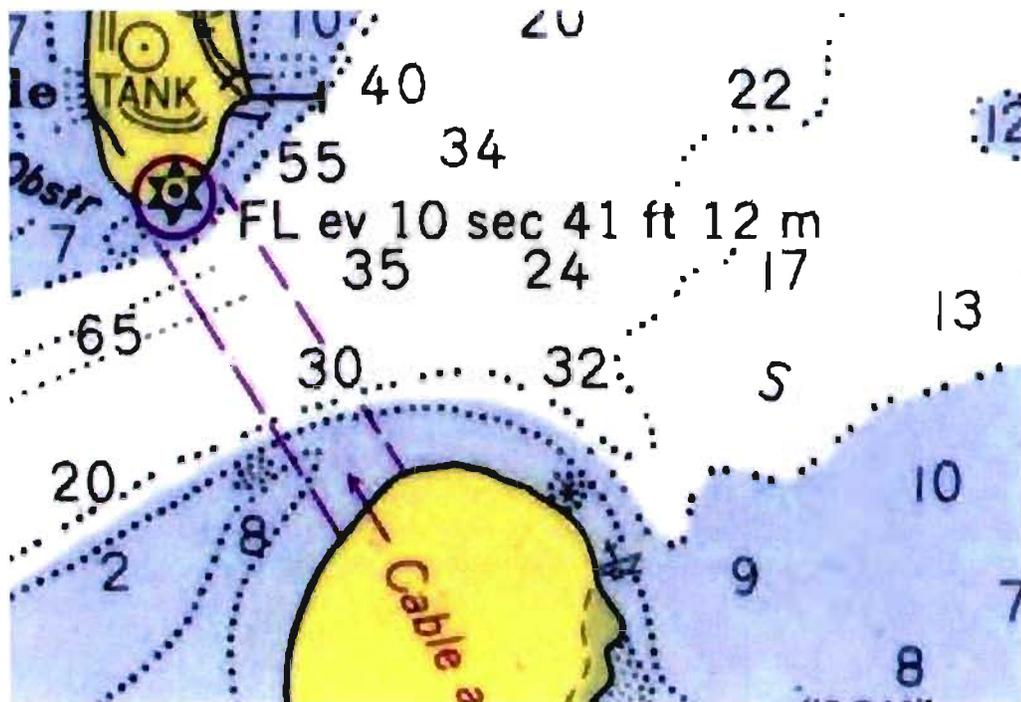
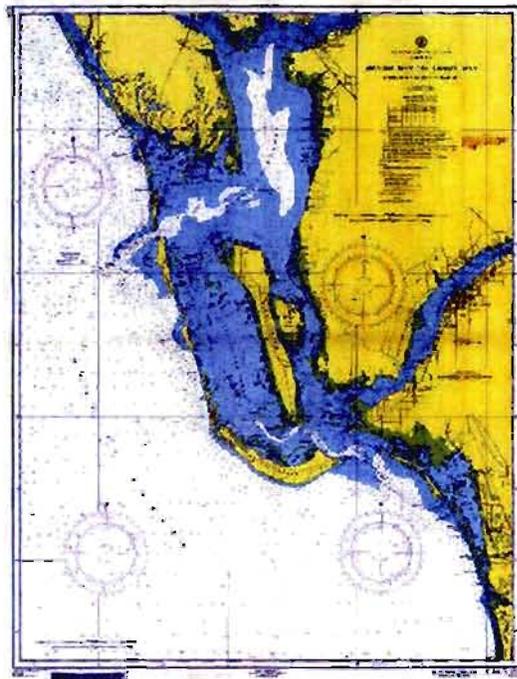


Figure 24. 1956 chart of Charlotte Harbor with a close-up of shores of Gasparilla Island and Cayo Costa with a symbol indicating derelict Quarantine Station dock, and an exposed shipwreck at the north end of Cayo Costa. Note the phosphate dock at Boca Grande. Image created from chart available from NOAA on the world wide web at: <http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Chart number 1255 11-1956.

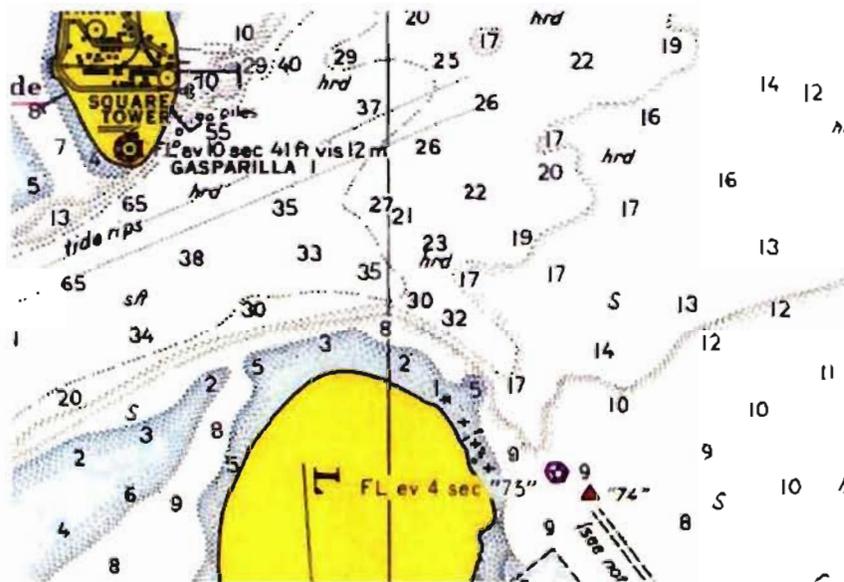
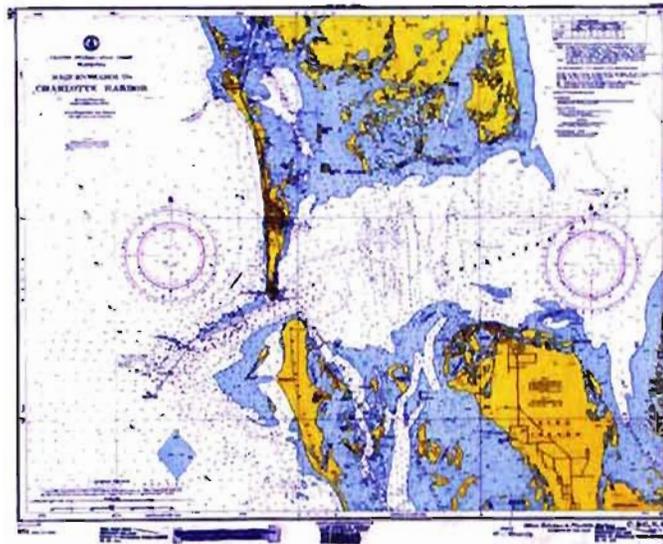


Figure 26. 1961 chart of the main entrance to Charlotte Harbor and a close-up of shores of Gasparilla Island and Cayo Costa. A symbol indicates the derelict Quarantine Station dock at the north end of Cayo Costa. Note the phosphate dock at Boca Grande. Image created from chart available from NOAA on the world wide web at:

<http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Chart number 474 7-1961.



Figure 27. This is most likely the Cayo Costa Quarantine Station. a) Station boat *Sea Gull*. b) Station building, with Boca Grande visible in background. Courtesy of the National Library of Medicine.

Charlotte Harbor sometime around 1890. They were blown aground in storms with no loss of life as crew and even cattle swam ashore. Capt. DeVedig, who did not swim, was a tall man and reportedly waded ashore. With the loss of his ships, Capt. DeVedig was forced to look for employment and worked at the Boca Grande Quarantine Station from 1894 to 1896. (pers. comm. Sophia Bauer - great grand-daughter of Capt. DeVedig)

Maritime Professions

The Federal census lists households according to a number of social and economic factors. One listing is for professions. Below is a list of maritime-oriented profession and the individuals who practiced them taken from the Census for 1900 and 1910.

1900 Census

The Federal Census for DeSoto County in 1900 lists 80 individuals with maritime occupations in northern Charlotte Harbor. There were 38 fishermen, four fish dealers, 27 sailors, two pilots, six boat builders, one sail maker and two in the Light Service. The fishermen included: Fred Bell; Mills Erin Bell; Storm Chadwick; H.B. Cha---ir; Alex Danielson; Henry N. Decoster; John Devine; Charles Forman; Earnest Fulford; Somer E. Giddens; Willie Gurtins; Edgar Hall; George Hamilton; Isaac Hamilton; Thomas O.R. James; Samuel E. Johnson; Andrew Kennedy; A. Lawrence; C.D. Linqvist; J.J. McCann; Richard D. McHargus; Clifford McMullin; Ivey Midgett; J.W. Moon; Henry Mower; Thomas A. Parkerson; M. Pusikney; John Quiette; John D. Riggs; Ian Thompson; Charles Tucker; Horace T. Wade; William Washington; Julius Whitehead; J.P. Willis; John H. Willis; Eugene D. Willis; and Charles Wright. The fish dealers were: L.T. Blocksom; George G. Brown; Larue B. Giddens; and J.C. Lewis. The sailors/mariners/boatmen included: Thomas C. Boggess; Zory Harris Curry; Louis S. Daniels; W.B. Drakes; William H. Farrell; A. Gaskill; Harry Gaskill; Robert S. Gillis; William Goff; Callie R. Gray; Louis C. Griswold; W.W. Holmes; George Hustin; McLeod Hustin; Wellington V. Hustin; Collier S. Hy-n; H.W. Kirby; William H. Low;

Fulton McGuire; Charles M. Mennir; Nicholas Nelson; Francis Tucker; Milton Tucker; Jay J. Waltmus; Henry Whitmon; and J.C. Williams. The pilots were I.W. Johnson and W.H. Johnson. The shipbuilders/boatbuilders/caulkers/ship carpenters were: T.A. Bass; George Brown; John Holleyman; Andrew Perkins; Solomon Phillips; and David Smight. The sail maker was F. Rickman. Those in the Light Service included William Devure and William Lester. (Sources: <http://www.rootsweb.com/~fldesoto/1900pgt1.txt>, Punta Gorda (Town), Precinct 7; <http://www.rootsweb.com/~fldesoto/1900ch.txt>, Charlotte Harbor, Precinct 5; <http://www.rootsweb.com/~fldesoto/1900gc.txt>, Grove City, Precinct 6; <http://www.rootsweb.com/~fldesoto/1900cl.txt>, Cleveland, Precinct 19)

1910 Census

The Federal Census for DeSoto County in 1910 lists 43 individuals with maritime occupations in northern Charlotte Harbor. There were 36 fishermen. The sailor was John Quiette. There were three boat carpenters: Lem Barnhill, Fred Bell and Joseph S. Johnson; as well as one ship carpenter: Errick Danielson. The boat corker [caulker] was Thomas Roberts. The lighthouse keeper was Hiram L. Curry. The fishermen (36) were: Henry Brookes; James Brookes; Charles H. Buchan; Hubbert E. Buchan; Robert J. Cash; Robert Crews; William G. Crews; James A. Daniels; Lewis B. Daniels; Errick Danielson, Jr.; Osman Danielson; George E. Decoster; Henry Decoster; Harry W. Gaskill; Edward Gillikin; Matthew D. Green; William B. Guthrie; Edgar Hall; Arthur Holenbeck; William B. Lanier; William F. Lanier; Neil A. Larson; Neil C. Larson; Oscar Larrison; Council Lewis; Isaac W. Lewis; Ebben Lough; Edward Pinder; John Riggs; William J. Riggs; Ira D. Thomson; Horace T. Wade; Ferren B. Weeks; Emmet C. Willis; Garrison L. Willis; and Mott Willis. (Source: <http://www.rootsweb.com/~fldesoto/1910ch.txt>, Charlotte Harbor, Desoto Co, FL, Precinct 5)

African-Americans in Charlotte Harbor

George Brown

The Cleveland Marine Steam Ways was owned and operated by George Brown, an African-American, who had been apprenticed to a shipbuilder in his native South Carolina. Brown's boat yard had a marine railway for hauling boats from the water. At least one photograph of a ship on Brown's ways exists (Figure 28) and can be seen in Williams and Cleveland, 1993. Two pictures of Brown himself exist in the Florida Department of State Photographic Archives (see <http://www.floridamemory.com/PhotographicCollection/> and search for photos MA0216 and n041392). Brown employed several white workers and is sometimes hailed for his early affirmative action (pers. comm. US Cleveland), but his hiring practices may have simply reflected the available labor supply or may have been an attempt in his part to not fly too far in the face of race relations at that time (pers. comm. Vernon Peoples).

Captain Joseph Blanchard

Joseph Blanchard was an African-American boat captain and fisherman who lived in Punta Gorda. His house built in 1925 was recently moved and is undergoing restoration to serve as an interpretive center for the African-American experience in Charlotte Harbor.

20th Century Developments

The Florida real-estate boom of the early 20th century changed the face of Florida and although activity in Charlotte Harbor was not on the same scale as seen along Florida's east coast, it was still extensive in its effects, and continues to this day. Early developers took stories of pirate gold and used them among other techniques to lure settlers to the west coast. The Great Depression ended the real-estate boom, but development began again in earnest after World War II.

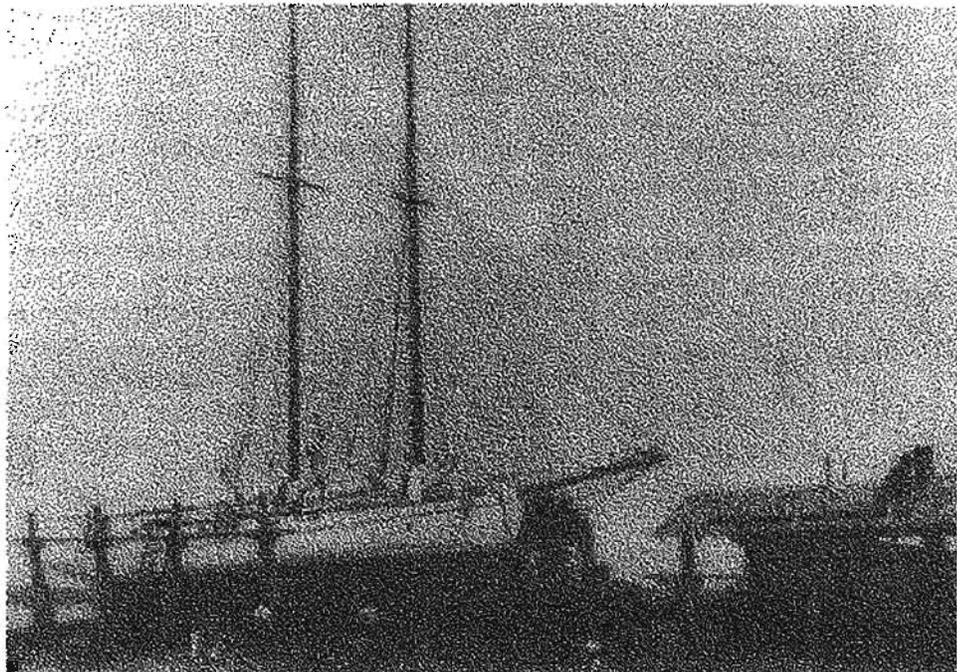


Figure 28. a) The Cleveland Marine Steam Ways was owned by African-American George Brown, after Williams 1993. b) Brown is pictured in front of his home, from Florida Photographic Collection.

AWOIS Database Search for Charlotte Harbor

To ascertain if the US Government had data on vessels lost in Charlotte harbor we conducted an AWOIS Database search for Charlotte Harbor. This search turned up only two wrecks. Both sank in the 20th Century. One vessel is known by name, the *Little David*, which sank in 1960. The second wreck's name is not known, but it was a dredge lost on March 26, 1936. The wreck symbols appear on NOAA Chart Number 11426.

Summary

The long and active maritime past of Charlotte Harbor suggests that it is a vital area to search for submerged cultural resources. Potential underwater sites include submerged Native American sites, especially those from a time when sea levels were up to 50 feet lower than today. There is the possibility of finding material related to early Spanish explorers. Ponce de Leon careened a boat possibly in Pine Island Sound. Some writers argue that Panfilo de Narvaez and Hernando de Soto actually landed at Charlotte Harbor and not as is traditionally believed at Tampa. This period is confusing at best and is reflected in maps of the era. Tampa Bay is actually named for the Native American village of Toempe located on Pine Island. In the Colonial Period the bay was a base of operation for Spanish/Cuban fishermen who fished these waters until well into the 20th century. The American Period saw the first permanent settlement other than Native Americans and continues to see the development of Florida especially around the waterfront. Over this timeline vessels have been lost or abandoned throughout the harbor. The first step in locating these sites after careful historical research is to conduct a remote sensing survey of the areas that saw the most maritime activity.

CHAPTER FOUR

METHODOLOGY

Introduction

Mote Marine Laboratory (Mote) investigations are part of an ongoing program to locate and assess the submerged cultural remains of southwest Florida. This project represents the first remote-sensing survey work to located submerged historic properties undertaken by Mote. Mote wanted to establish a model for future investigations.

The Charlotte Harbor Shipwreck Survey set the goal of beginning the first systematic scientific archaeological survey of Charlotte Harbor. Past work in the bay and surrounding Gulf of Mexico waters includes investigations by treasure hunters and contract archaeologists assisting beach re-nourishment projects. Prehistoric archaeologist George Luer has published on the extensive Native American sites from Sarasota County south through Lemon Bay and into the Northern end of charlotte Harbor (Luer 1999, 2002).

Mote first approached a marine surveyor (Bieber Associates) about assisting with a shipwreck survey of Charlotte Harbor. Bieber was interested and the next step was to look for funding and to plan an appropriate project. The Florida Division of Historical Resources awarded Mote an historic preservation small grant for \$30,000 to conduct these investigations. The project was planned for the fall of 2004. Hurricane Charley hit Charlotte Harbor in August 0f 2004 bringing tremendous damage throughout the bay including destroying Mote's field station in Pineland. The project was postponed until housing could be arranged. Mote could not get permission from Lee County to place a temporary trailer on its Pineland property. Fortunately Don and Dorothy Gulnack consented to allow Mote scientists to operate from their property on Demere Key. With housing unavailable the project was rescheduled after obtaining an extension from the Florida Division of Historical Resources.

Bids were solicited for remote-sensing services from Beiber Associates, Measurtronics, Inc. and Panamerican Consultants, Inc. While Beiber Associates had the

lower bid they could not make the project timeframe due to other work commitments. Panamerican was the next low bidder and they were available and therefore selected as the subcontractor. Both Beiber Associates and Measurtronics, Inc. expressed their desire to assist the survey now or in the future.

Objectives

The Charlotte Harbor Shipwreck Survey's goal of interpreting the maritime culture of this National Estuary required several objectives. These objectives include research in libraries and archives interviews with local informants to glean areas of Charlotte Harbor that are most likely to contain submerged historical resources.

Background Research

The Charlotte Harbor Shipwreck Survey examined and assembled background materials on the history and archaeology of Charlotte Harbor. This material came from secondary histories and primary source material. It was based upon research into archives (including the Florida Master Site File), area shipping activities, vessel losses, historic maps and charts, and aerial photography.

Another task was to identify sources of additional background information that can be consulted in the future as the Charlotte Harbor Shipwreck Survey moves into phases of ground truthing targets and documenting archaeological sites. The Charlotte Harbor Shipwreck Survey identified two main sources of information from private collections. Tom Touchton of Tampa, Florida, has granted the survey permission to examine and copy his extensive library of Florida maps. Vernon Peoples, a former legislator and historian has been collecting information on Florida history and specifically that related to Charlotte Harbor and Punta Gorda since the 1940's. Mr. Peoples has agreed to give the survey access to his collections, which include books not found in local libraries, material photocopied from the Library of Congress, a card file of local newspaper articles, a map collection, and a bottle collection. One important item from Mr. Peoples collection and examined for this report is a book describing the

Liverpool phosphate processing and loading facility located on the Peace River in southern De Soto County. This site represents perhaps the oldest industrial site in south Florida.

Historical Societies

The Charlotte County Historical Center, located at Bayshore Live Oak Park, has a small archive consisting mainly of a collection of historical photographs. In 2005 local historian U.S. Cleveland donated his private collection to the Historical Center. Cleveland collected material on local history for over 50 years. Unfortunately his home suffered extensive damage during Hurricane Charley in 2004 and his private library was significantly affected. Many of his one-of-a-kind volumes could not be found in other libraries. This was an enormous loss to the community. The Charlotte Harbor Shipwreck Survey encouraged all private collectors to address the long-term curation of their collections. It is worth noting in this instance that even had U.S. Cleveland donated his collection to the County prior to the hurricane it may not have survived as County buildings including libraries were significantly damaged.

Sarasota County has a Library System and Historical Center with materials on Florida and local history. Sarasota County's Myakka River flows into Charlotte Harbor.

Online Resources

The State of Florida has several good online resources including the Florida Photographic Collection at <http://www.floridamemory.com/PhotographicCollection/>. The Florida Bureau of Archaeological Research has the Florida Historical Contexts at <http://www.flheritage.com/facts/reports/contexts/>.

Various agencies of the State and Federal government operate sites useful in researching Charlotte Harbor history. The Library of Congress has the American Memory Homepage at <http://memory.loc.gov/ammem/index.html>, with a collection of historic maps. The National Oceanic and Atmospheric Administration houses the Office of Coast Survey's Historical Map and Chart Collection at

<http://nauticalcharts.noaa.gov/csdl/ctp/abstract.htm>, with over 20,000 maps dating from the late 1700's. The University of Alabama has a collection of Florida maps at <http://alabamamaps.ua.edu/historicalmaps/florida/>. The University of Florida's Florida Historical Map Collection is available at <http://www.uflib.ufl.edu/spec/pkyonge/fhmaps.html>.

The *Official Records of the Union and Confederate Navies in the War of the Rebellion* are available at <http://cdl.library.cornell.edu/moa/browse.monographs/ofre.html>. The volume entitled *The War of the Rebellion: a Compilation of the Official Records of the Union and Confederate Armies* is also available at <http://cdl.library.cornell.edu/moa/browse.monographs/waro.html>.

Related to Spanish exploration of the Florida's west coast the web page entitled *American Conquest* by Donald E. Sheppard at <http://www.floridahistory.com/inset44.html>, puts forward an alternative interpretation for the landing sites of early Spanish explorers.

Local Informants

The Charlotte Harbor Shipwreck Survey interviewed a variety of local individuals with information on historic shipwrecks. This includes individuals who have written on local history and archaeology such as Charles Blanchard, Canter Brown, Jr., U.S. Cleveland, Robert Edic, George Luer, Vernon Peeples, and Lindsey Williams. Also consulted were local fishermen with knowledge of bottom obstructions. This project continues to compile a list of local informants.

Search Area

Based upon the information compiled from background research and interviewing informants, the Charlotte Harbor Shipwreck Survey identified areas of the bay that most likely contain submerged historic resources. These are areas where vessels may have been lost for varied reasons. The entrance to the harbor has shoals on either side and is

known to have accounted for vessel losses. Inside the harbor are spots with sufficient water to provide an historic sailing vessel with good anchorage. Some areas where deep water gives way rapidly to shallow water make good careening places, where vessels could be heeled over to one side and have their bottoms repaired. There are reports of at least two marine railways in the bay. Several areas had historic docks and piers. In some locations these pier sites have been victim to development such as bridge construction or replacement by modern docking facilities. In other instances pier locations have been undisturbed since they fell into disuse. The areas around historic towns or where vessels are known to have regularly navigated also provide a starting point for searches for vessels that may have been lost but unreported.

