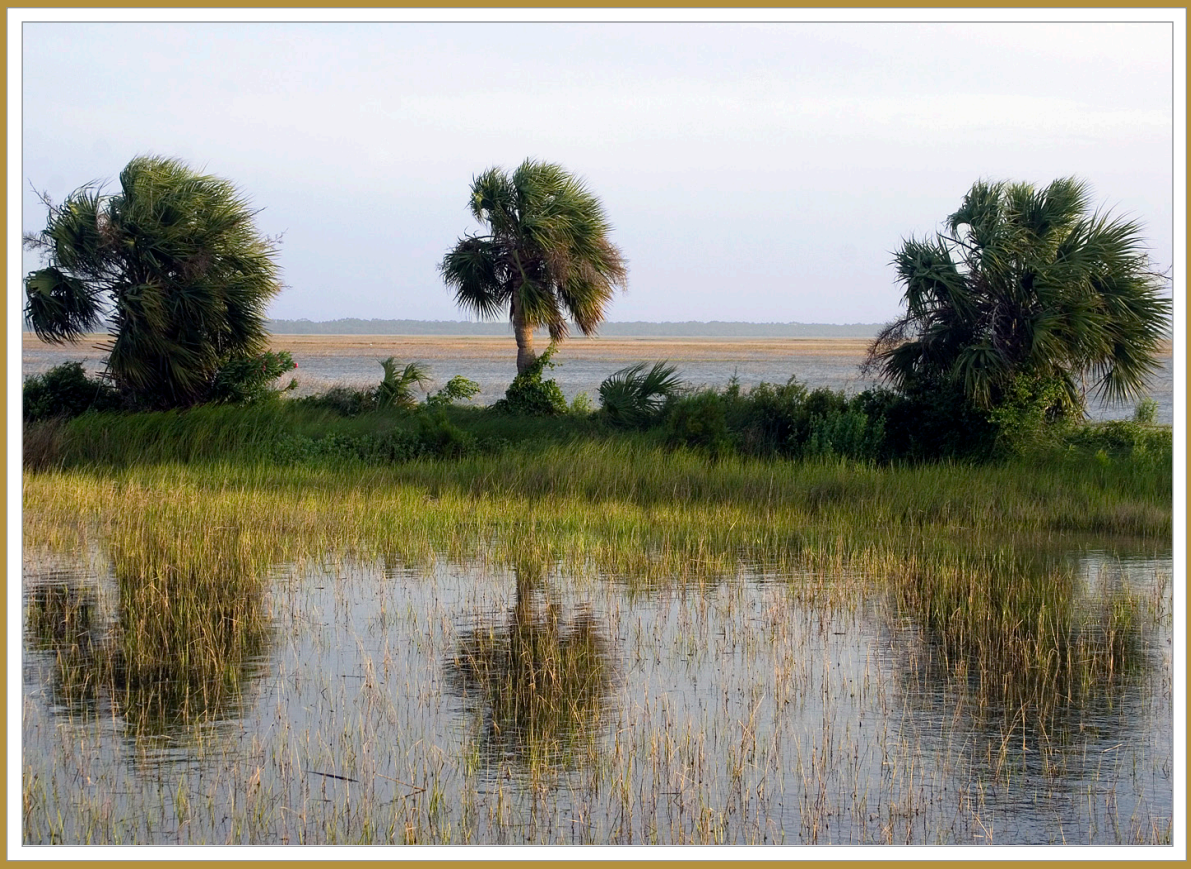

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AFFECTED ENVIRONMENT

CHAPTER 3 — AFFECTED ENVIRONMENT

INTRODUCTION

This chapter describes the existing environment of Fort Pulaski National Monument and the surrounding region. It focuses on the national monument's cultural and natural resources, visitor activities and experiences, facilities, and socioeconomic characteristics that have the potential to be affected if any of the alternatives were implemented.

EARLY HISTORY

Little archeological evidence provides insight into the early history of Cockspur Island, the site of Fort Pulaski National Monument. Nearby islands had Native American residents during the Middle Woodland (ca. 500 B.C. to A.D. 500) and Late Woodland (ca. A.D. 500 to A.D. 1100) periods. Not until the 1580s, when Spanish Missions began to appear along the Georgia Coast, does more specific documented history of Cockspur Island begin (Meader and Binkley, 2003).