The Charlotte Harbor Shipwreck survey uncovered nine areas (Figure 1) that saw a wealth of maritime activity and may contain the tangible remains of these enterprises. The areas consist of the mouth of the Peace River at the historic towns of Punta Gorda and Charlotte Harbor; the Peace River at Liverpool Island, several locations known for having cattle docks; the main entrance to the harbor; anchorages inside the main entrance, including two quarantine stations, a phosphate loading dock and a mooring/careening site; Pine Island Sound; the southern entrance into the bay system at Punta Rassa and into the Caloosahatchee River; and isolated locations in the Gulf of Mexico.

Remote-Sensing Survey

The project was conducted by a team of Mote personnel and those of the subcontractor, Panamerican. Specifically the project was led by principal investigator, J. COZ Cozzi, Ph.D., RPA. Panamerican personnel included Mr. Michael Krivor and Dr. Michael Faught. Panamerican also supplied the remote-sensing equipment as part of their subcontract. The equipment used in the survey was state-of-the-art and the type utilized by the industry for a variety of applications other than scientific research, such as clearing areas ahead of dredging activities. Panamerican personnel instructed the principal investigator in the use of this specific equipment and provided time to practice using it during the survey, both during daytime field survey and evening-time data processing.

This service will enable Mote to better utilize this equipment in the future, should the lab be successful in acquiring through local funding.

The first step in any survey is establishing locations and today this is done with a high-degree of accuracy using a Differential Global-based Positioning System (DGPS). Panamerican Consultants, Inc. (Panamerican) provided the Charlotte Harbor Shipwreck Survey with a Trimble DSM212H DGPS accurate to less than one meter (three feet). This system derives positioning from information gathered from satellites in orbit around the Earth and corrects with a signal from a shore-based receiver that compares its position to the position it receives from the satellites and then transmits this correction to the unit on the survey vessel. The Charlotte Harbor Shipwreck Survey used the North American Datum of 1927 (NAD 1927).

The survey instruments used in the Charlotte Harbor Shipwreck Survey were a marine magnetometer and a side-scanning sonar array. Panamerican provided a Marine Magnetics® SeaSpy overhauser-effect marine magnetometer. This device measures magnetic intensity and notes fluctuations from the Earth's ambient or background reading, which are caused by a variety of circumstances including submerged cultural resources. The magnetometer reports in units called gammas, equal to 0.00001 gauss. The normal background reading for Charlotte Harbor varies from location to location, but is around 47250 gammas. This instrument has a sensitivity of one gamma and takes readings every second. The magnetometer and DGPS data were integrated in Hypack® software on a Sony® laptop computer. This provided discrete locational information for each magnetic anomaly.

The side-scan sonar system provided by Panamerican was a Marine Sonic Technology Sea Scan 600 kHz tow-fish and a Midwest Micro desktop computer, loaded with Sea Scan® software. This instrument emits acoustic pulses from two channels, one on each side of the tow fish, and interprets reflected, dissipated and absorbed signals to create two-dimensional representations of the three-dimensional sea floor. Any features protruding from the bottom appear as bright spots with black shadows behind them. The side-scan sonar record is examined for features with characteristics such as height above

bottom, linearity, and structural form. Different scales can be employed to either see across a greater distance of the sea floor or to see a higher-quality image of a smaller area. Regardless of the scale employed, lanes are run that overlap recording of the sea floor so that individual lanes can be stitched together electronically for form a mosaic of the survey area.

Housing and Facilities

The Charlotte Harbor Shipwreck Survey was based on Demere Key (Figure 29). This small island is connected to Pine Island by a causeway. It has dormitory-style housing to accommodate eight researchers. There is a boat basin and boat ramp on the island and just off the island is a fishing coop with another boat ramp. The project was allowed to use the coop boat ramp when circumstances dictated.

Boats

The survey team operated from several different boats (Figure 30) also provided by Mote. These boats included an 18-foot aluminum jon boat named *Myakka*, a 21-foot Proline named *Anna B.*; and a 25-foot Parker with a modified V-hulled and a cuddy cabin. The choice of boat depended upon the requirements of the survey area.

Data Reduction and Interpretation

The Charlotte Harbor Shipwreck Survey examined data sets from both magnetometer and side-scan sonar and reduced this data into tables and images that convey the targets identified through the survey. Targets acquired during fieldwork were compiled in a Geographic Information System (GIS) (Arcview).

This report of investigations has been submitted to the Division of Historical Resources with chapters on Historical Background, Survey Methodology and Results, as well as Recommendations for future work in compliance with state grant guidelines. This was a remote-sensing survey and did not include ground truthing of acquired targets,



Figure 29. Demere Key as it looked when the Sea Grape Lodge was in operation. Note the causeway and boat basin built in the 1950's. The lodge house (below) is covered by trees behind the boat basin



Figure 30. Charlotte Harbor Shipwreck Survey equipment and boats. a) magnetometer and sonar on dock, b) jon boat *Myakka* on Peace River, c) *Anna B.* in Demere Key boat basin, d) sonar on bow of *Anna B.*, e) Parker 25.

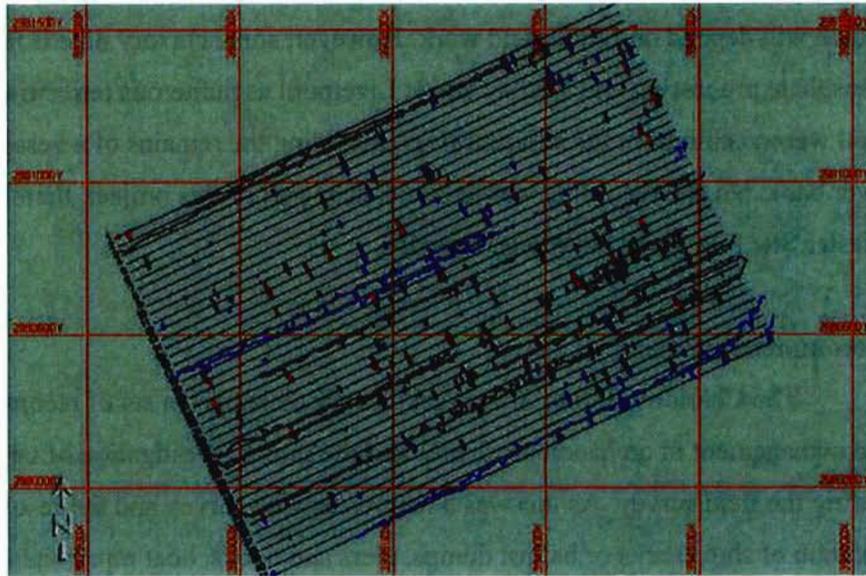
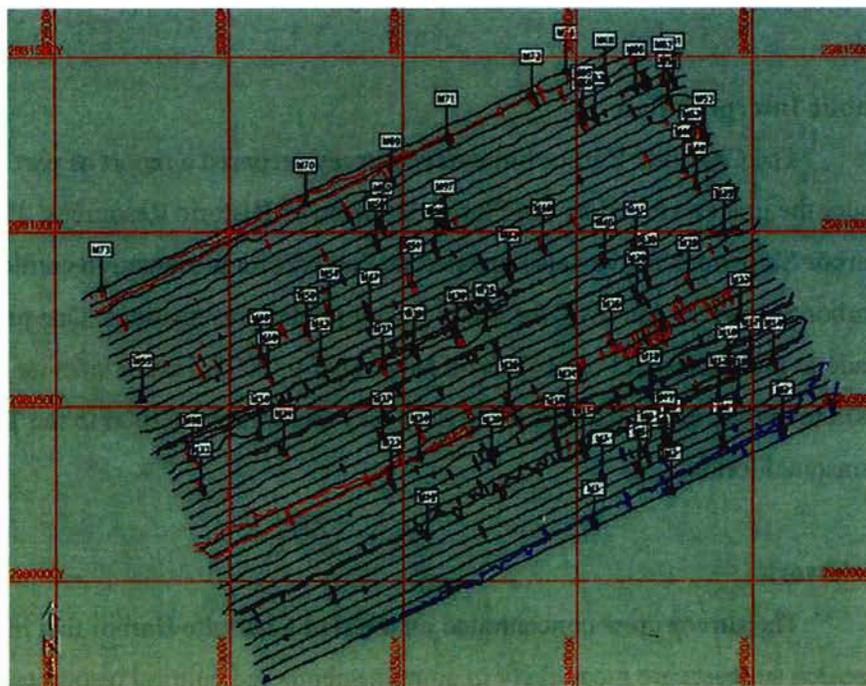


Figure 31. Magnetic contour maps of the Peace River offshore from the town of Charlotte Harbor. Above is an example of a raw contour map prior to data analysis for targets. Below is after analysis with individual targets labeled. (contour intervals equal to ten gammas)



which will depend on future field work. However, some cursory note is made of the phosphate processing and loading site at Liverpool as numerous terrestrial features on land were visible from the adjacent river, including the remains of a vessel exposed in the river bank. No site recording was undertaken as part of this project, therefore, no Florida Master Site File forms have been included.

Recommendations

The Charlotte Harbor Shipwreck Survey developed a set of recommendations for the management of archaeological sites and the future investigation of targets acquired during the field survey. As this was a remote-sensing survey and the results suggest the location of shipwrecks or ballast dumps, piers and docks, boat repair facilities, and quarantine stations, the project recommends that over two dozen of the targets acquired in 2005 should be ground truthed to determine whether or not they are submerged historical resources. The project also recommends that survey of Charlotte Harbor continue as the scope of this survey did not allow it to visit all the sites that historical research should be investigated.

Public Interpretation

The Charlotte Harbor Shipwreck Survey prepared a report as part of its obligation under the grant awarded by the Florida Division of Historic Resources. The Charlotte Harbor Shipwreck Survey also updated its PowerPoint presentation entitled "Charlotte Harbor Shipwreck Survey," for use in giving public presentations. One presentation was made to the Manasota Fossil Club on November 9, 2005. Future talks include February of 2006 to the Women's Club of Long Boat Key and March of 2006 to the Timesifters of Sarasota, Florida.

Fieldwork

The survey crew concentrated on areas of Charlotte Harbor that historical research suggests are most likely to contain submerged cultural resources. The planned

areas include the mouth of the Peace River from the 19th-century town of Cleveland downstream to the area of Mangrove Point; the Liverpool area of the Pease River; the mouth of the Myakka River from Cattle Dock Point to the north end of Charlotte Harbor; the shoal off Burnt Store; the waters around Cayo Pelau; shoal areas to the north and south just outside and inside the main entrance to the harbor (areas where wrecks have been previously reported and where docks and a late-19th-century Quarantine Station were located); the area offshore from Pineland where terrestrial Native American sites are reported; the shoals off Punta Rassa, Fisherman's Key, St. James City and Point Ybel (Figure 1). The crew surveyed most of these areas with the exception of the shoal off Burnt Store, the area offshore from Pineland where terrestrial Native American sites are reported, St. James City and Point Ybel. The allotted project time of two weeks did not allow for visits to these sites.

The Charlotte Harbor Shipwreck Survey Research Design follows the model of the successful Pensacola Bay Shipwreck Survey conducted by the Florida Bureau of Archaeological Research and continued by the University of West Florida. The survey crew operated from various locations around Charlotte Harbor including Demere Key (offshore from Pine Island), a various public and private boat ramps in the towns of Charlotte Harbor, Punta Gorda and on Pine Island. Mote Charlotte Harbor Shipwreck Survey had begun to build a community-based project that will carry on after this funded survey has been completed.

Sites Visited

Panamerican personnel and equipment arrived on October 17, 2005 and remained until November 6, 2005. Work was conducted seven days-a-week. The field work was interrupted briefly for evacuation due to the approach of Hurricane Wilma, which passed Florida on October 24, 2005. The first task was to mobilize from Mote's main campus on City Island in Sarasota to the field headquarters on Demere Key. The field survey work began on October 18, 2005 with a visit to Sanibel Island. The following locations were visited subsequently: October 19, Captiva Rocks and Useppa Island; October 20, Cayo

Costa Quarantine Station; October 21, Demere Key; October 25, Demere Key; October 26, Punta Gorda; October 27 and 28, the town of Charlotte Harbor; October 29, Myakka River Cattle Dock Point; October 30, Locust Point and Mangrove Point; October 31, Quarantine Rocks and east of Miller's Channel; November 1, Boca Grande Shoal; November 2, Punta Rassa; November 3, Liverpool; November 4, Fisherman Key; November 5, Punta Gorda's old Long Dock; and November 6, Cayo Pelau.

Work was conducted on week days and weekends with minimal interference from commercial or recreational boating traffic. The survey of the Punta Gorda Longdock did place the survey team close to the modern navigable channel where considerable boat traffic was encountered on a Saturday. The crew routinely left the Demere Key field station by boat or by truck with a trailered boat at 8:00 am and returned at 5:00 pm. From 6:00 pm to 10:00 pm the crew processed magnetometer and sonar records. The processing of sonar data consisted of making mosaics of sonar strips and tagging targets. The processing of magnetometer data consisted of contouring and targeting the data. Both sets of data yielded tiff images of sonar and magnetometer readouts.

CHAPTER FIVE

RESULTS

Introduction

The Charlotte Harbor Shipwreck Survey data contains 74 magnetic anomalies and 54 acoustic targets. The site at Liverpool Island of a phosphate processing and shipping facility has visible terrestrial components that come down to and extend into the water. The site of the old Long Dock in Punta Gorda is strongly suggested by both the magnetic and acoustic records together with information from historical resources. The same can be said for one of two quarantine stations that occupied Charlotte Harbor. All other targets will require ground truthing before more can be determined concerning their status as potential submerged cultural sites.

Survey Sites

Sanibel Island

On October 18 the survey crew visited Sanibel Island at the request of the Florida Bureau of archaeological Research (Arden) to investigate the report of a possible cannon in the water off the old Coast Guard lighthouse off the island's eastern tip and to test the survey equipment. We met with Jai Earle of the Sanibel Parks Department, who took us to the old Coast Guard station. She told that a local person named David Rowe reported finding a cannon as his find looked very much like photos of cannons in books on Florida shipwrecks. The items (Figure 32) were in half a meter of water approximately 7 meters (20 feet) offshore. A quick visual inspection with a mask and snorkel allowed us to identify the items as bell-ended ceramic pipes with concrete poured in them. We concluded that these items most likely represent old mooring for small boats once kept close to shore. A second concrete cylinder did not have a ceramic form. One of the pieces had an unidentified material protruding from the concrete, which may indicate that the concrete may have alternatively been footing for signposts.

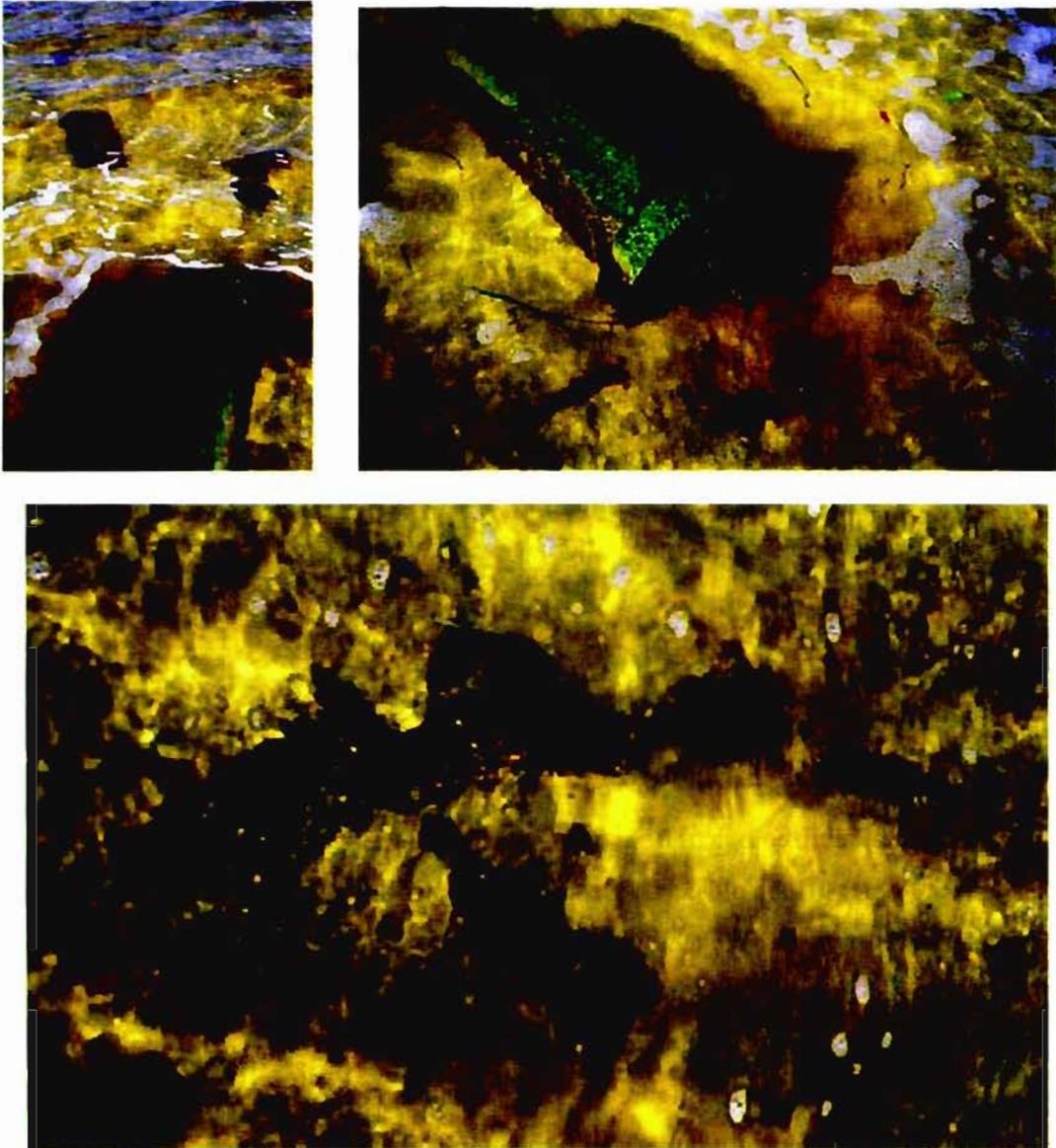


Figure 32. Debris off Sanibel Island at former Coast Guard Station. Interpreted as either old moorings or signpost foundations. Left is overall view of concrete filled outfall pipes and associated debris. Center is close-up of concrete filled pipe. Right is close-up of miscellaneous unidentified concretion. Photos from Jai Earle.

The boat and survey gear performed well with the exception of the magnetometer, which had an electronic problem that could not be solved in the field. The subcontractor had another magnetometer shipped out via next day delivery to the hardware store on Pine Island, which agreed to hold the package for pick up. The replacement magnetometer operated on the same overhauser effect, but was a small model named the Explorer. Despite its size, it yielded the same quality return as the larger and older model.

Useppa Island

On October 19, our attempt to investigate offshore at Pineland, which is the site of two large Native American mounds with remnants of a canal running between them, failed due to the extreme shoal water offshore. Our survey vessel, the *Anna B.*, only drew two feet of water, but there was only a foot of water this day. We instead opted to survey between Useppa and Part islands. The reason for searching Pineland had been to see if the sonar would reveal an offshore component of the Calusa canoe canal still visible on land at the Pineland Archaeological District (8LL1902). John Worth of the University of Florida's Randell Research Center and Ernie Estevez of Mote probed the offshore sediments and located an area similar to the shore features. Useppa Island is also a prominent Native American archaeological site, and therefore was also accessed by canoes in the past. Three survey lanes with the side-scan sonar between Useppa and Part Island did not reveal any features analogous to a canal.

Two thunderstorms caused delays and damaged the GPS unit. As with the magnetometer the subcontractor ordered a replace via next day delivery. This time we called up Measutronics, who had been one of our unsuccessful bidders for remote-sensing services. They expressed continued interest in Mote's investigations of shipwrecks in Florida and offered to assist if they could. When we called them they supplied a Trimble D132 DGPS unit at half the rate of our subcontractors normal supplier.

Quarantine Stations

Our first full day of surveying on October 20 was spent looking for the remains of the Quarantine Station off Cayo Costa (Figures 33-34). We set up survey lanes parallel to shore beginning at the north end of Cayo Costa and running about 500 meters to the south. We surveyed 11 lanes out from the shore. The water was clear and shallow so we could see the rocky bottom called Quarantine Rocks on modern charts. The magnetometer detected 15 individual anomalies (Figure 35), some with correlation on the sonar record (Figure 36).

Demere Key

On October 21 and 25, the survey crew examined Demere Key as the approach and aftermath of Hurricane Wilma prevented us from investigating other sites. We began by walking around the island with Wells Sawyers 1896 map and sketch and with a handheld Garmin® WAAS-enabled GPS unit that belonged to one of the crew members (Faught). We noted that two mounds from Sawyer's illustrations are still visible and appear largely intact, although clearing around them for landscaping may have disturbed evidence of the canoe canals that once ran between these mounds. Current owner/resident Don Gulnack told us that when Phil de Graff built the lodge building that he ran into burials and other artifacts. The lodge was placed on a shell feature described by Cushing as a temple, but by Moore as a Spanish feature associated with use of the island for fishing in the 19th century. The mangroves in the center of the originally crescent-shaped island were removed and a boat basin with a concrete seawall constructed. The dredged material was placed around the basin to build up the island.

On October 25, we surveyed a 10-meter by 10-meter (30-foot by 30-foot) area of the shore at low tide. The location is just below the lodge building at one of two concrete walls that run perpendicular to shore and are intended to prevent erosion. This area yielded glass and ceramics as well as some unidentified rusting iron. This shore has been periodically picked over. We instructed the Mote on-site staff to ask visitors not to collect

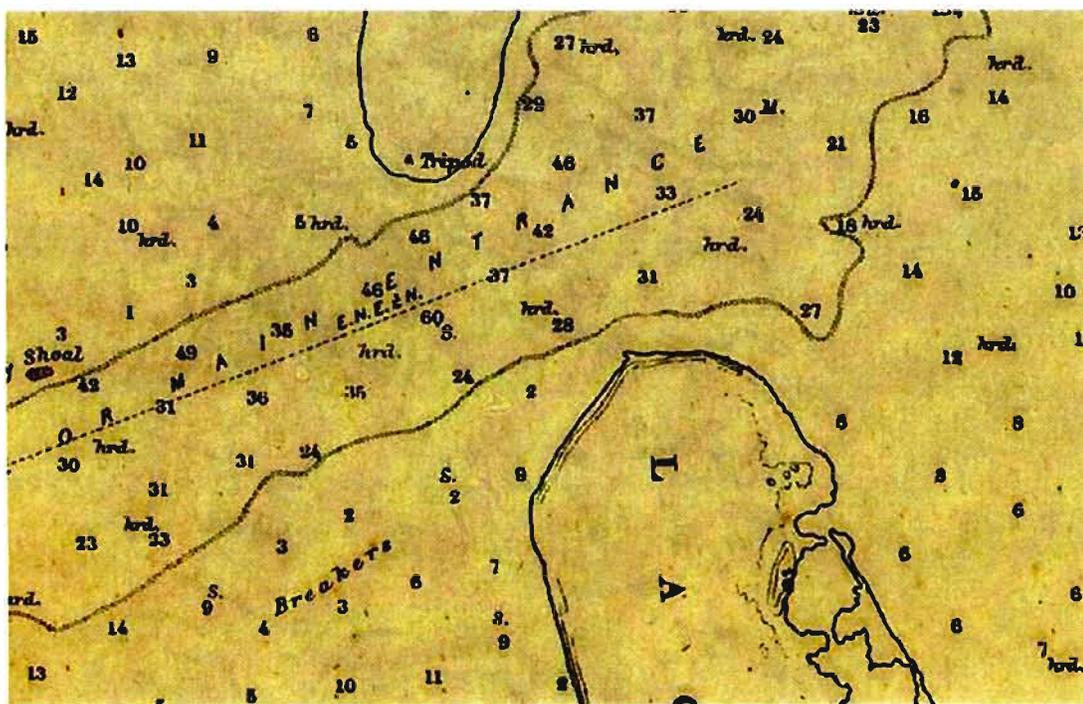
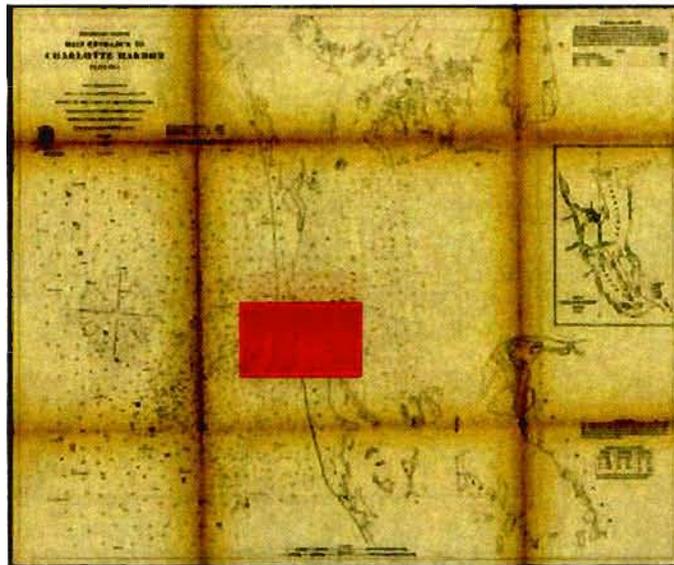


Figure 33. Nautical Chart of Charlotte Harbor for 1863 showing the Main Entrance prior to the establishment of a Quarantine Station. The station was later placed on the inside of the north end of Cayo Costa where a depth of 27 feet juts in from the south side of the main channel.

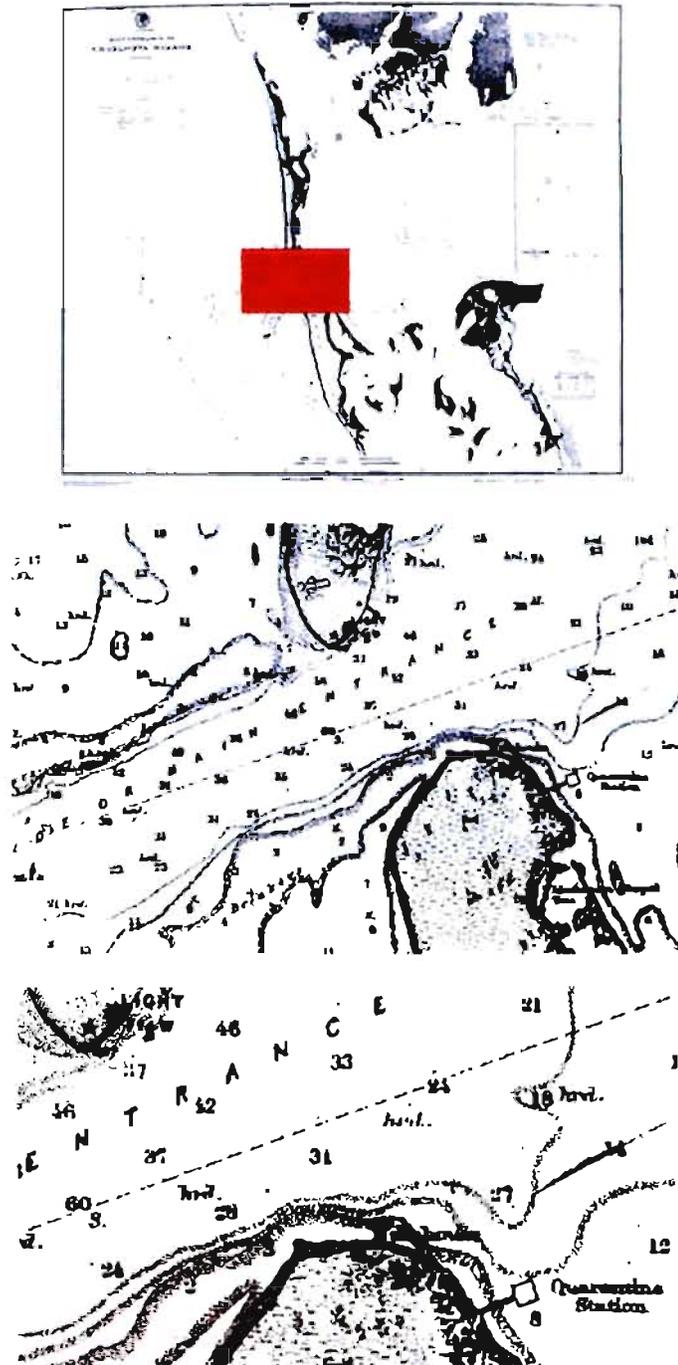


Figure 34. a) Chart of Charlotte Harbor from 1895 showing the Main Entrance after the establishment of a Quarantine Station. b) The station was located on the inside of the north end of Cayo Costa, c) where a depth of 27 feet juts in from the south side of the main channel.

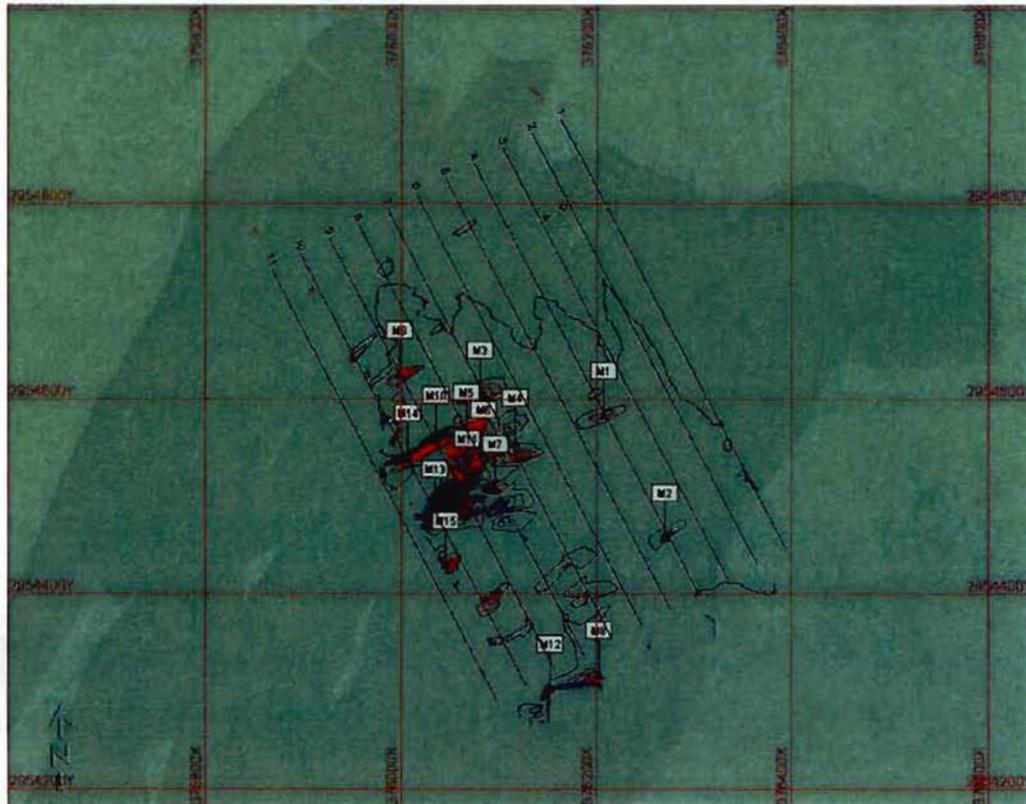


Figure 35. Magnetic contour map of Quarantine Rocks where the Cayo Costa Quarantine Station was located between the 1890's and 1920's. (contour intervals equal to ten gammas)



Figure 36. Side-scan Sonar mosaic of Quarantine Rocks showing several features related to the Cayo Costa (La Costa Island) Quarantine Station.

artifacts they might find, but report them, so they may be examined by Mote's archaeologist. The finds of October 25 include two prehistoric ceramics. We also noted numerous other prehistoric ceramics at other locations along the shoreline, but did not examine these. There were two body olive jar shards in the 10-meter area. Both are body shards, with one coming from the shoulder of a vessel and the other closer to the base. The olive jar shards were found in close proximity to one another. A final ceramic is a terracotta foot to an unidentified vessel. Included in the glass remains are a wide variety of bottle types. One nearly intact bottle is made from green glass with an applied lip. No mold seam is apparent and body and neck of the bottle appear to have turn marks in the exterior surface. The bottom is flat with a slight kick-up. Another find is the upper neck and lip of a demi-john. There are also two other bottle fragments and a piece of glass that may be from a bottle. One is a green-glass case bottle with embossed lettering with "...ATIC" and "...APPS" on one face and "...DAM" on another face. It has a moderate kick-up. It is interpreted as a bitters bottle. The other bottle shard is made from pink glass and was flask-shaped and is interpreted as a medicine bottle. The final glass shard is made from light-green glass is very thin, has seeds in the matrix and may have a mold line. It is very slightly curvature running perpendicular to the possible mold line.

We interview Don Gulnack as he has owned the property since 1973 and was a friend of the previous owner and has been a visitor to the island since 1949. Don built the guesthouse that served as crew housing during the project. During its construction Don noted findings "things" in the ground, which he avoided when possible. When Mote set up an internet connection in the guesthouse they opted for a satellite connection over a hard wire for these same reasons.

Historic Punta Gorda

On October 26, the survey crew traveled up from Pine Island along Burnt Store Road to Punta Gorda and launched its boat, the 25-foot Parker, from a public ramp at the base of the US41 northbound bridge. This boat ramp was used through October 30. We motored to the other side of the bridge and surveyed off the historic town of Punta Gorda.

This area was between the old Hotel Pier which is now the site of the US41 bridges to the east and the site of the old Long Dock to the west. This is where many early settlers and later residents, especially fishermen lived. Vernon Peebles reported finding bottles along this shore, but that was before the modern seawall was built.

The magnetometer detected 30 anomalies (Figure 37) with very little correlation from the sonar. Most magnetic anomalies were not significant either in gamma deviation, duration or type. One set of targets (Figure 38), numbers M4, M7, M8, and M10, represents a large multi-component anomaly in the southwest corner of the survey block. This correlates to wreck symbols on historic charts (Figure 39)

The Town of Charlotte Harbor

On October 27 and 28, the survey crew set up and surveyed a large block off the town of Charlotte Harbor. The old schooner path that left Knight's dock and went up the Peace River runs through this block. The block consisted of 40 lanes each one mile in length. Logging 20 miles of survey per day this area took two day to finish. The block extended from the US41 bridges in the east to the modern fishing dock that is at the site of Knight's pier according to historic maps.

The magnetometer detected 73 magnetic anomalies (Figure 40) with little sonar correlation. This area similar to the previous day's efforts off Punta Gorda saw the sonar detecting numerous crab pots, both in use and derelict traps on the very flat bottom (Figure 41). While we did not observe shrimp boats in this location, we did see them just around Mangrove Point, offshore from Alligator Creek in western Punta Gorda. This area may have been heavily fished for crabs and shrimp. It is also at the mouth of the Peace River and is where sediments coming downstream have ended up. The crew from Panamerican, who had just come from a survey to refine and identify targets off Egmont Key in Tampa Bay, remarked on how clean the bottom of Charlotte Harbor was in comparison to Tampa Bay.

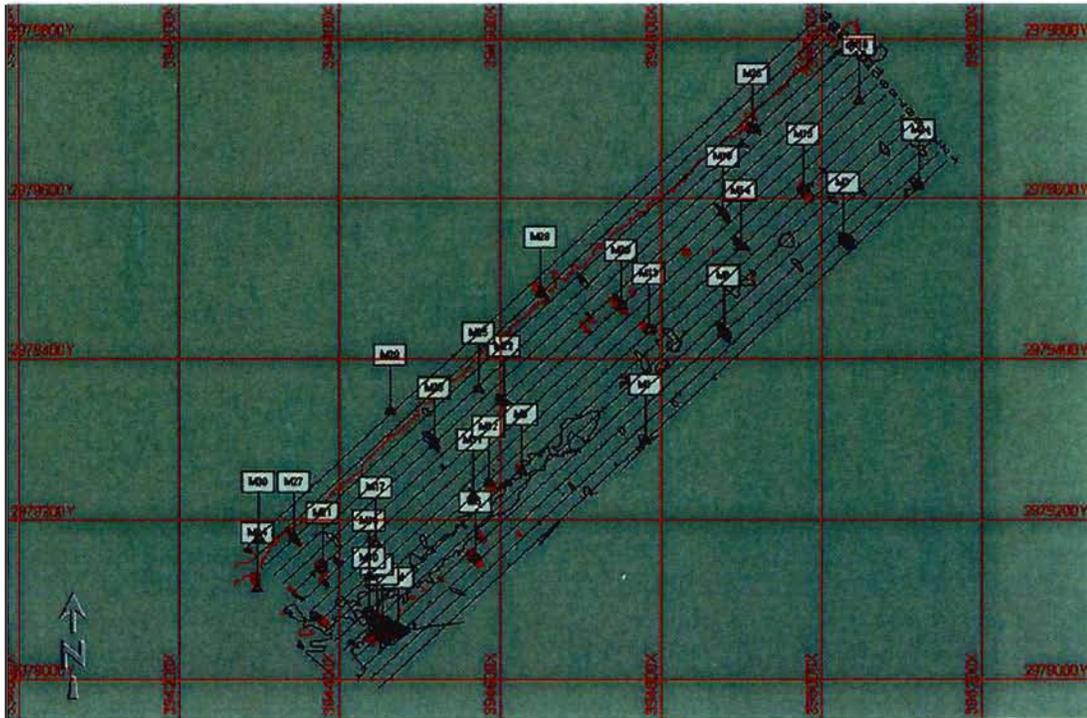


Figure 36. Magnetic contour map of the mouth of the Peace River offshore from the historic section of Punta Gorda. (contour intervals equal to ten gammas)



Figure 38. Magnetic contour map with a close-up view of a large multi-component anomaly that corresponds to a wreck symbol on several navigational charts. (contour intervals equal to ten gammas)

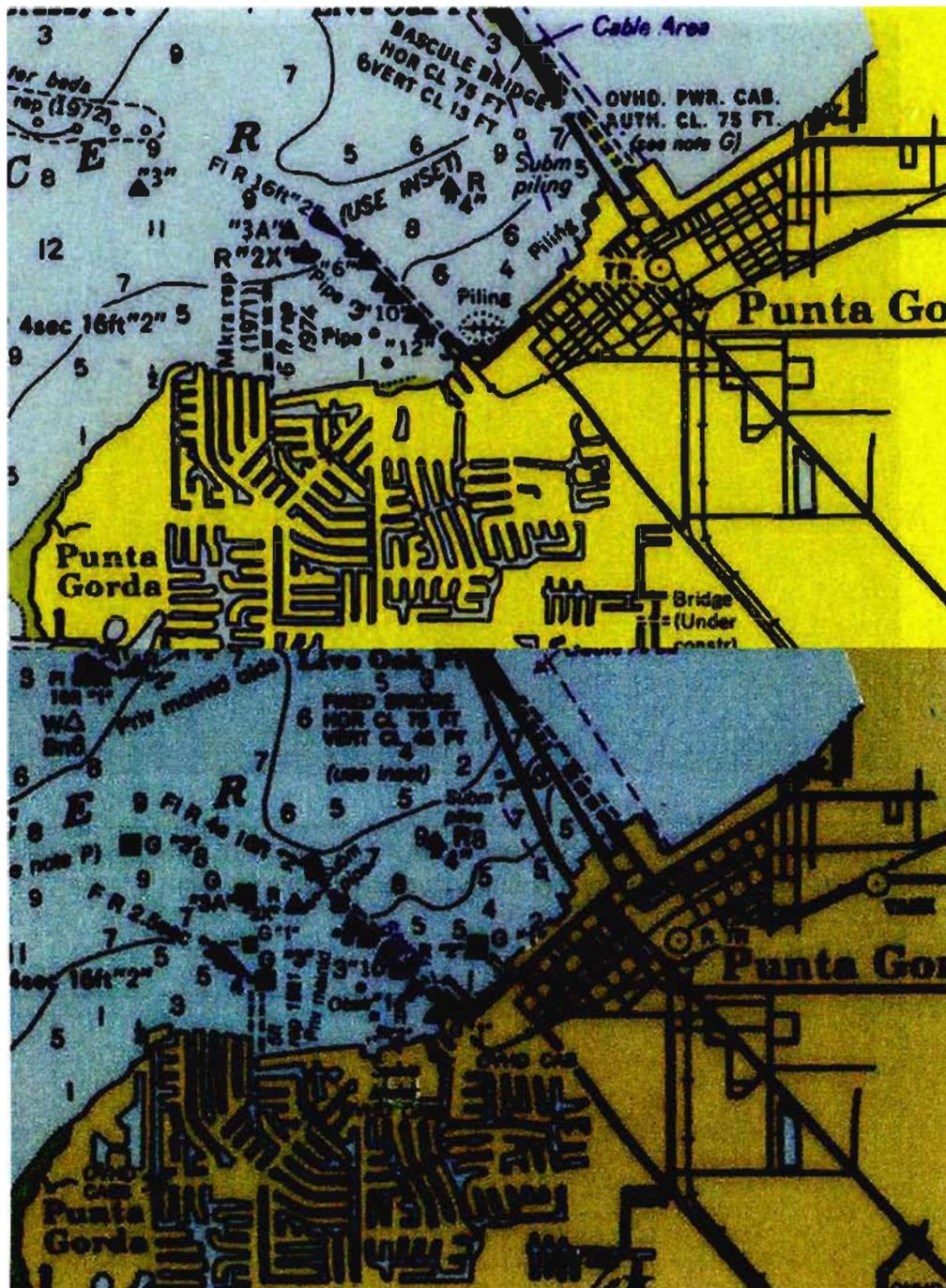


Figure 39. Nautical charts at Punta Gorda showing: a) wreck symbol on 1974 chart and b) submerged boiler in the vicinity of the old Long Dock on 1989 chart. Image cropped from charts available from NOAA on the world wide web at: <http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Chart numbers 11426-7-1974 and 11426-6-1989.

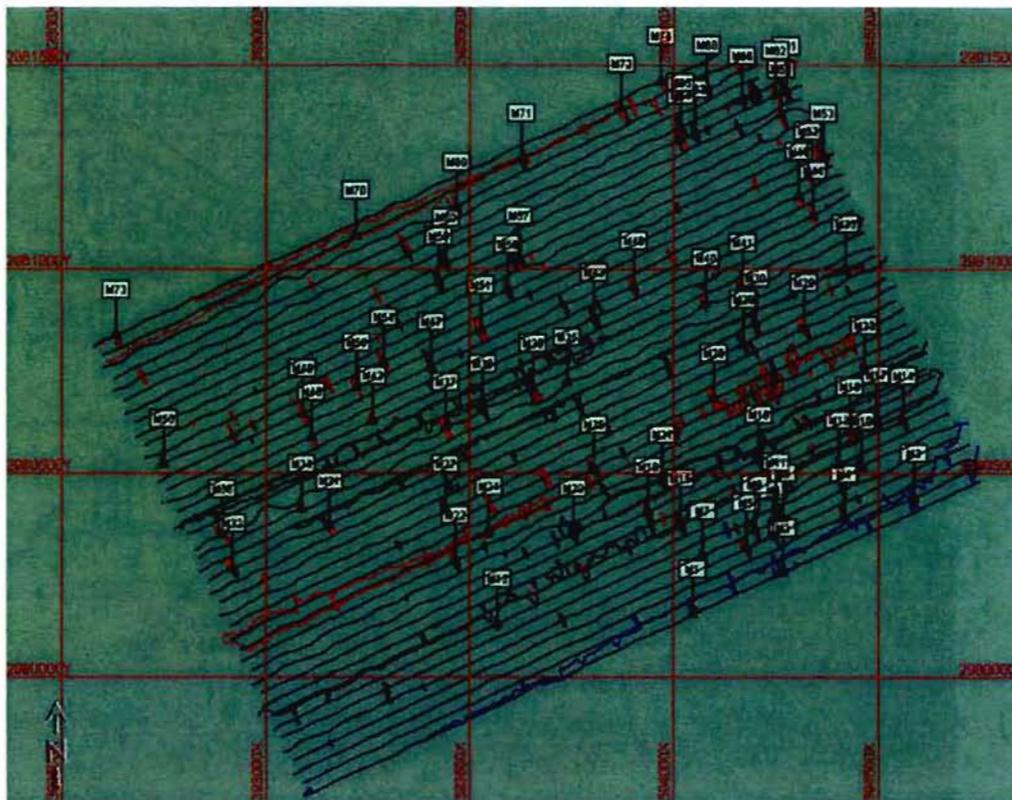
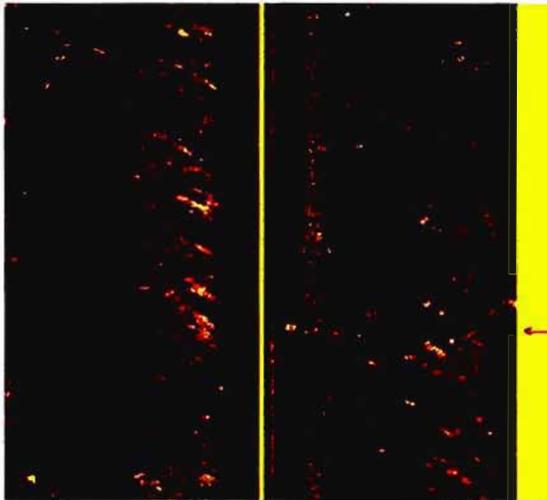


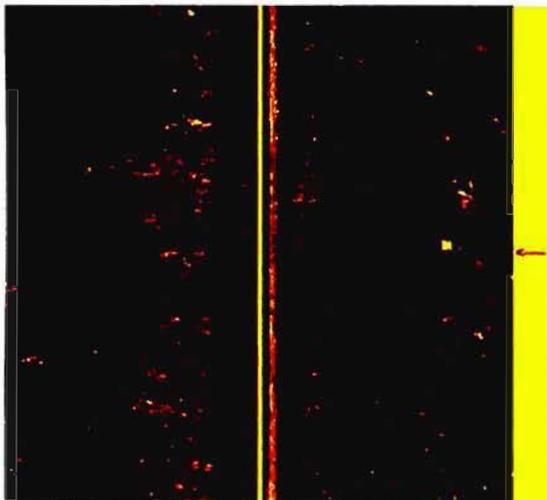
Figure 40. Magnetic contour map of the Peace River offshore from the town of Charlotte Harbor. (contour intervals equal to ten gammas)



Figure 41. Three views of crab pots in Charlotte Harbor. The photo at the top was taken at Demere Key of plastic crabpots with stainless steel fasteners (on the left) and wooden crabpots with mild steel nails (on the right).