By 1680, the Spanish had been pushed deeper into present-day Florida through raids by Native Americans allied with English settlers to the north. This left the Georgia Coast open to English colonization, which occurred with General Oglethorpe's landing in 1733. Originally called Peeper Island, Oglethorpe's small fleet anchored on Cockspur Island before sailing to the future site of Savannah, Georgia, a set of bluffs overlooking the Savannah River 15 miles west (Meader and Binkley, 2003).

With the founding of Savannah, Cockspur Island was used by rum runners, shipping merchants, and blessed by John Wesley in 1736. By 1761, construction of a timber fort had begun on Cockspur Island to protect Savannah from Spanish attacks out of St. Augustine to the south. Fort George was built to guard against the Spanish, but became more useful for regulating shipping and *pirates and for quarantining the infectious* arriving at the Port of Savannah. Fort George consisted of a 100-foot square palisade enclosing a 40-foot square blockhouse. The structure was in disrepair by the 1770s (Meader and Binkley, 2003).

The United States, as a new nation by 1794, authorized the construction of the "First American System of Fortifications." As part of this program, construction began on Cockspur Island at an undocumented site to build a new defensive fort, named Fort Green. Fort Green was constructed of earth and timber and was used primarily as a quarantine station. Fort Green was demolished in a storm in 1804, killing half the inhabitants (Meader and Binkley, 2003).

19TH CENTURY HISTORY

Congress authorized the "Second American System of Fortifications" in 1807 and with the guidance of the U.S. Army Corps of Engineers began to design a new stronger system of fortifications. The War of 1812 provided an impetus to redesign the defense system further. The "Third American System of Fortifications" was planned to provide greater coastal defense and use modern defensive technology. The defense plans would span four decades and erect masonry forts to defend strategic coastal locations throughout the United States. Cockspur Island was selected as the site for Fort Pulaski in 1828 (Meader and Binkley, 2003).

Construction of the red brick walls of Fort Pulaski officially began in 1833, but the years 1829–1831 were notable for young Robert E. Lee's assignment to Cockspur Island as an assistant engineer to Major Babcock. Lee performed excavation and foundation direction for three years before being transferred to Virginia (Meader and Binkley, 2003).

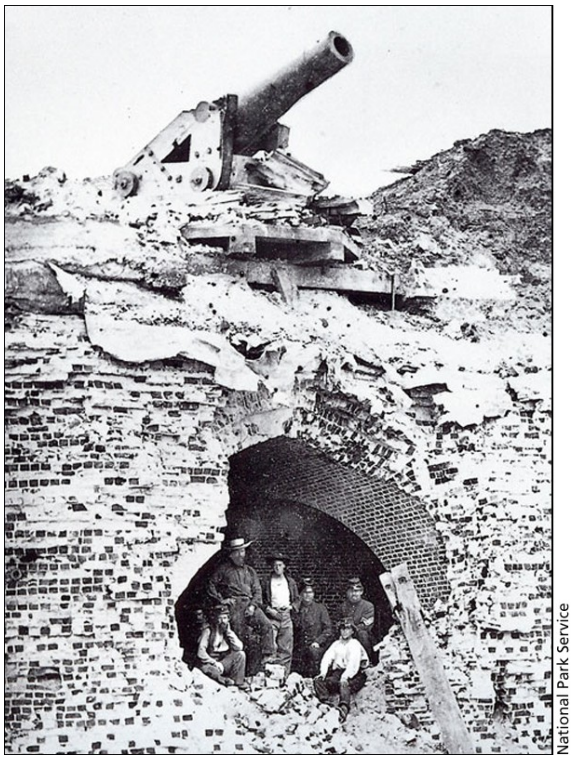
The construction phase of Fort Pulaski is marked by the creation of additional structures on Cockspur Island including the construction village on the north end of the island and a system of dikes and trenches to control the water over the low-lying island. A moat with a drawbridge and other strategic earthworks were also constructed around Fort Pulaski (Meader and Binkley, 2003).

The masonry fort used 25,000,000 bricks. It was built with 32-foot high walls, interior rooms, a large gun deck, and a demilune complete with a drawbridge over the moat. By 1847, Fort Pulaski was essentially completed (Meader and Binkley, 2003).

In 1848, the Cockspur Island Lighthouse was built on the southeast corner of the island on a strip of oyster shells and mud. The lighthouse was destroyed by a hurricane in 1854 and a replacement lighthouse was built on the same foundation (Meader and Binkley, 2003). This lighthouse still stands in 2010.