The side-scan sonar image in the center shows an active crabpot, while the lower image is of a derelict crabpot. The crabpots are the small yellow squares. Note the long shadow cast in the middle image by the crabpots buoyline, which extends to the surface of the bay. The lower image is of a crabpots without a buoyline.



Due to modern docks and piers, such as the county fishing pier, the survey crew was restricted from surveying the most likely area of Knight's pier. This area may benefit from survey with a diver handheld magnetometer.

Myakka Cattle Dock Point

On October 29, the survey crew visited Cattle Dock Point on the western bank of the Myakka River just above Shoal Point and opposite Hog Island. There are wooden pilings protruding from the water at this location. The point is distinct and artifacts have been found on land (8CH0051) here and on the opposite shore on Hog Island (8CH0060 and 8CH0090).

The crew surveyed seven track lines parallel to shore and running well above and below the point of land. The magnetometer detected 19 anomalies (Figure 42), with the strongest sonar correlation related to the piling visible in the water. Targets (M1, M2, M4, M8, M9, and M10) cluster around the area where pilings are still extant.

Locust Point

The survey crew set up a survey block in the area off Locust Point, on the morning of October 30, as this area is a shoal at the northern end of Charlotte Harbor and at the confluence of the Peace and Myakka rivers, where a vessel may have been lost to strong southerly winds. It is thought by some local historians to possibly be a landing site used by Hernando de Soto 1539. It is an area that has not been significantly developed on land and therefore the underwater area is less likely to have been disturbed.

The magnetometer detected 10 magnetic anomalies (Figure 43) with good sonar correlation (Figure 44). Two targets (M8 and M10) are significant multi-component hits. It is possible that targets M7 and M8 also comprise a single multi-component target. This day was very windy and it proved difficult to keep the boat on track, so the courses around these targets were not what we would have desired.

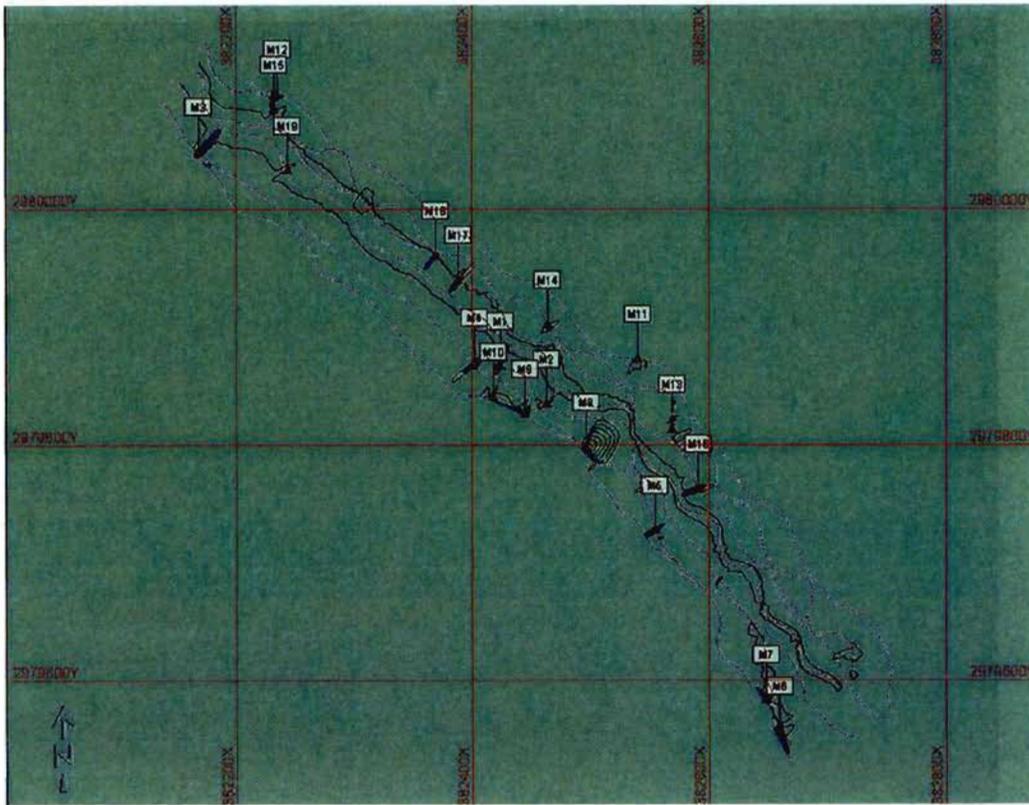


Figure 42. Magnetic contour map of Cattle Dock Point on the Myakka River. Note the area of heaviest readings corresponds to exposed pilings. (contour intervals equal to ten gammas)

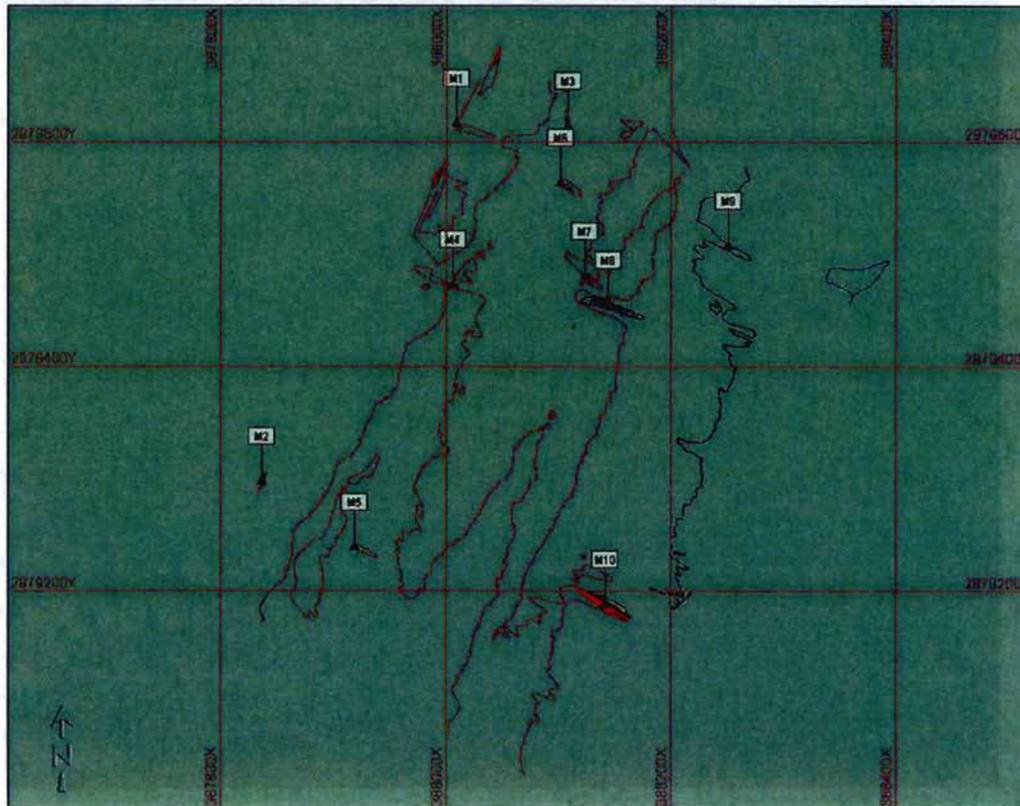


Figure 43. Magnetic contour map of Locust Point, where some writers believe Hernando de Soto disembarked for his trek across Florida and the southeast United States in 1539. (contour intervals equal to ten gammas)

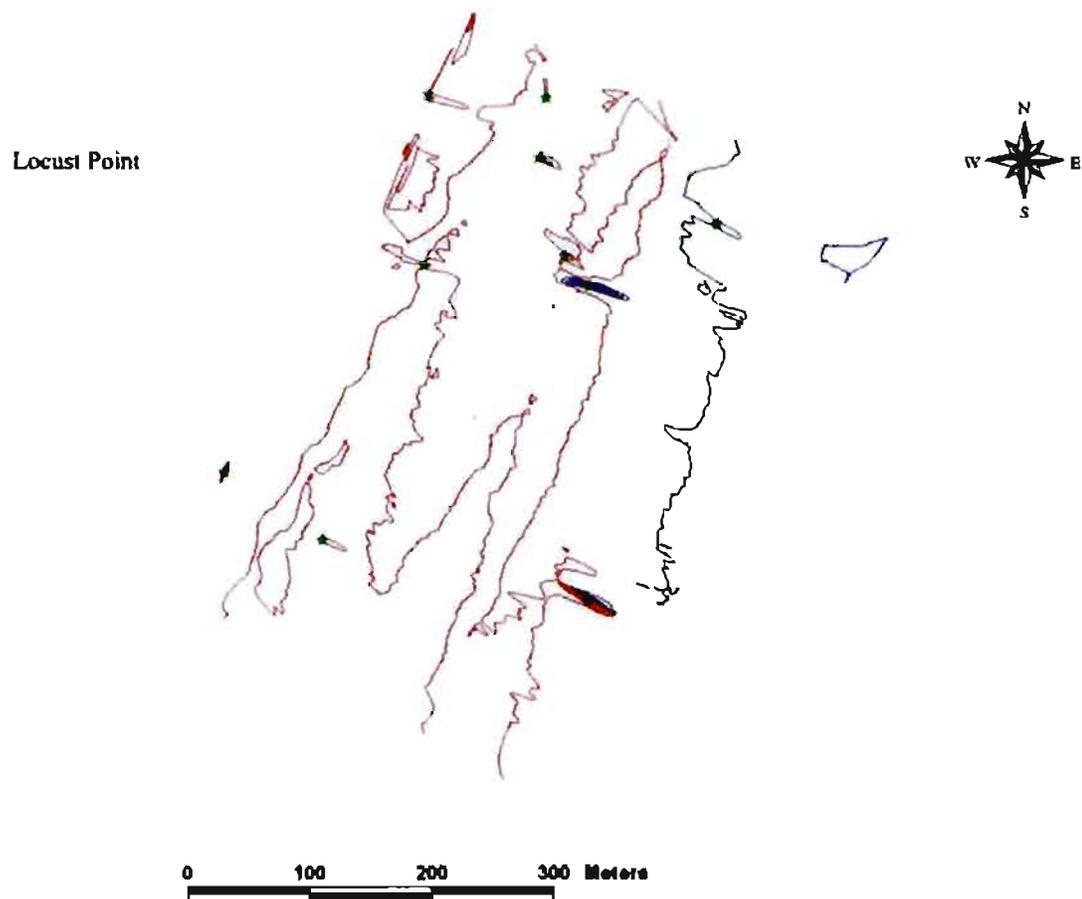


Figure 44. Magnetometer and sonar targets in the shoal off Locust Point between the mouths of the Myakka and Peace rivers. Green stars are acoustic targets, while the red and blue contours are magnetometer anomalies with contour intervals equal to 10 gammas.

Mangrove Point

Later in the day on October 30, the survey crew motored down Charlotte Harbor to an area between Mangrove Point on Punta Gorda and the Cape Haze Peninsula where a wreck is marked on modern charts. We set up a block consisting of 15 survey lanes running due north-south. The magnetometer detected only one magnetic anomaly (Figure 45) with no sonar correlation. This target was small in size and duration. We noted shrimp boats at work in this area and extending down off the southern tip of the Cape Haze Peninsula. The bay floor here is characterized by a flat silt that yielded shrimp trawls scars to the sonar.

East of Miller's Channel and the Intracoastal Waterway

On October 31, the survey crew launched from the fisherman's coop on Pine Island just onshore from Demere Key and motored up the Intracoastal Waterway (ICW) to Pineland to pick up a news reporter (Kevin Lollar) from the Fort Myers News-Press. The crew first headed out to the main entrance to the harbor in hopes that we could survey the shoal named the breakers on the north side of the entrance. The winds began to increase and so we opted to stay inside and wait for a calmer day to go outside. We took advantage of our position to resurvey the area of Quarantine Rocks with deeper water than we had encountered on October 20. Our sonar technician (Faught) felt he could get a better image of the shoreline. After completing this resurvey, the crew motored north across the harbor to an area east of Miller's Channel that runs out from the town of Boca Grande. We had coordinates from a local informant for a ballast pile. We set up a survey block that ran between channel markers # 1 and #2. In hindsight this is an odd location as the dredging of the ICW in 1960 would likely have disturbed such a site either by dredging up the stone or by depositing spoil sand over them. The survey block yielded not targets. Suspecting that our coordinates were off, we called our informant, Bill Caldwell, who came out in his boat to show us the location. Caldwell re-acquired the

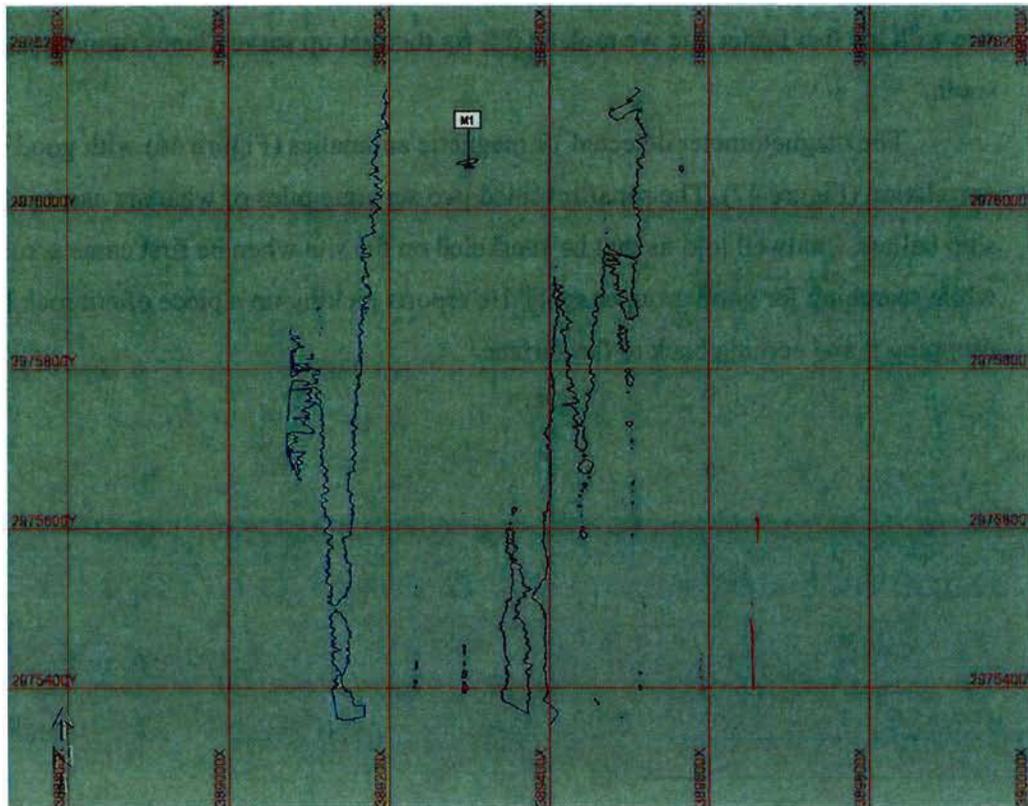


Figure 45. Magnetic contour map of the central portion of Charlotte Harbor just south of the mouth of the Peace River and between Mangrove Point in Punta Gorda and the Cape Haze Peninsula in the vicinity where a 20th-century wreck is marked on several navigation charts. (contour intervals equal to ten gammas)

site with his fish finder and we took a GPS fix then set up survey lanes running north-south.

The magnetometer detected 17 magnetic anomalies (Figure 46) with good sonar correlation (Figure 47). The sonar revealed two separate piles of what are assumed to be ship ballast. Caldwell told us that he snorkeled on the site when he first came across it while searching for good grouper spots. He reports picking up a piece of cut rock ballast, dropping it and coming back to the surface.

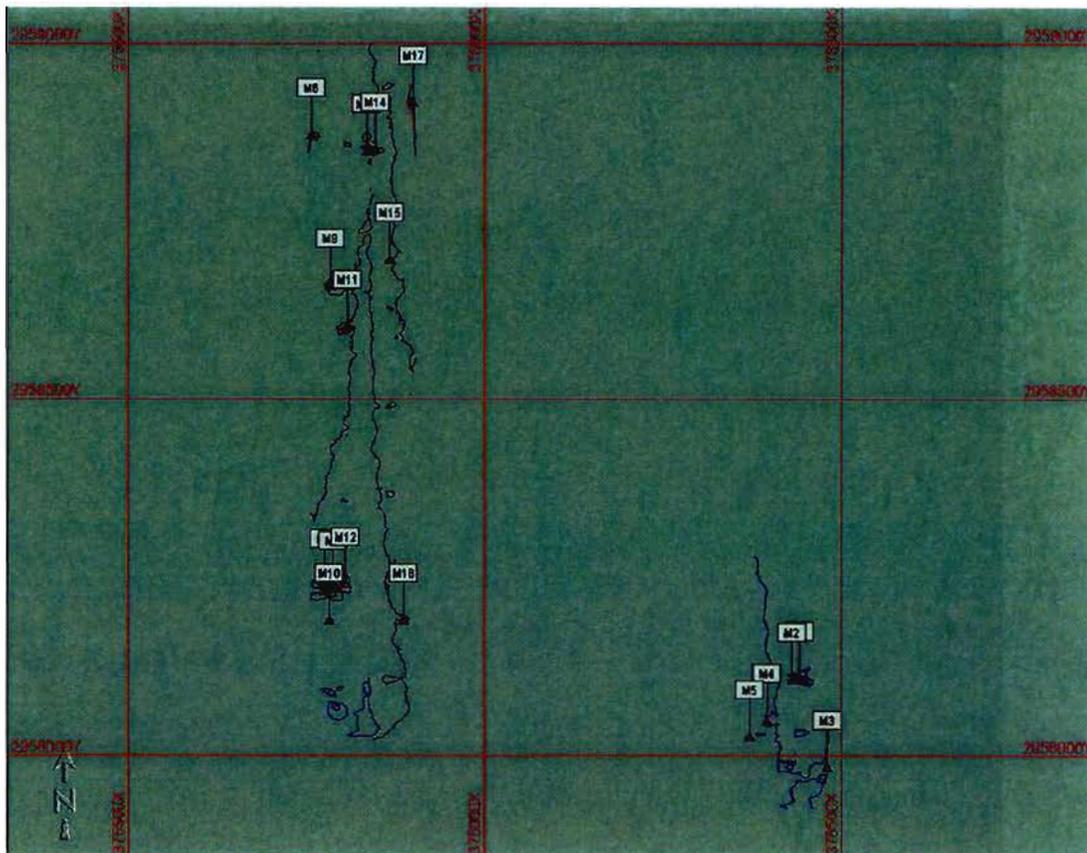


Figure 46. Magnetometer contour map of the ballast mounds located east of Miller's Channel on Boca Grande and east of the Intracoastal Waterway. These sites were shown to the survey crew by Bill Caldwell. (contour intervals equal to ten gammas)

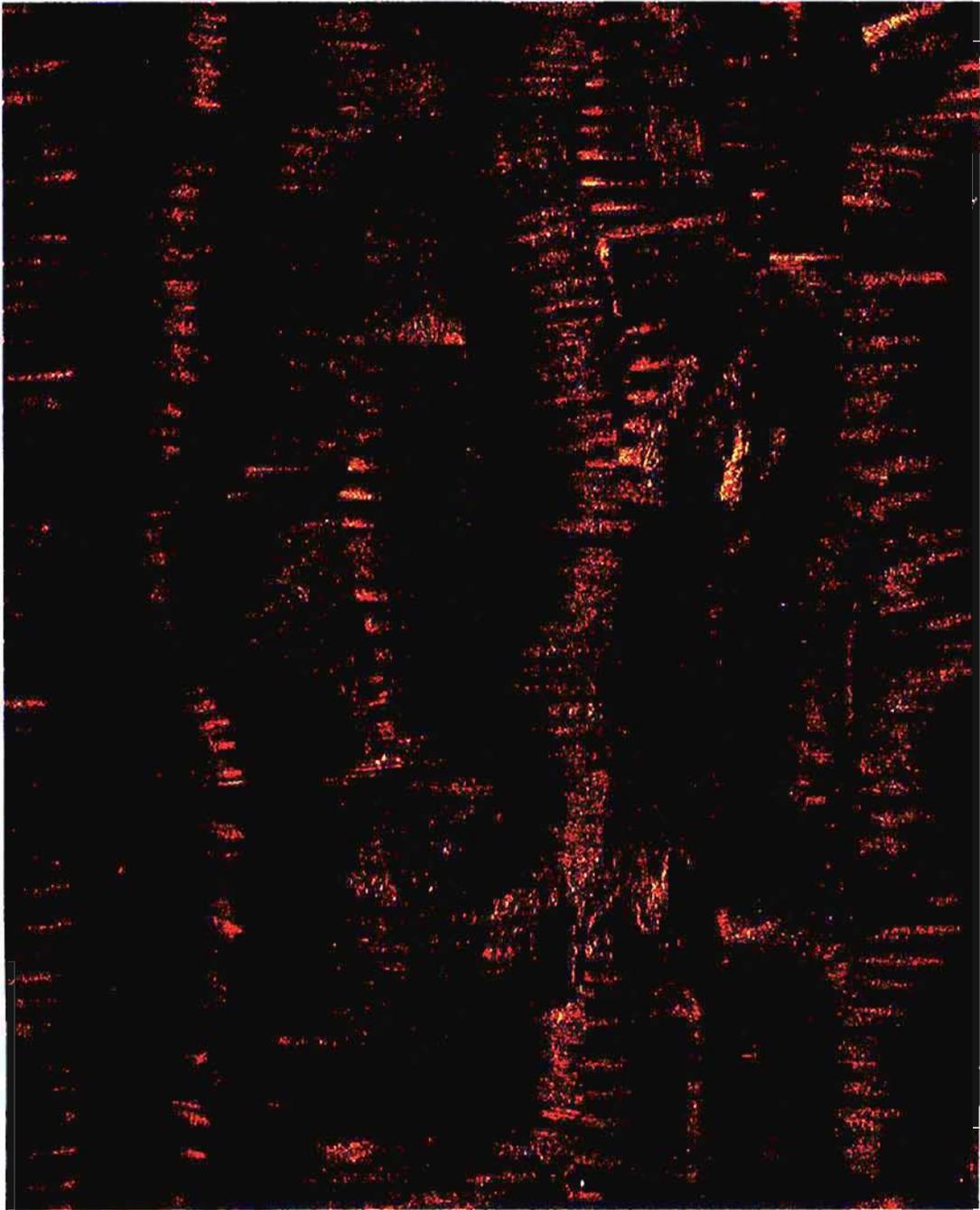


Figure 47. Sonar mosaic of two ballast piles located east of Miller's Channel and the Intracoastal Waterway and south of Bull Bay.

One set of anomalies stretches over a distance of 1000 meters, but the corresponding sonar record indicates a pile that is 25 meters (75 feet) in length. A second smaller pile is located to the east and is approximately a third the size of the larger feature. Two multi-component anomalies are noted on the larger feature. One anomaly consists of targets M7, M9, and M10, while the other is a single target (M17). The smaller feature presented only monopole returns of relatively little size or duration. These sites are difficult to interpret without ground truthing. They may represent the remains of wrecks with very little in the way of iron fasteners and fixtures. Alternatively, they may represent ballast dumps from vessels that came into Charlotte Harbor without a cargo and therefore carried extra ballast stone to enable the boat to sit properly in the water. Ballast may also have been dumped in this location from ships in quarantine waiting for permission to proceed to Punta Gorda.