Soon after South Carolina's secession from the Union in late 1860, Georgia Governor Brown garrisoned Fort Pulaski with the Georgia Volunteer Militia. Robert E. Lee returned to Fort Pulaski in November of 1861 to oversee the strengthening of Confederate coastal defenses in Georgia, South Carolina, and Florida. Upon Lee's return to Fort Pulaski, defensive improvements were made and arms were brought from Tybee Island in preparation for war. Federal troops took possession of nearby Tybee Island in response (Meader and Binkley, 2003).

On April 10, 1862, Fort Pulaski was bombarded by federal batteries on Tybee Island. The bombardment lasted only 30 hours and brought about the surrender of Fort Pulaski to federal General Gillmore. Gillmore's rifled cannons breached Fort Pulaski's southeast corner, and subsequently made the use of masonry forts obsolete as defense to modern weaponry (Meader and Binkley, 2003).



National Park Service

Breech in Fort Pulaski Wall April 1862

Under federal occupation Fort Pulaski was used as a prison camp and blockade station for the Savannah River. Another result of the federal occupation of Fort Pulaski was an influx of escaped slaves to the island seeking federal protection. Many of these former slaves became soldiers in the 1st, 2nd, and 3rd South Carolina Volunteers (Meader and Binkley, 2003).

POST CIVIL WAR HISTORY

After the Civil War, Fort Pulaski continued to serve as a prison for former Confederate officials and Union deserters. The fort's damaged sections were repaired and upgrades to the demilune included earthwork mounds over gun emplacements and underground passageways. Despite the repairs, Fort Pulaski was almost deserted and placed on reserve in 1873 as attention was put toward the construction of Fort Screven on Tybee Island. An army caretaker was left to oversee Fort Pulaski until 1914 (Meader and Binkley, 2003).

By the turn of the 20th century, the North Channel Savannah River had become the primary shipping channel due to dredging and Fort Pulaski had been supplanted by Fort Screven on Tybee Island. Fort Pulaski was used as a control station for mining the North Channel Savannah River in 1895 at the outbreak of war in Cuba. Battery Horace-Hambright was later built in 1898-1899 on the north shoreline of Cockspur Island for harbor protection during the Spanish American War. Neither the mines nor the battery saw any military action (Meader and Binkley, 2003).

The Cockspur Island Lighthouse continued to operate, but most of the other structures on the island including the construction village were destroyed in a hurricane in 1881. The dike system was damaged as well during this storm prompting the construction of a lighthouse keeper's cottage on the upper level, gorge terreplein, in 1906. A jetty was constructed on the northeast end of Cockspur Island attracting sediment and building up the island on the northeast side. In 1889, a wood frame elevated quarantine station was built on the northwest portion of Cockspur Island. This station continued to expand in buildings and acreage until after World War I when it was closed and the quarantine station moved to Savannah (Meader and Binkley, 2003). The Quarantine Station Attendant's cottage was eventually adapted for a monument residence and in 1999 was converted into the monument's administrative headquarters.

In 1933, the National Park Service acquired Fort Pulaski National Monument from the War Department, but years of prior neglect ensured that years of further effort were required to rehabilitate the fort and its grounds. The first steps in this process centered on monument development. Fortunately, several New Deal agencies, especially the Civil Works Administration, the CCC, and the Public Works Administration, were able to help Fort Pulaski achieve many of its early development goals (Meader and Binkley, 2003).

In May 1934, the Treasury Department authorized the National Park Service to establish CCC Camp 460 on the northwest shore of Cockspur Island directly east of the old Public Health Service Quarantine Station. This location proved to be ideal because of its access to a first class ship's dock and short 15-minute walk to the fort. Extra buildings at the quarantine station, built at the end of World War I, provided quarters for enrollees (Meader and Binkley, 2003).

In late 1941, the U.S. Navy established a section base on Cockspur Island for use by small coastal patrol ships. The Navy's occupation of Fort Pulaski National Monument lasted the duration of World War II and ended in 1947. Moreover, when the Navy finally vacated Cockspur Island, it left behind many ramshackle buildings that NPS planners had to consider. By 1949, the National Park Service had drafted a plan that proposed to remove 57 buildings, many of them from the Navy occupation. However, to redevelop the residence and utility area as specified in the 1942 master plan, eight buildings were to be retained and used for monument purposes: three residences, the fire pump house and firehouse, a transformer house, a small magazine, and a lumber shed.