Boca Grande Shoal

On November 1, the survey crew set up a survey block on the breakers shoal north of the main entrance into Charlotte Harbor. With a slight drizzle calming the seas it was a good day to work outside the bay. We set up a survey block based upon the coordinates contained in the Florida Master Site File for six reported wrecks. From the site descriptions we felt that two of these sites had been reported by separate parties and therefore there were only four actual wreck sites. The survey lanes ran due east-west.

The magnetometer detected six magnetic anomalies (Figure 48). At first it appears that target M5 and site 8LL1978 are the only ones that coincide. We think that the coordinates reported by previous explorers and researchers may be in planes other than NAD27. If you shift the previously reported sites farther to the east then target M1 aligns with site 8LL2033, targets M3 and M4 align with 8LL1978 and target M5 aligns with site 8LL1879. This moves targets M2 and M6 closer to site 8LL1980 (this site does not appear in the illustration). No targets coincide with sites 8LL1602 and 8LL1977. On his

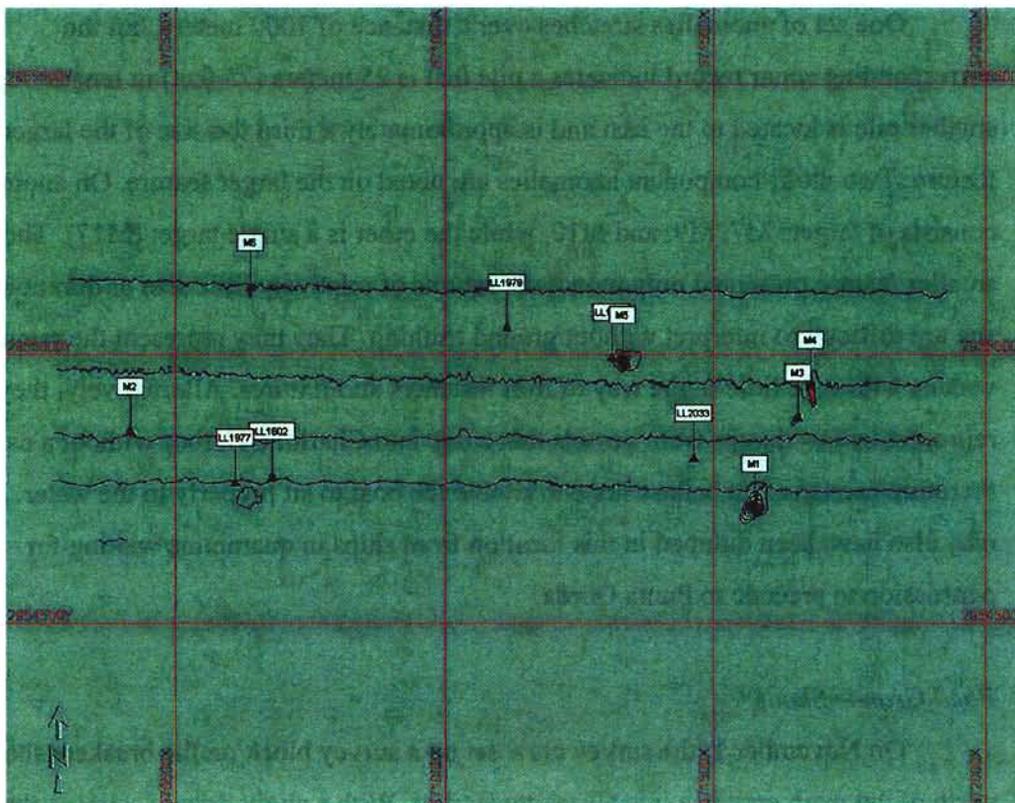


Figure 48. Magnetic contour map for the shoal north of the channel entering Charlotte Harbor at Boca Grande. Note the six previously-reported wreck sites and the six magnetic anomalies. (contour intervals equal to ten gammas)

Florida Master Site File Form archaeologist Wes Hall reports on the site integrity with a major overall disturbance, “site completely destroyed by treasure hunters.” Most likely these are the same treasure hunters that originally reported site 8LL1977.

Punta Rassa

On November 2, the survey crew launched from the fisherman’s coop next to Demere Key and motored down the ICW and around Pine Island to the Caloosahatchee River. On the way we spotted a sailing vessel in distress as winds had driven it up onto a shoal. We set up a survey block off Punta Rassa from just north of the causeway bridge to the navigation channel entering Punta Rassa Cove. The survey lanes were just over 1000 meters in length. Historic maps show a deep channel in this area (Figures 49-51).

The magnetometer detected 18 magnetic anomalies (Figure 52) with relatively little sonar correlation. Five targets, including M15 and M16 as well as three others, coincide with modern dock structures associated with condominium developments on Punta Rassa. There is a break in target until getting close to Punta Rassa Cove when 13 more magnetic targets were encountered.

Liverpool

On November 3, the survey crew traveled up from Demere Key along Burnt Store Road to Punta Gorda and across the Peace River to the town of Charlotte Harbor where they launched the 18-foot jon boat, *Myakka*, at the public ramp at Harbor Heights on the entrance to Whidden Bay. A reporter (Sara Lubbes) from the *Sarasota Herald Tribune* accompanied us for the day. The crew motored up the Peace River to the historic site of Liverpool. It is located at approximately the end of the old schooner channel up the Peace River. Liverpool was been occupied in association with phosphate mining from the 1880’s until the 1920’s. At this location there is an island in the river and across the channel from the island are the remains of a phosphate processing and loading facility. From the shore you can see a series of concrete and brick piers (Figure 53) that once

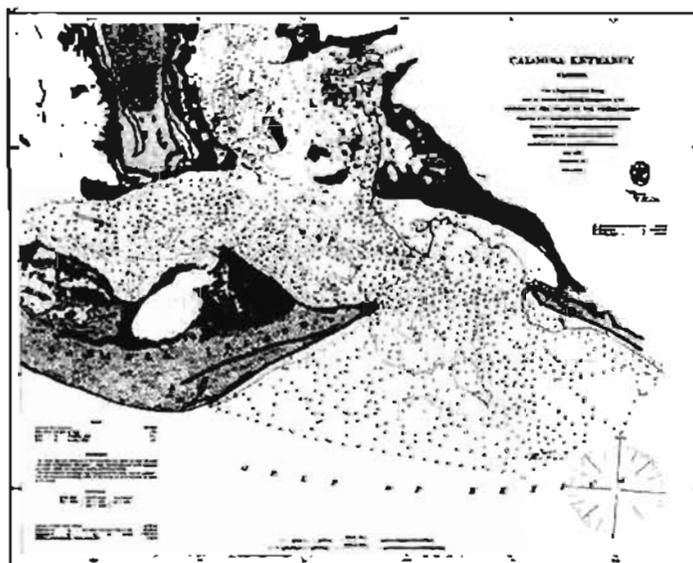


Figure 49. 1867 chart of San Carlos Bay with a close-up of Fisherman's Key and Punta Rassa. Image created from chart available from NOAA on the world wide web at: <http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Chart number 475 00-1867.

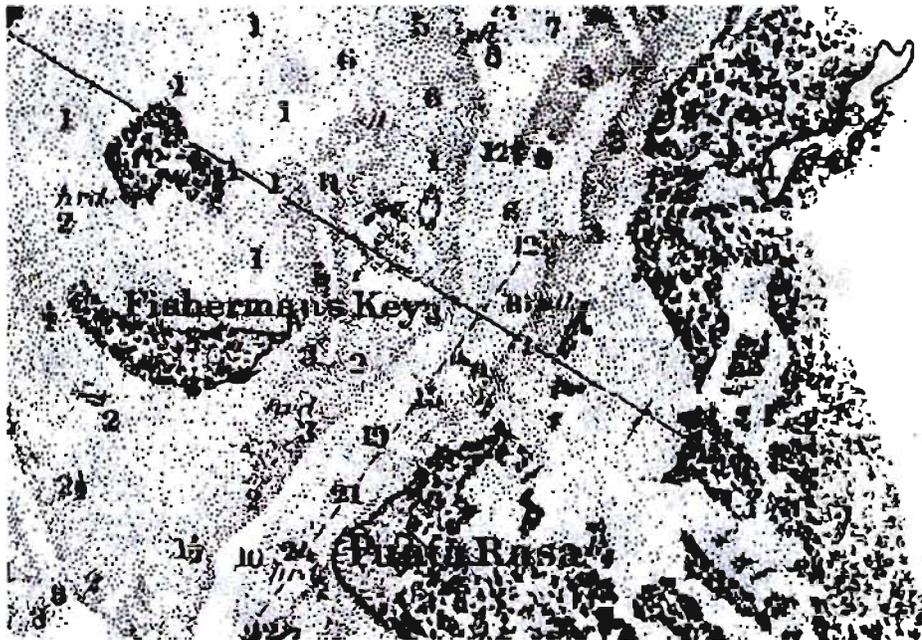


Figure 50. 1883 and 1898 charts of San Carlos Bay showing close-ups of Fisherman's Key and Punta Rassa. Note the naturally deep channel off Punta Rassa, which made it a destination for sailing vessels. Image created from chart available from NOAA on the world wide web at: <http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Chart numbers CP1815C and CP2510C.

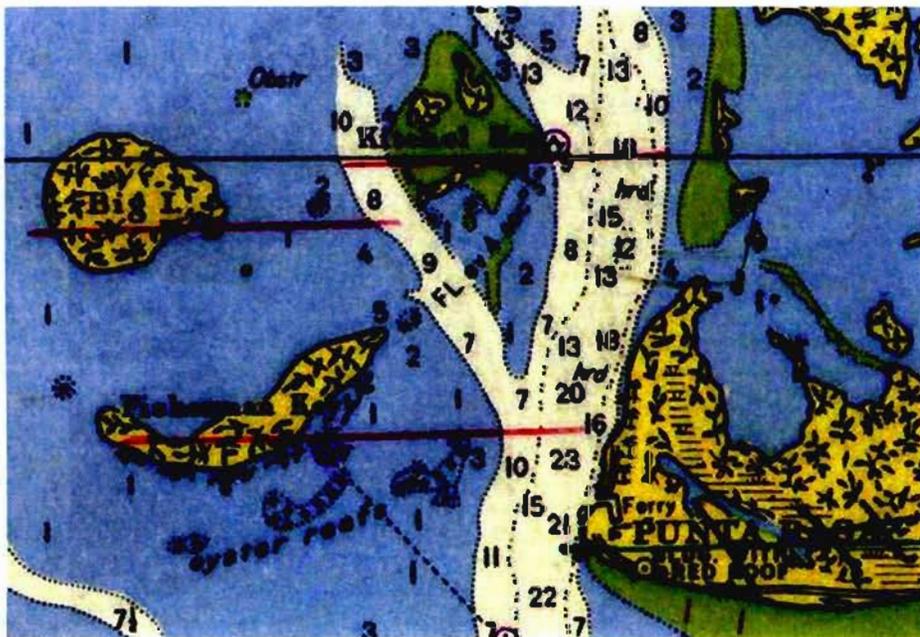
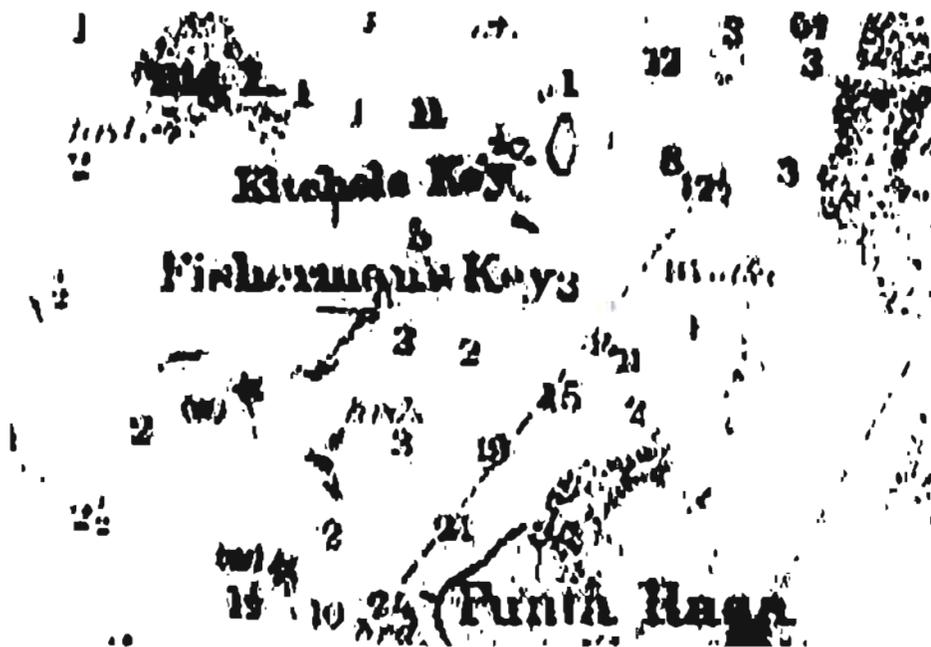


Figure 51. 1916 and 1959 charts of San Carlos Bay showing close-ups of Fisherman's Key and Punta Rasa. On the 1916 chart to the right of Fisherman's Key is an difficult to read word which could be either "Wharfs" or "Wreck.". Image created from chart available from NOAA on the world wide web at: <http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Chart numbers 175 9-1916 and 473 2-1959.

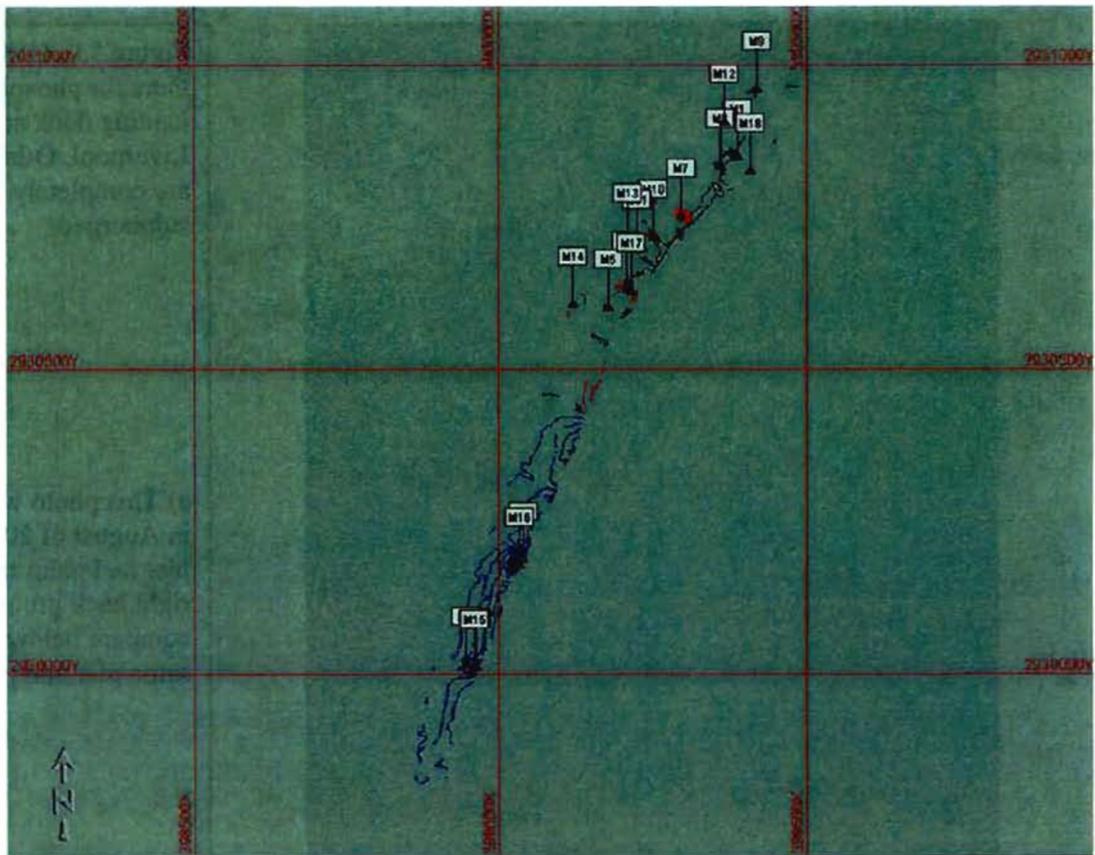


Figure 52. Magnetic contour map of the western shoreline of Punta Rassa. Note that the targets at the south end of the map correspond to modern condominium docks and that the targets to the north correspond to an undeveloped shore of mangroves. (contour intervals equal to ten gammas)



Figure 53. Collapsing piers for phosphate loading dock at Liverpool. Other piers are completely submerged.

a) This photo was taken in August of 2004. Note pier and palm tree in the right back ground and compare below to the same pier and palm tree.

b) This photo taken November of 2005.

supported buildings and dock structures. There are also a few wood pilings sticking up above the water. This site is perhaps the oldest industrial site in south Florida. It is not reported in the Florida Master Site File.

Mote scientist, Ernie Estevez took the Charlotte Harbor Shipwreck Survey project director (COZ) to visit the site in August of 2004. We noted flagging tape and stakes in the ground. Subsequent research revealed that a previous attempt was made to preserve the property as a county park. The site is located in De Soto County near the border with Charlotte County. The preservation effort failed and today the property is privately owned. The area down the channel toward the main branch of the Peace River is being developed. During our survey we noted a concrete surveyors monument at the water's edge between the phosphate site and a boat ramp back toward the main channel.

The survey crew set up a block that followed the river channel that flows by the facility and away from the main navigation channel. The survey block began at the northern entrance to the side channel and ran to the site and then turned south and west running back about halfway to the south entrance from the main channel.

The magnetometer detected 54 magnetic anomalies (Figure 54), with excellent sonar correlation. Remains of a barge (Figure 55) on shore consist of athwartship bottom planking on stringers. The central stringer has a series of drift pins protruding from it. This feature was not visible during the August 2004 visitation. We also noted an almost identical although more complete sonar target, which almost certainly represents another barge (Figures 56-57) submerged at the island across from the facility. The submerged barge is 16 meters (50 feet) long similar to those seen in historic photographs (Figure 58). Almost all magnetometer targets are multi-component anomalies of great size and duration. One target (M19) is attributable to a Manatee caution sign. While there are a significant number of targets in the bend of the river where the shore features are apparent, there are also targets scattered along the channel in either direction. All the targets are located right along the shoreline. There is a gap in targets where a beach is present.

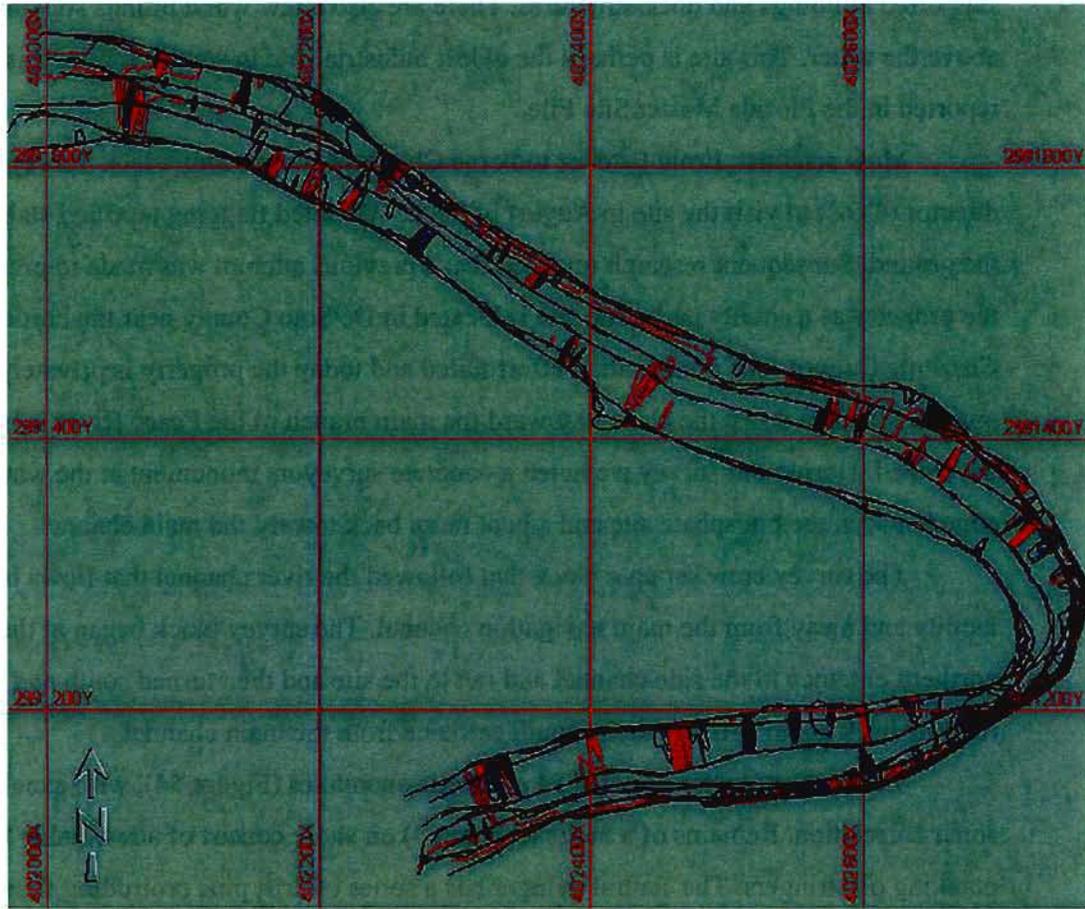


Figure 54. Magnetometer record of Peace River in the vicinity of Liverpool Island, and the Liverpool phosphate loading site, which was located in the bend of the river at the right of the illustration.



Figure 55. The remains of a wooden barge eroding out the bank on the Liverpool channel off the Peace River.

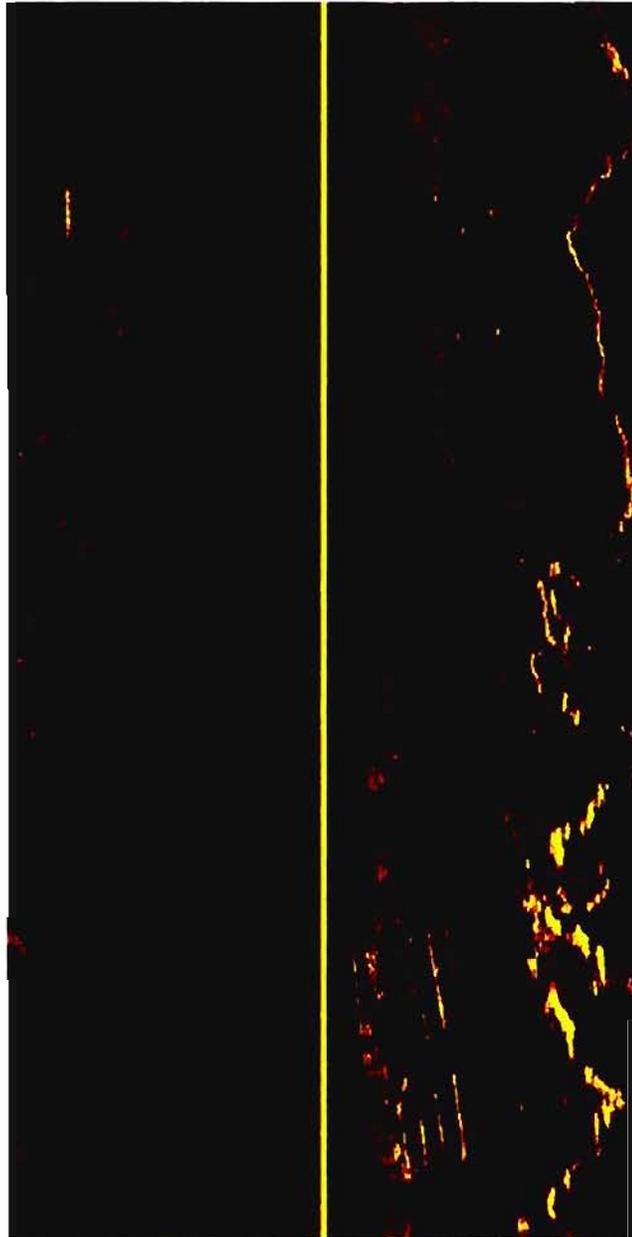


Figure 56. Side-scan sonar track showing probable sunken barge along the shoreline of Liverpool Island, opposite from phosphate loading facility. Barge is shown at the lower right and is approximately 16 meters (50 feet) in length.

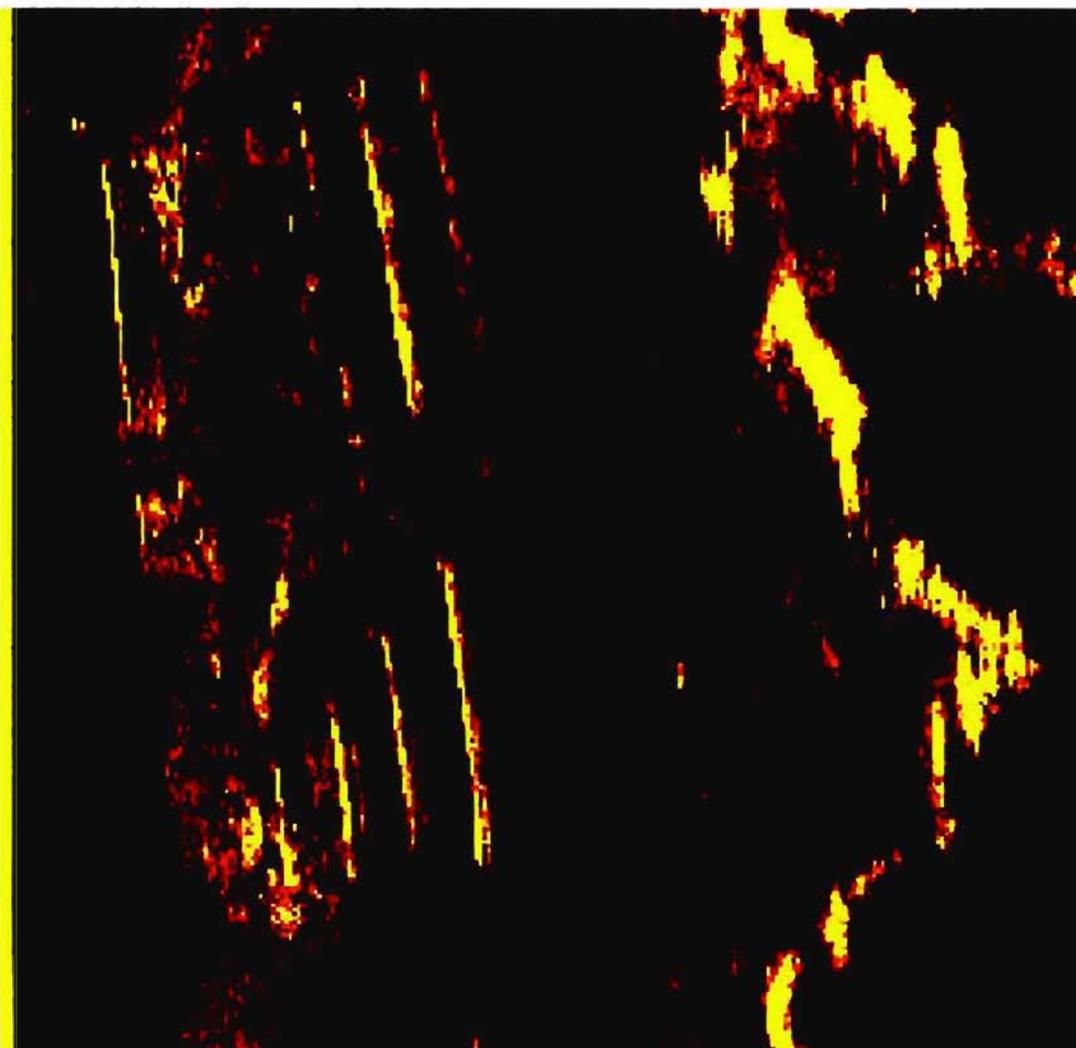


Figure 57. Close-up of side-scan sonar image showing probable sunken barge along the shoreline (at right) of Liverpool Island, opposite from phosphate loading facility. Barge is approximately 16 meters (50 feet) in length.

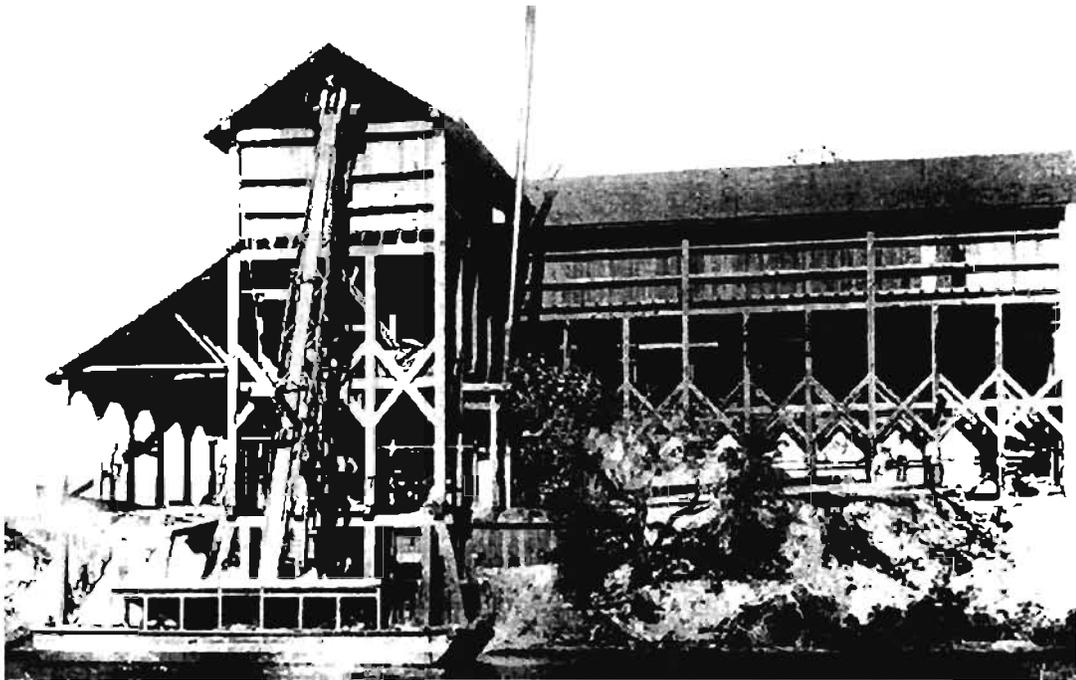


Figure 58. Photo of a phosphate loading facility somewhere in Florida. Note the barge in the foreground to the left. From University of South Florida Photo Collection #0869.

In the shallow water the survey crew could see remains in the water. The shoreline is actively eroding. We noted that piers seen in August 2004 had tipped farther toward the water (Figure 53). Photographs given to the project of shore features indicate extensive remains including the concrete and brick foundations for some of the facilities major buildings. The tall piers in Figure 59 compare well with those seen in an historic photograph (Figure 60) shown to us by Vernon Peeples, and is from a Phosphate company manuscript in his collection that describes and illustrates the Liverpool site when it was in operation. Other facilities pictured in the manuscript include the engine and boiler house (Figure 61) and the lightering warehouse (Figure 62) on the river bank. These could most likely be located and documented on the property from the extensive remains.

We made a cursory inspection of the shore remains from our small boat. There are approximately 53 rows of the brick piers along the shoreline with a brick wall section at either end. They piers extend back 8 courses deep. The spacing between piers running along the shoreline is from 84 centimeters to 93 centimeters, and the spacing between piers running back from the shoreline is from 105 centimeters to 114 centimeters. Each pier is constructed of a concrete footing with a brick pyramid atop. One pier was measured. The concrete pad is 1.235 meters by 1.215 meters and is 18 centimeters thick. There are eight courses of brick diminishing in area by 2.54 centimeters (one inch) per course per side as they go up. The bricks of the bottom course are laid up on their side with the subsequent courses all laid flat. The average brick is 5.8 centimeters thick by 20 to 21 centimeters long (some as large as 21.5 centimeters), and 9.4 to 9.8 centimeters wide. The bottom of the brick pyramid measures 83 centimeters by 97 centimeters, while the top is 48 centimeters by 58 centimeters. There is 0.3 centimeters to 2.3 centimeters of mortar between bricks.

Other terrestrial features include a berm approximately 0 meters (120 feet) from the shoreline. The berm may have been the terminus of the rail spur that was built to



Figure 59. Tall pier feature on land at Liverpool phosphate loading dock facility. This is one of numerous land features including foundations, a railroad spur berm, two pools and a possible well. This photo was taken in August 2004.

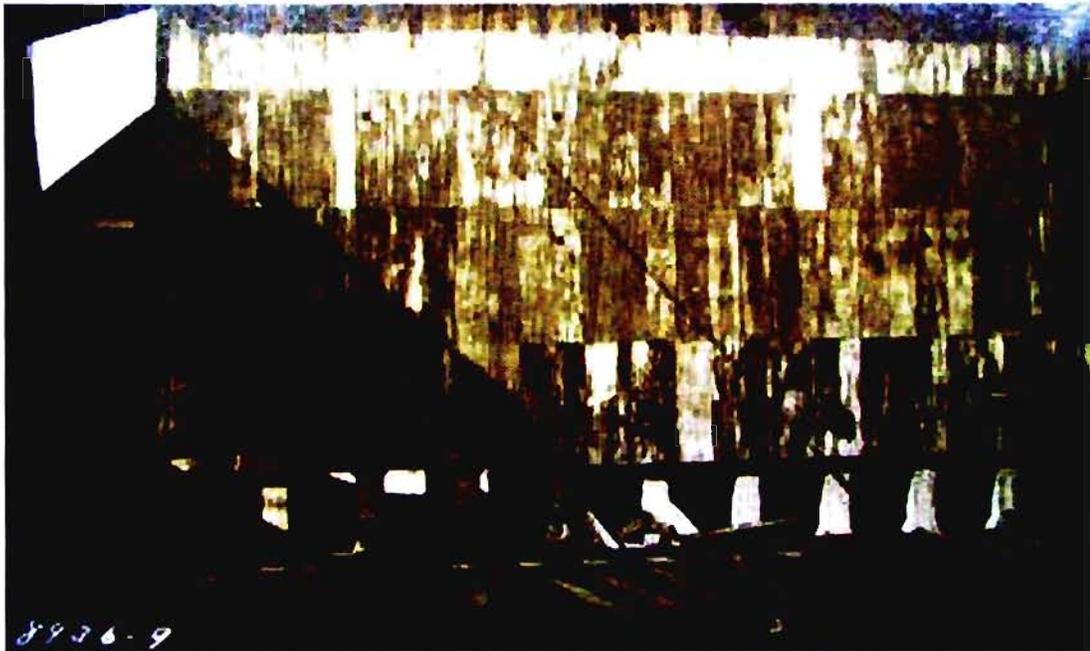


Figure 60. At the top is a photograph of Liverpool phosphate dry bin build on tall brick piers. At the bottom is a close-up of a worker resting against one of the piers. From the collection of Vernon Peeples.

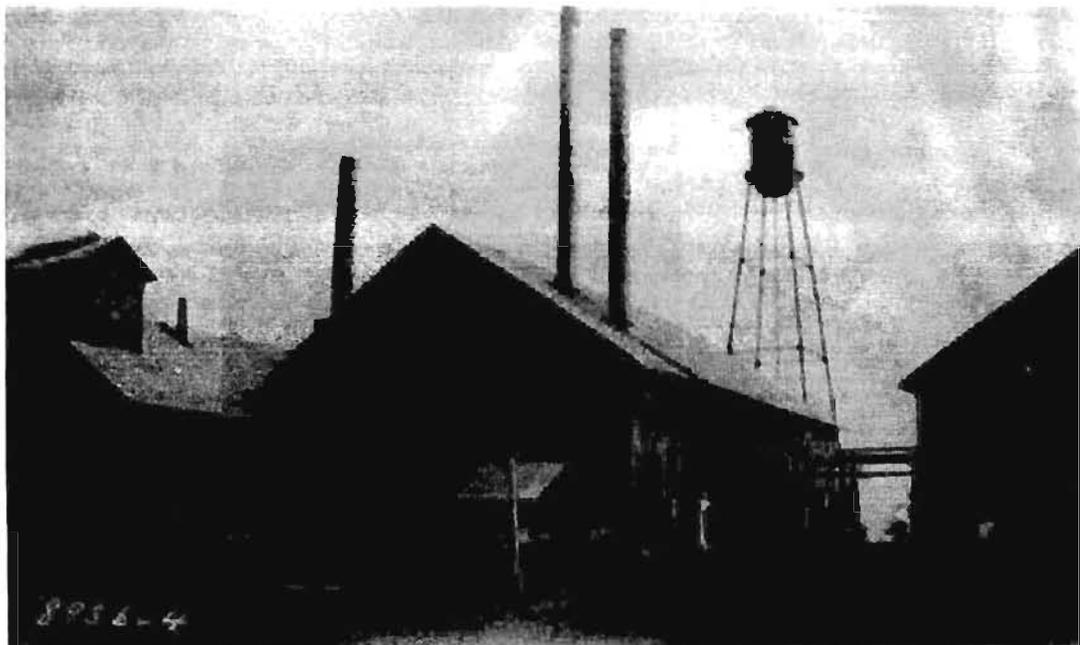


Figure 61. Above is another view of the Liverpool dry bin and below is a view of the engine and boiler house. From the collection of Vernon Peeples.



Figure 62. Liverpool lighterage warehouse on the Liverpool channel off the Peace River, with a close-up of a spare paddlewheel on shore that may have been for the steamboat *Phoenix*. From the collection of Vernon Peebles.

Liverpool. Some elements interpreted as the foundation of the drying bin include six 2.5-meter (8-foot) tall brick piers behind the shoreline features. Farther behind these tall piers is a rectangular brick enclosure that is approximately 10 meters by 15 meters (30 feet by 45 feet). Just a meter or so north of this enclosure is a small circular brick feature, while 10 meters or more to the south is another circular brick feature of much greater size (6 meters (18 feet) in diameter). There appear to be more structures to the south, but they could not be identified from a distance. Finally there are some small brick foundations with iron bolts protruding from them, that are interpreted as anchor pads for machinery.

Fisherman Key and Big Island

On November 4, the survey crew launched from a private boat ramp in St. James City at the south end of Pine Island and visited Fisherman Key and Big Island. The former island has a reported shipwreck site 8LL1886. When we input the coordinates from the Florida Master Site File (FMSF) for this site the location was somewhere on Big Island to the north. We relied on the map provided by JSL Research accompanying their reporting of this site to the FMSF. We set up survey lanes running parallel to the north shore of Fisherman Key from the eastern tip to a point some 200 meters to the west. The magnetometer detected one magnetic target (Figure 63), while the sonar detected scattered forms on the bottom that may have been rock or debris.

The survey crew next proceeded to Big Island to search for a site associated with a wreck symbol appearing on modern charts. The magnetometer detected 18 magnetic anomalies (Figure 64). Two of these were multi-component targets, with one of them at the center of a cluster of targets that could be the remains of a wreck.

The Old Long Dock

On November 5, the survey crew again traveled from Demere Key via Burnt Store Road to the public boat ramp at the base of US41 and launched then motored to an area just to the west of the historic town of Punta Gorda offshore from a development

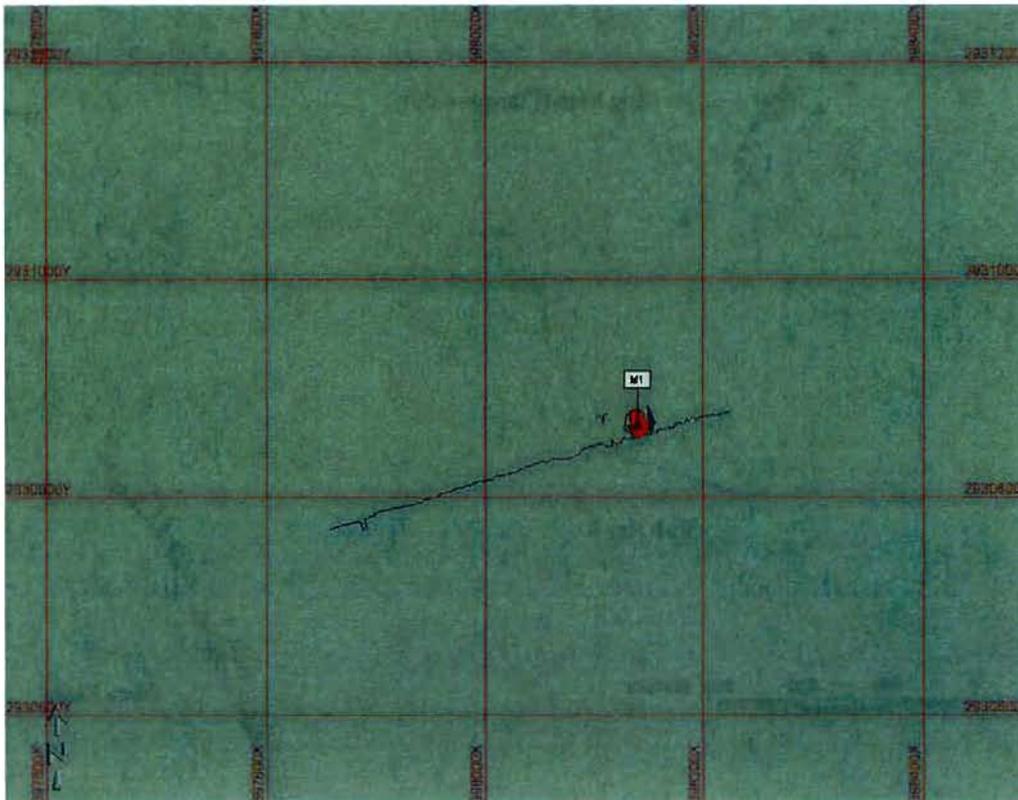


Figure 63. Magnetic contour map of Fisherman Key, where a wreck was reported by JSL Research. Site 8LL1886. (contour intervals equal to ten gammas)

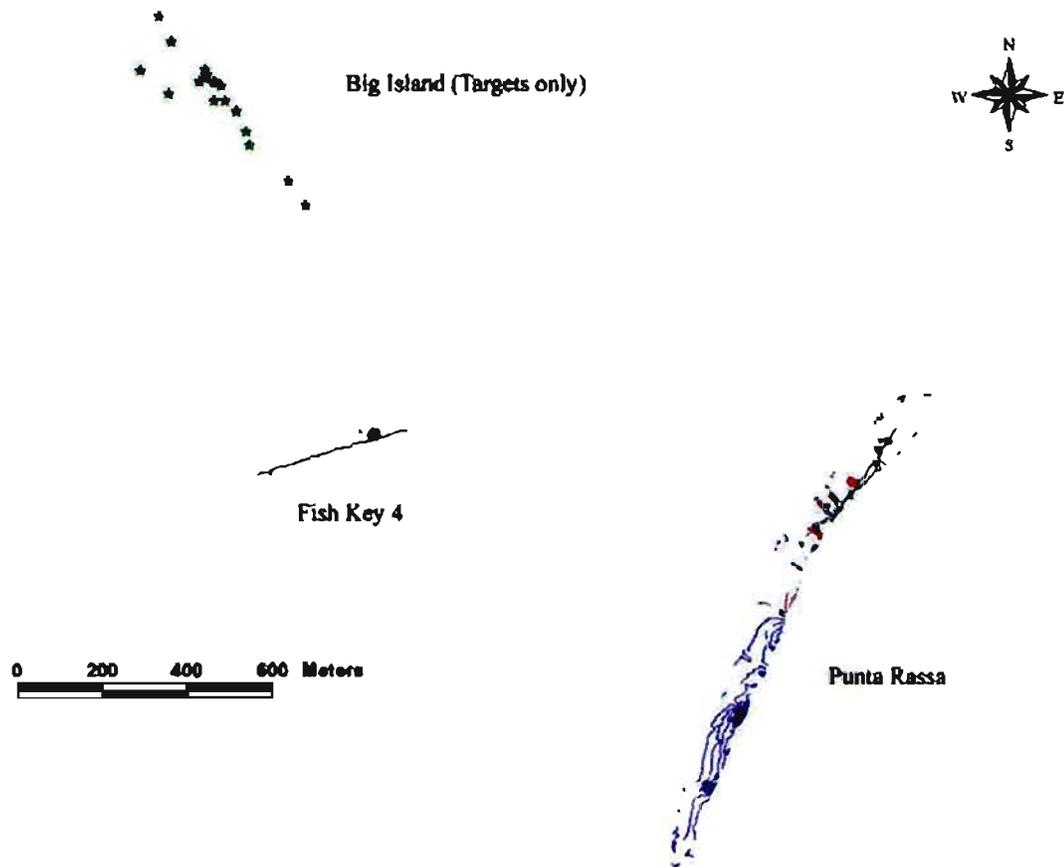


Figure 64. The entrance to San Carlos Bay at Punta Rassa, showing acoustic and magnetic targets at Punta Rassa, Fisherman Key and Big Island. Green stars are acoustic targets, while the red and blue contours are magnetometer anomalies with contour intervals equal to 10 gammas.

called Punta Gorda Isles. This location was chosen after discussions with Vernon Peeples led us to believe that very little had been disturbed in this area since the dock burned and was replaced by docks farther to the east in 1904. Several historic charts show the derelict pier (Figures 65-71). Peeples also related the story of the vandalism of the steam tug *Mary Blue*, that reported burned to the waterline and sank next to the old Long Dock. After examining historic navigation charts the crew decided the old dock lay between modern channel markers #2 and #2X. We set up lanes running due east-west. This was a Saturday and boat traffic was extremely heavy not only in the nearby navigation channels but also between them where boats cut through our survey area. Operating from the 18-foot jon boat, *Myakka*, required vigilance as passing boats threw up considerable wakes.

The magnetometer detected 183 magnetic anomalies with excellent correlation from the sonar. Despite the high number of returns the location of the old Long Dock jumps out from the magnetometer contour map (Figures 72-73). Fourteen magnetic targets (Figures 74-75) are interpreted as the major remains of the old Long Dock. The other targets may represent material from vessels moored to the dock or from loading cargoes or from the destruction of the dock.

Cleveland

On the afternoon of November 5, the survey crew motored up from Long Dock to Cleveland (Figure 76) to survey offshore from Cleveland Avenue, which is the reported site of George Brown's marine railway and shipyard. The survey crew set up lanes parallel to shore running from modern single-family residences with boat docks to the west and ending offshore from a trailer park to the east.

The magnetometer detected seven magnetic anomalies (Figure 77) with relatively little correlation from the sonar. There was a large buoy-handling vessel moored at the east end of the survey area just north of targets M2 and M3, but these targets constitute a shore feature and not the vessel. Targets M4 and M5 are in the shallow cove off

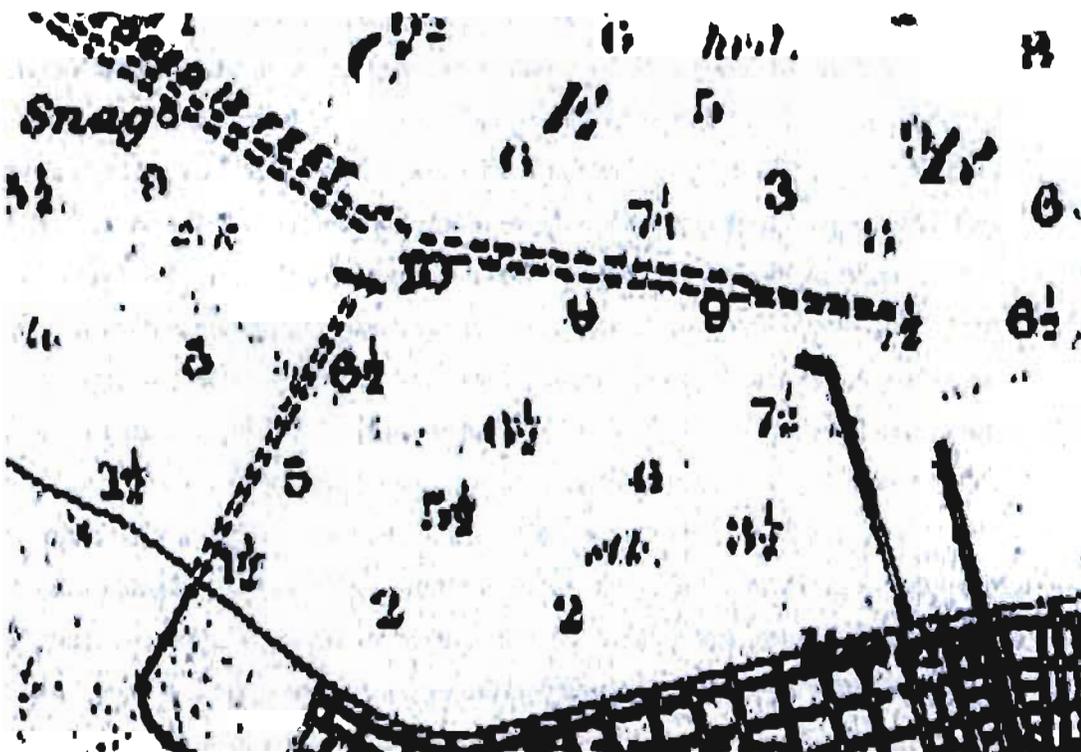


Figure 65. 1916 chart of Charlotte Harbor showing location of the derelict Long Dock and the Hotel Pier, as well as another pier to the east. Image cropped from chart available from NOAA on the world wide web at: <http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Chart number 175 9-1916.

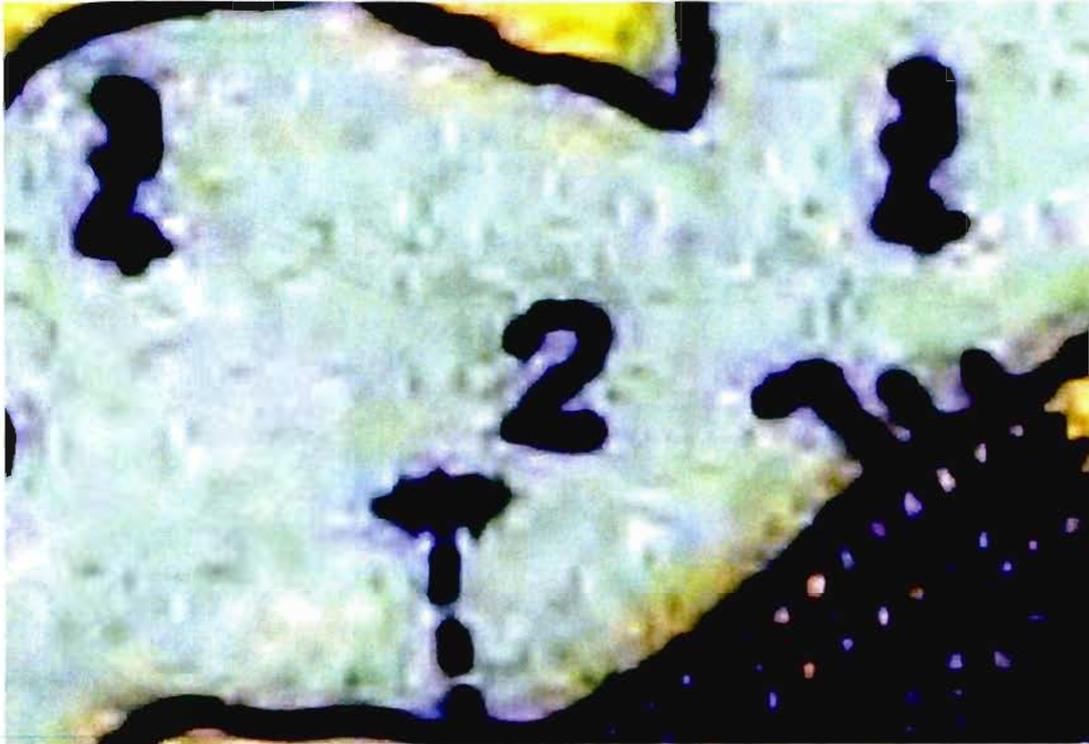


Figure 66. Another 1916 chart of Charlotte Harbor showing location of the derelict Long Dock and the Hotel Pier, as well as other piers to the east. Image cropped from chart available from NOAA on the world wide web at: <http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Chart number 1113 8-1916.

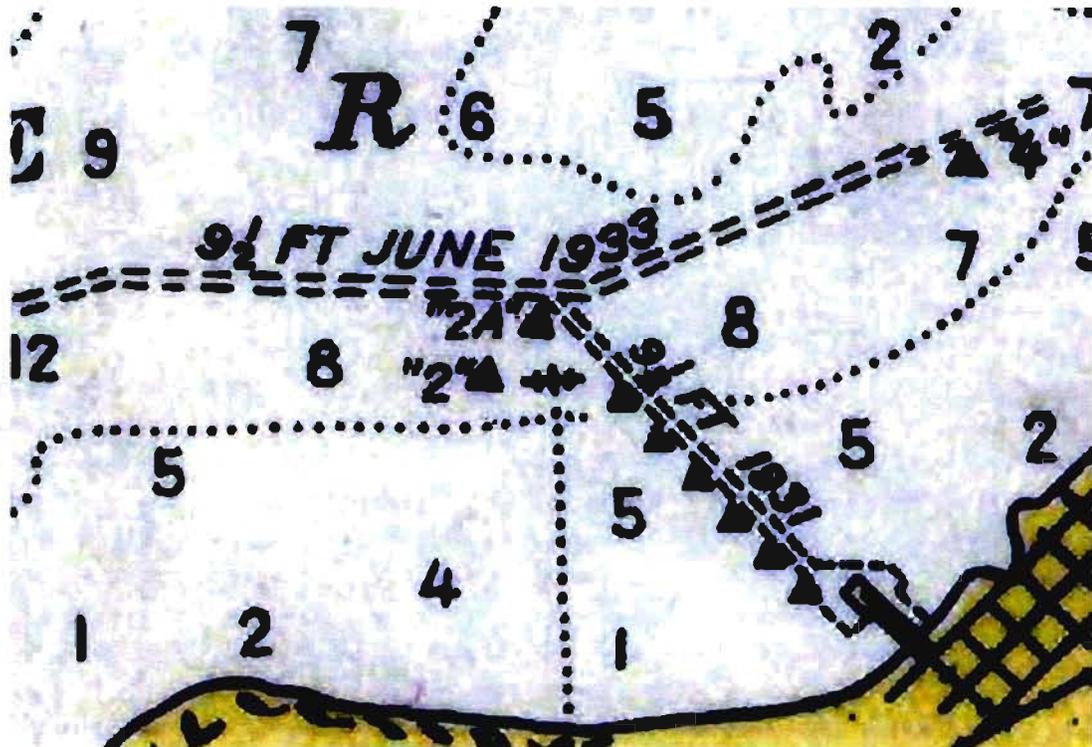


Figure 67. 1929 chart of Charlotte Harbor showing location of the derelict Long Dock and a modern, still-extant channel and dock facility offshore from Punta Gorda Isles. Image cropped from chart available from NOAA on the world wide web at: <http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Chart number 1255 11-1929.



Figure 68. 1956 chart of Charlotte Harbor showing location of the derelict Long Dock and a modern, still-extant channel and dock facility offshore from Punta Gorda Isles. Image cropped from chart available from NOAA on the world wide web at: <http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Chart number 1255 11-1956.

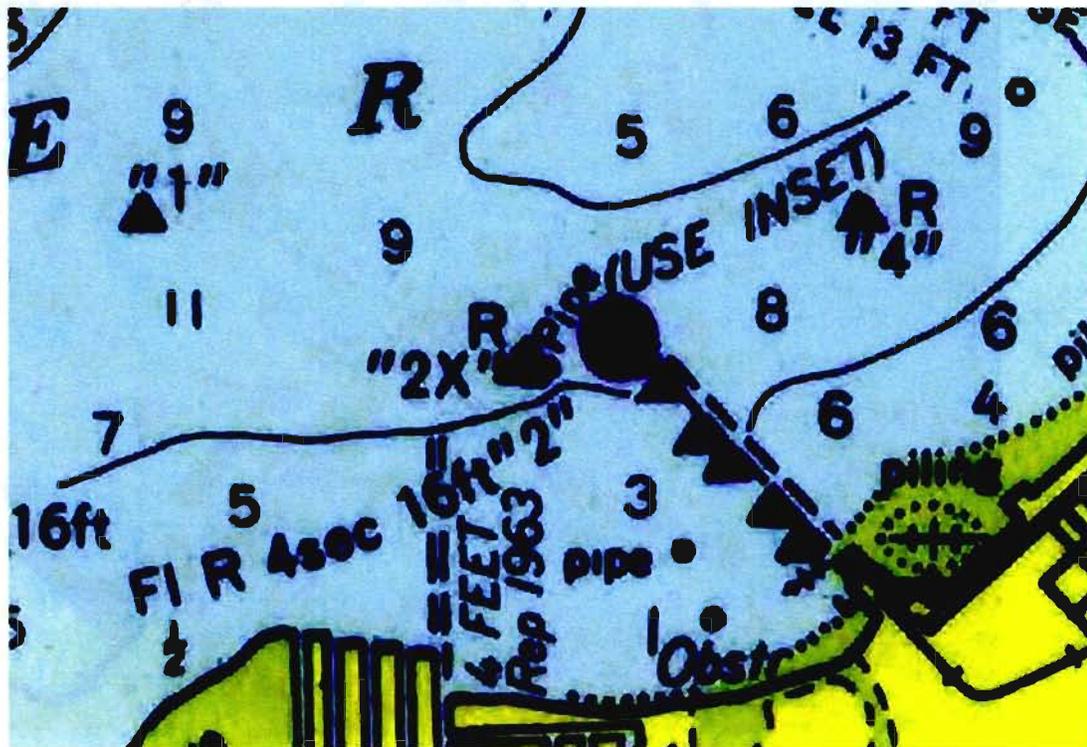


Figure 69. 1967 chart of Charlotte Harbor no longer indicating location of the derelict Long Dock, but showing two modern, still-extant recreational boating channels offshore from Punta Gorda Isles. Also pictured are an obstruction, a derelict dock symbol and a shipwreck symbol at the shore end of the easternmost boating channel. The shipwreck symbol is contained within a shaded area of unknown significance. Image cropped from chart available from NOAA on the world wide web at: <http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Chart number 1255 8-1967.

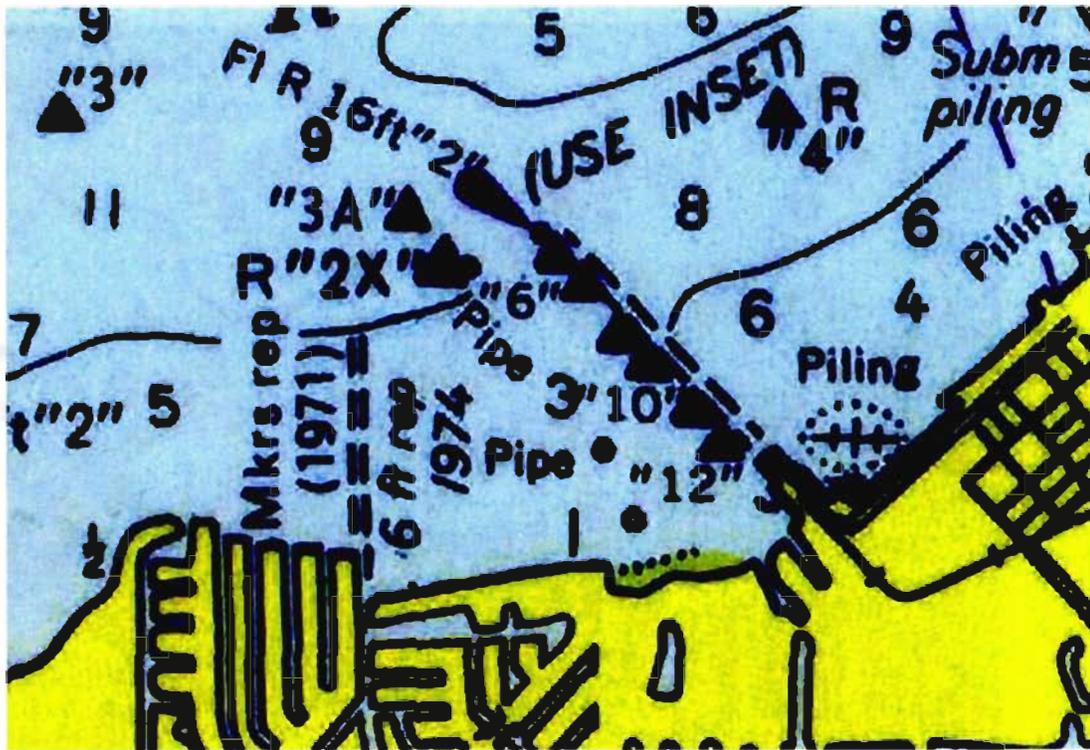


Figure 70. 1974 chart of Charlotte Harbor no longer indicating location of the derelict Long Dock, but showing two modern, still-extant recreational boating channels offshore from Punta Gorda Isles. Also pictured is a shipwreck symbol at the shore end of the easternmost boating channel. The shipwreck symbol is no longer within a shaded area as on an earlier chart. Image cropped from chart available from NOAA on the world wide web at: <http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Chart number 11426 7-1974.

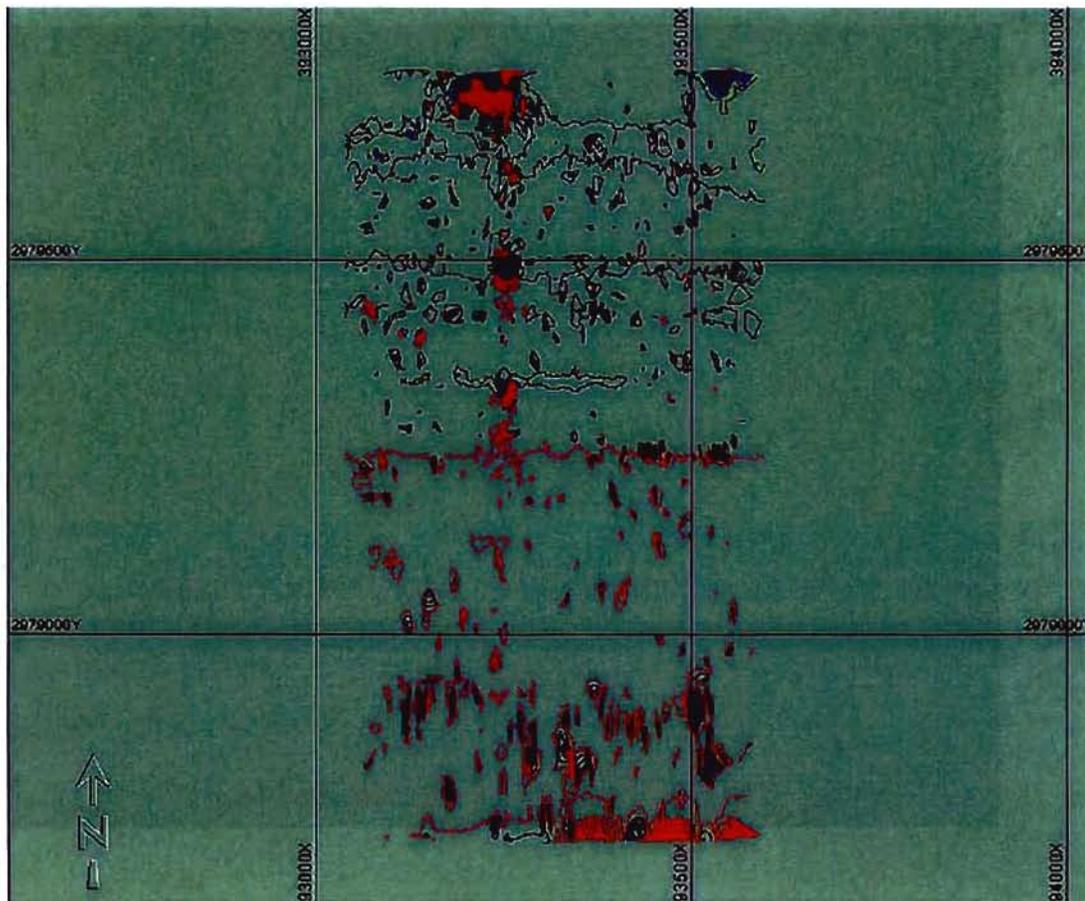


Figure 72. Magnetometer record for Long Dock. North is the top of the page. The target at the top represents the end of the dock, while the targets moving south indicate the course of the dock to the modern steel-reinforced seawall at the bottom of the record.

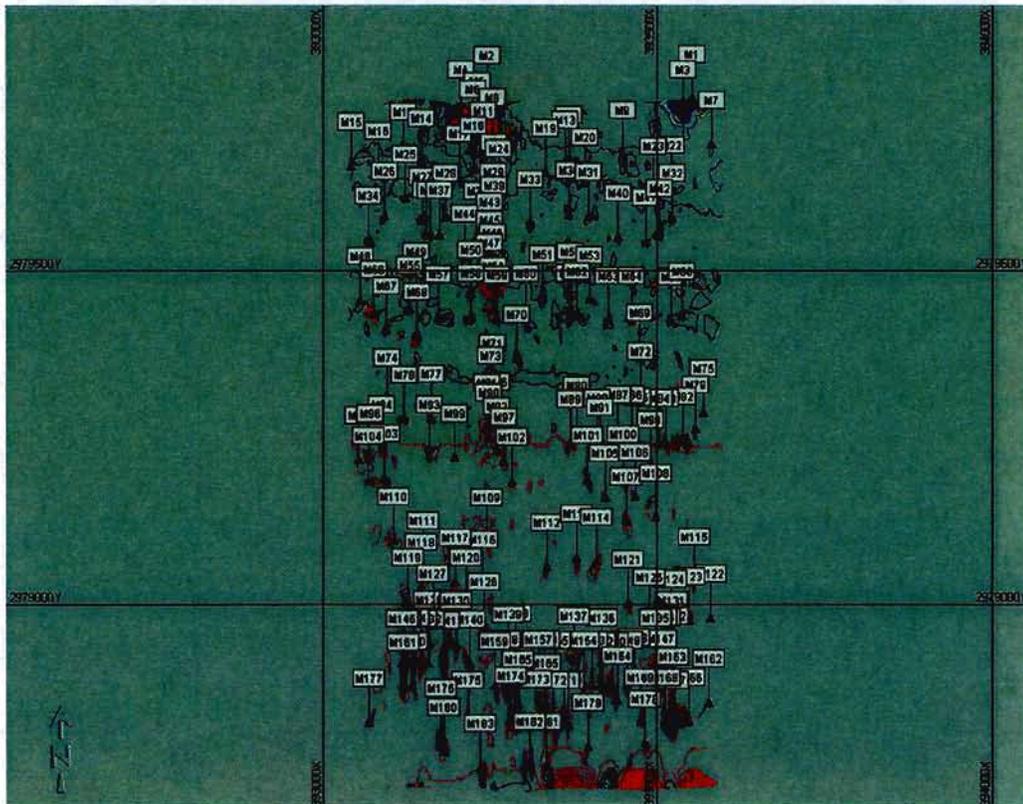


Figure 73. Magnetometer contour map of the old Long Dock with individual targets labeled. This is an extremely complex magnetic feature with corresponding acoustic targets. (contour intervals equal to ten gammas)

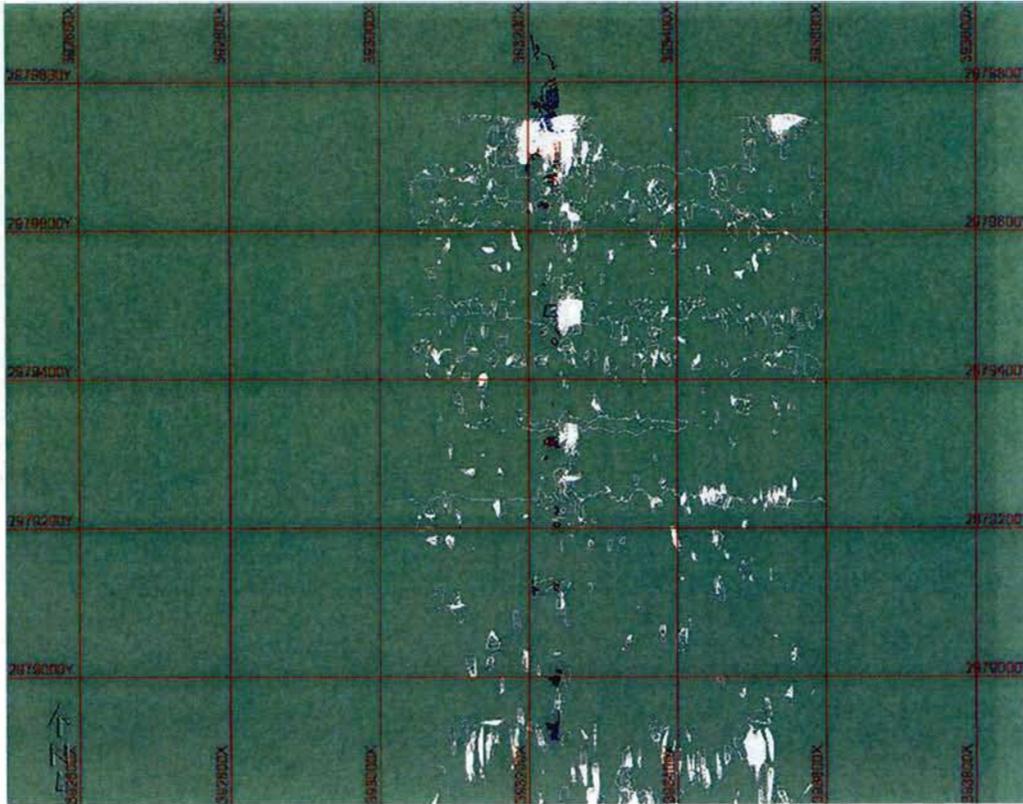


Figure 74. Magnetic contour map comparing all targets in the area of the old Long Dock in white with just the targets along the path of the dock in blue and red. (contour intervals equal to ten gammas)

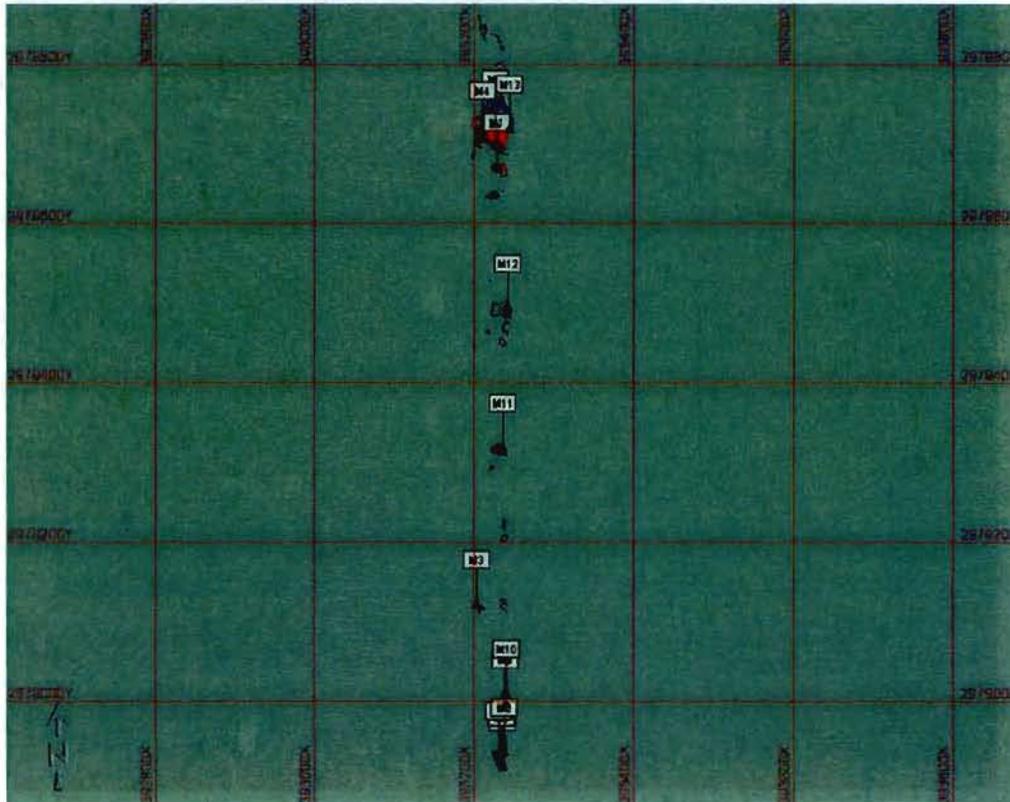


Figure 75. Magnetic contour map of the principal multi-component targets along the course of the old Long Dock. (contour intervals equal to ten gammas)

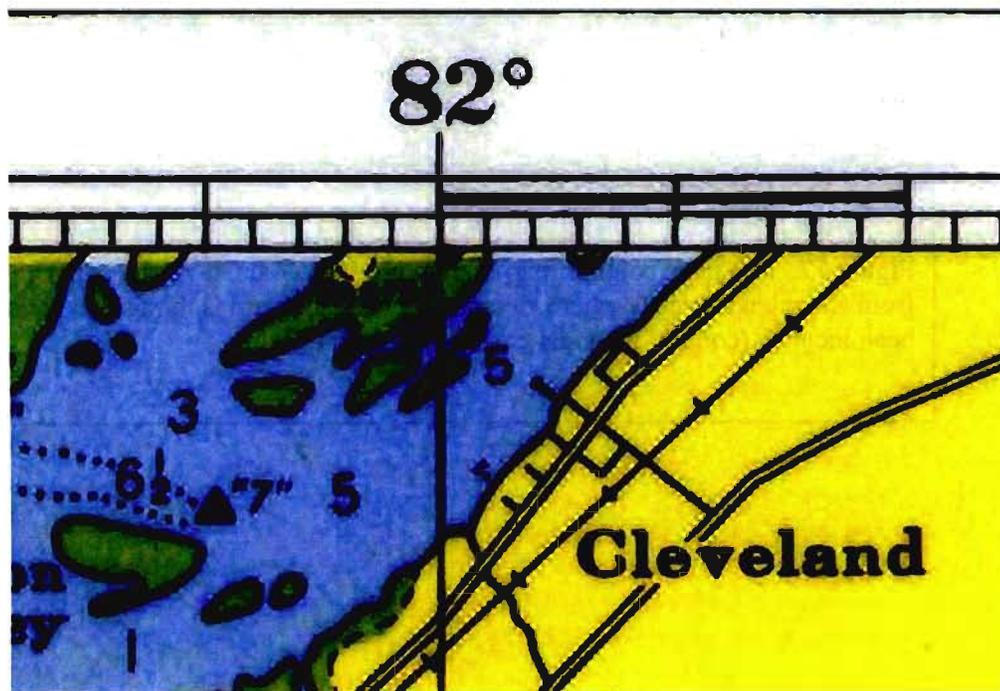
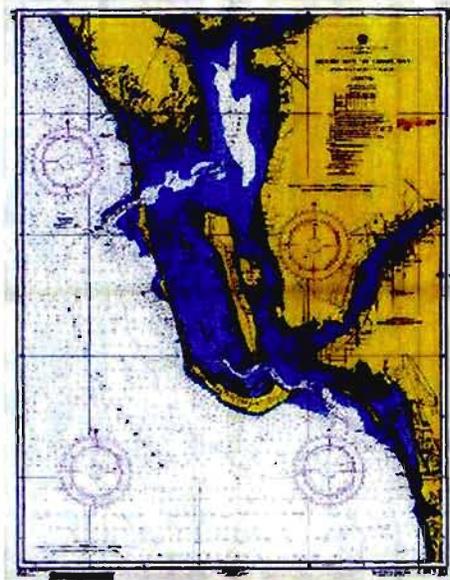


Figure 76. 1956 chart of Charlotte Harbor with a close-up of the town of Cleveland just east of Punta Gorda. A dock is shown extending out from the vicinity of Cleveland Avenue, which is thought to be the location of George Brown's shipyard and marine railway. Image created from chart available from NOAA on the world wide web at: <http://historicals.ncd.noaa.gov/historicals/histmap.asp>. Chart number 1255 11-1956.

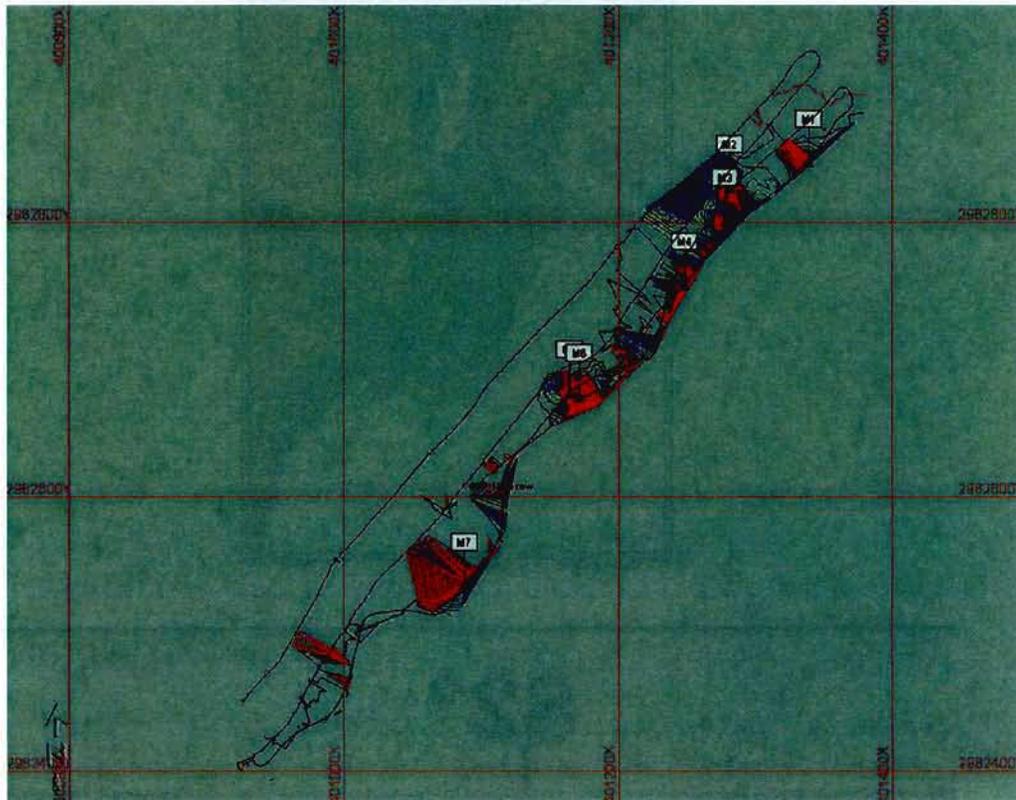


Figure 77. Magnetic contour map of the Peace River at Cleveland offshore from Cleveland Avenue where George Brown's shipyard is thought to have been located, (contour intervals equal to ten gammas)

Cleveland Avenue and are interpreted as targets that may represent remains of the old shipyard.

Cayo Pelau

On November 6, the final day of fieldwork, the survey crew visited Cayo Pelau where legends of pirate treasure abound, and probably spring from the fact that it was a desirable anchorage just inside the harbor's entrance.

The magnetometer detected targets in location that local informants reported a marine railway and a stone platform originally thought to conceal pirate treasure, but is more likely to have been a platform for a signal light to ships entering the bay, as one of our informants reported finding burnt wood in his search for pirate treasure.

Data Reduction in the Field

Each evening the survey crew reduced data from the days work. This consisted of creating magnetometer contour map images and tables of anomalies. The sonar data reduction took much more time as it involved not only reviewing individual records to locate targets, but involved stitching together individual records into a mosaic of the survey area. We quickly fell behind in data reduction, which was continued after November 6 by Michael Faught. The final magnetometer and sonar data sets were not fully reduced until December, which delayed the final report beyond our projected completion date of November 15. The Geographic Information System (GIS) maps prepared for the mouth of the Peace River at the towns of Punta Gorda and Charlotte Harbor (Figure 78) illustrate the number of targets encountered and at least one significant find, the old Long Dock.

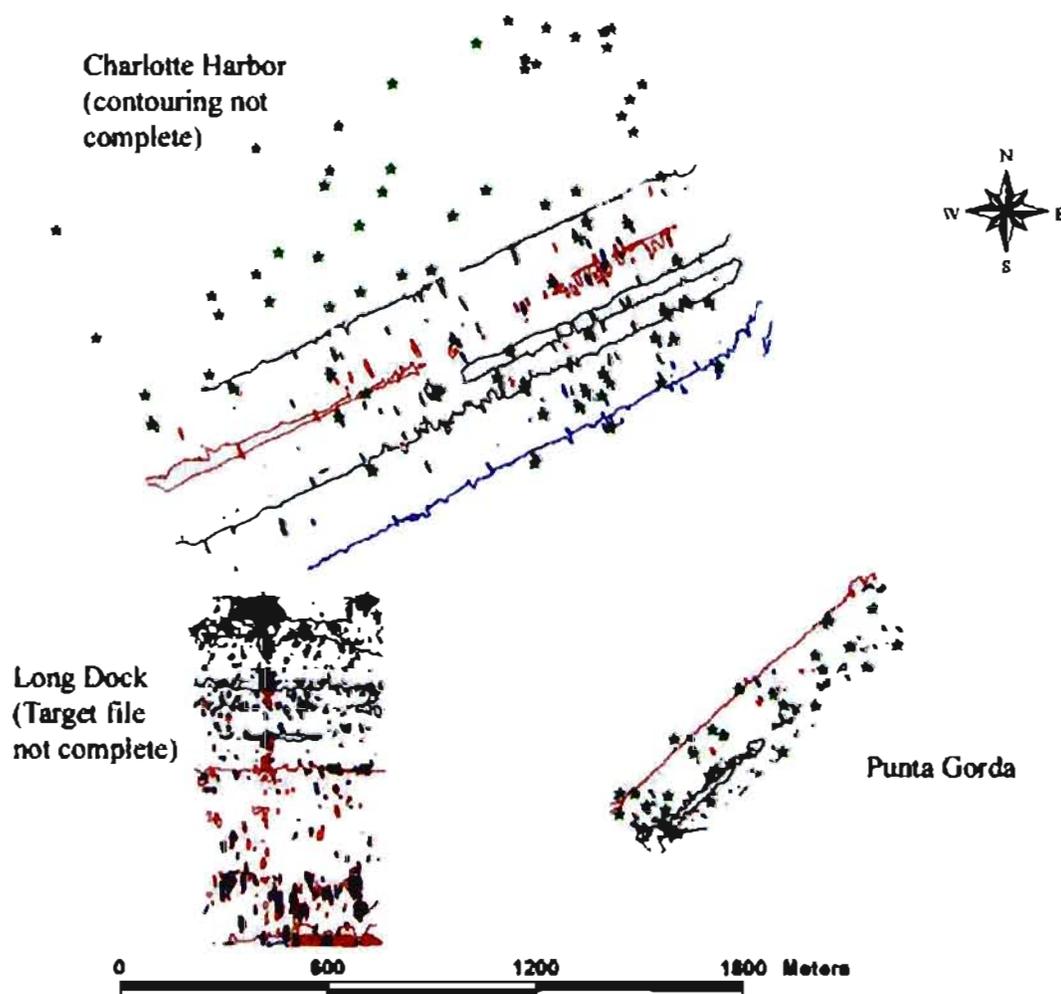


Figure 78. GIS map of the Peace River between the towns of Charlotte Harbor and Punta Gorda, showing acoustic and magnetic targets. The old Long Dock offshore from Punta Gorda stands out at the bottom left (southwest). Green stars are acoustic targets, while the red and blue contours are magnetometer anomalies with contour intervals equal to 10 gammas.

Summary

The magnetometer survey detected 467 magnetic anomalies and 74 significant targets. These were comprised of monopole, dipole and multi-component hits of varying signal strength measured in gammas +or-, and duration measured in meters (feet). Generally speaking there is no ideal shipwreck magnetometer signal. The signal varies depending on distance from the magnetometer and the type of site. A steamboat wreck with associated propulsion machinery will give off a stronger signal than a sailing vessel devoid of anchors, cannon and iron fasteners. With that said, there are criteria to constitute high- priority targets for future groundtruthing by divers conducting visual and probing reconnaissance.

First consideration for magnetometer targets was given to those that occurred over multiple survey lines. This is an indication of the size of a site. Multi-component targets being more complex than either monopole or dipole hits are also candidates for groundtruthing. The association of an image on the side-scan sonar with a magnetometer target is also useful in determining its status as a potential resource. The strength of the signal is also a factor, but a strong reading, either monopole or dipole, from a single point source is generally considered to be modern debris unless other factors argue for its inspection, such as proximity to another high-priority target or historical use of the area. The historical use of a specific survey area may cause a target of low magnitude to be selected for further investigations.

These criteria have primarily been established during surveys for shipwrecks of significant size on projects concerned with clearing an area prior to dredging. This approach ignores surveying to identify smaller submerged cultural resources such as vernacular watercraft and dock features that would not present such a sizeable magnetic signature.

Of the 74 identified targets 43 were monopole hits and 26 were dipole hits. There were five multi-component targets. Multi-component targets are the more complex, but that does not discount the possibility that dipole and even monopole targets represent

potential archaeological sites. The gamma deviations for the five multi-component targets ranged from a low of -53 gammas for target M18 to a maximum of +200 gammas for target M37. All had durations from 16 to 23 meters (49 to 70 feet). The gamma deviations for the 26 dipole targets ranged from a low of +26/-6 gammas for target M3 to a maximum of +791/-233 gammas for target M53. All had durations from 14 to 34 meters (42 to 105 feet). The 74 monopole targets ranged from a low of +or-18 gammas for targets M2, M33 and M35 to a maximum of +935 gammas for target M74. All had durations from 7 to 30 meters (21 to 91 feet).

Using the 50-gamma/80-foot criteria the magnetic data indicates six targets for further investigation (M1, M4, M9, M16, M53 and M57). The five multi-component targets are M18, M32, M37, M41, M41 and M44). The number of targets over 50 gammas is 25. Of these three were dipole and the remainder monopole. The number of targets with a signal duration in excess of 26 meters (80 feet) are nine, so this was the prime factor in keeping the 50-gamma/80-foot criteria target number low.

CHAPTER SIX

CONCLUSIONS

Introduction

The Charlotte Harbor Shipwreck Survey is a long-term scientific investigation to locate and document submerged historic properties. The first phase has been a successful survey and planning project focused on identifying areas of past maritime activity and locating targets that might represent underwater archaeological sites. In addition the survey team revisited previously recorded sites in an effort to add to the information already collected on these sites and to evaluate their potential for future research. The work investigated approximately 400 hectares (1000 acres) in Charlotte Harbor, its tributary rivers and nearby Gulf of Mexico waters. No ground truthing was planned in this project as available funding and local matching funds were just sufficient to lease the required state-of-the-art remote-sensing equipment and field the project for a three-week period.

The project succeeded in finding 467 magnetic anomalies and 54 acoustic targets. Of these 74 magnetic anomalies and most if not all the sonar targets are considered significant and in need of ground truthing. Additionally the survey identified two new archaeological sites above and beyond the scope of work. These include possibly the oldest industrial site in south Florida and one of the oldest docks in Charlotte Harbor. Both of these sites require future mapping and documentation.

Recommendations for Future Work

Mote's Charlotte Harbor Shipwreck Survey recommends additional investigations of the sites and targets identified during its 2005 remote-sensing survey. It also recommends continued remote-sensing work to survey areas that the 2005 survey did not have time to examine.

The Liverpool phosphate processing and loading facility and the Punta Gorda old Long Dock represent significant submerged cultural properties with great potential to

inform the public about the maritime culture of Charlotte Harbor. Liverpool has both terrestrial and underwater components including building and dock foundations and at least one sunken vessel and another eroding from the river bank. Hurricanes Charley (2004) and Wilma (2005) advanced shoreline erosion and have hastened the collapse of some site features. This site is also threatened by development of residential housing. As possibly the oldest industrial site in south Florida the existing remains should be thoroughly documented before they are completely lost. The location of a book describing this facility as part of the background research of the survey offers the unique opportunity to compare written descriptions and photographs with the archaeological remains. This will help understand the operation of this little known but significant resource.

The Punta Gorda old Long Dock operated between the 1880's and 1904 when it burned. As such it represents a very early maritime site that appears to have escaped disturbance by the modern development of Punta Gorda. It offers the opportunity to study a site that saw regular rail and watercraft traffic during the period when Punta Gorda was first being settled and began to grow. Historical research suggests that this site might contain the remains of the *Mary Blue*, one of the steamboats used to lighter goods around the harbor.

Several other targets detected have a high degree of correlation to historical accounts of maritime activity in the area. The Cayo Costa Quarantine Station is well documented on historic maps (Figure 79) and its location is confirmed by the remote-sensing data acquired at Quarantine Rocks. A visual survey accompanied by mapping of this site would enable a more detailed description of the site as well as allow for more developed recommendations for its management. The same can be said for the ballast sites located east of Miller's Channel and the Intracoastal Waterway. The only way to determine if these are shipwrecks or ballast dumps is through examination by divers. Underwater investigations will also shed light on the targets acquired at the Cleveland site of George Brown's shipyard, the large anomaly off the historic town of Punta Gorda



Figure 79. Close-up from charts site of Cayo Costa Quarantine Station.

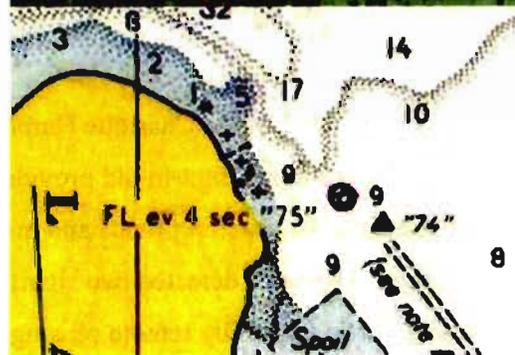
1863, prior to Quarantine Station construction.



1895 Quarantine Station illustrated.



1916 showing wreck symbol at former location of Cayo Costa Quarantine Station.



1961 showing wreck symbol at former location of Cayo Costa Quarantine Station.

that correlates to charts with a shipwreck symbol, the location of a cattle dock on the Myakka River, the area near Punta Rassa Cove where local informants tell us they have seen wrecks and collected bottles, and Cayo Pelau with its possible marine railway.

Mote's Charlotte Harbor Shipwreck Survey is confident that the seven wrecks now designated on the breakers of the main entrance into Charlotte Harbor are in fact just five wrecks and that two of these sites have been reported by separate parties leading to this discrepancy. Determining precisely which site is which will require underwater examination. Additionally as these sites were reported in the course of work by, in one instance, treasure hunters and the other a contract archaeologist no site mapping was attempted. Site mapping would allow for later comparison to assess changes in the sites over time.

The final recommendation is for remote-sensing survey work to continue. The limited scope of this project did not allow for as many areas to be searched as we would have liked. For example informants told us of the sinking of the steamboat *Phoenix* in a deep hole in the Peace River opposite Cleveland. Surveying this area alone will take at least one week. Historical documentation also points to the sinking of the steamboat *Thomas A. Edison* in the Caloosahatchee River at Fort Myers, but again the area to be searched is large. Both of these vessels played important roles in the maritime past of Charlotte Harbor. During the Civil War several vessels were beached and destroyed on Sanibel Island. In short additional survey work will likely continue to identify submerged cultural resources.

Summary

This survey and planning project constitutes phase 1 of the Charlotte Harbor Shipwreck Survey. It was funded by an Historic Preservation Grant-in-aid provided by the Florida Bureau of Historic Preservation with additional matching funds and in-kind resources provided by the Mote Marine Laboratory. The work detected two significant archaeological sites and over 100 magnetic and acoustic targets by remote sensing survey. The project identified new archaeological sites in Charlotte and De Soto counties

and added new information to previously recorded sites. The survey's methodology involved a review of historical and archaeological literature, interviews with local residents (especially fishermen), a remote-sensing field survey, and development of a database of 54 sonic and another 467 magnetic anomalies in and around Charlotte Harbor. Mote Marine Laboratory hopes to continue the Charlotte Harbor Shipwreck Survey as a long-term, scientific investigation into the submerged cultural resources of Charlotte Harbor.

Table 2. Site Evaluations and Recommendations

FMSF #	Survey #	Site Name	Evaluation	Recommendation
		Liverpool Phosphate Works	Significant	Excavation
		Old Long Dock	Significant	Excavation
8LL700B		Quarantine Station*	Significant	Site mapping
8LL1602		G-1*	Significant	Site mapping
8LL1603		G-2/3*	Significant	Site mapping
8LL2033		G-5*	Significant	Site mapping
8LL1977		Red Brick Wreck*	Significant	Site mapping
8LL1978		Ax Head Wreck*	Significant	Site mapping
8LL1979		Jackson's Wreck*	Significant	Site mapping
8LL1980		Keel Wreck*	Significant	Site mapping
8LL1886		Fisherman's Point Wreck*	Significant	Site mapping

* denotes previously recorded site

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