Historic American Building Survey

WORLD WAR II BUNKER FORT PULASKI

Official interaction between the U.S. Coast Guard and Fort Pulaski National Monument began in 1938 when the former obtained NPS permission to establish a wharf on Lazaretto Creek within the monument's boundary. The wharf is located between McQueens Island and Tybee Island, near the creek's confluence with the South Channel Savannah River. The

next major activity of the U.S. Coast Guard on Cockspur Island began on June 20, 1945, when the U.S. Navy transferred its Naval Receiving Station to the agency. The end of World War II created a sudden demand for the U.S. Coast Guard to obtain facilities to discharge demobilized personnel. The discharge center operated only until June 17, 1946, at which time the U.S. Coast Guard vacated its Navy buildings (Meader and Binkley, 2003).

Although the U.S. Coast Guard Discharge Center closed and the Navy returned Fort Pulaski to the National Park Service in 1948, the U.S. Coast Guard sought to continue activities at the monument. In 1949, Superintendent Ralston Lattimore agreed to allow the U.S. Coast Guard to use the wharf built by the Navy on the north shore of Cockspur Island. The following year, the National Park Service issued a permit to the U.S. Coast Guard to use and maintain 350 feet of the deep-water dock, followed by a long-term special use permit on September 25, 1952. By January 1954, the U.S. Coast Guard further proposed to claim a large section of Cockspur Island's residence and utility area to establish barracks and recreational facilities. The proposal lacked a strong defense purpose, however, and the National Park Service was thus successful in rejecting the application. A few years later, the U.S. Coast Guard renewed its attempt to expand operations on Cockspur Island. On November 17, 1965, the agency succeeded in establishing a Search and Rescue Station. The National Park Service issued a special long-term use permit that allowed the U.S. Coast Guard to occupy a 400-foot by 450-foot tract of land upon which permanent buildings, concrete-moorings, and communication equipment and antennas were constructed.

In 1980, an interagency agreement between the National Park Service and the U.S. Coast Guard authorized administrative jurisdiction over an additional 1.85 acres of land for the Search and Rescue Station as long as it did not jeopardize or interfere with the area's natural and historic resources. In 1993, the U.S. Coast Guard reconstructed a seventy-five-foot-tall steel aid-to-navigation structure destroyed in a recent storm and originally built in 1978. The U.S. Coast Guard continues these operations at Fort Pulaski National Monument to this day. Generally, the National Park Service views U.S. Coast Guard activities as compatible with monument policy (Meader and Binkley, 2003).

The Savannah Bar Pilots and their collective, the Savannah Pilots Association, have roots that trace to the early days of the Colony of Georgia. Reportedly, William Lyford established a pilot house near Fort George on Cockspur Island in 1768. The State Board of Commissioners of Pilotage at the Port of Savannah currently regulates the Bar Pilots, who earn their keep by facilitating safe passage to and from the port through the difficult-to-navigate waters of the Savannah River. Individual ships or shipping companies pay the pilots for these services. Cockspur Island provides a convenient location for the Bar Pilots dock and facilities because every commercial vessel entering or leaving the Savannah River must have a pilot on board (Meader and Binkley, 2003).

In 1940, the Savannah Bar Pilots moved their operations from Lazaretto Creek to the west end of Cockspur Island. At first, the Bar Pilots requested the use of quarters and the dock on the north channel of the island, but the NPS coordinating superintendent opposed their presence. He felt that they had no historical association with the park. Superintendent Holland disagreed due to the relevance of the operation of the Savannah Harbor. The NPS acting director concurred with Holland and approved the proposal in October 1940. This decision was taken in light of the public service that would benefit the monument during weather emergencies and because it would receive immediate notice of advancing storms. Annual rent for the Savannah Bar Pilots was set at $70 (Meader and Binkley, 2003).

The Bar Pilots soon moved into a dormitory and two small buildings and occupied this facility under a special use permit that was

renewed annually. This arrangement worked until the early 1970s, by which time the Bar Pilots' buildings had deteriorated. In 1973, the National Park Service issued a 20-year special use permit to the Bar Pilots to construct, maintain, and use living quarters, a dock, and fuel supply system, and a parking area on its .67-acre lot. With a long-term lease in place, the Bar Pilots completed renovations. The new dormitory they built stands at the location of the previous Bar Pilots building. The National Park Service renewed the association's special use permit in 1993 and again in 1998 (Meader and Binkley, 2003).

The Savannah Bar Pilots have had exclusive use of NPS land and improvements at Fort Pulaski National Monument since 1940 to operate a vessel piloting business. The National Park Service authorized the use by special use permit in 1940 and has issued, through Fort Pulaski, a series of permit renewals since that time. The existing permit renewal expired on December 8, 2008. Based on research and a recent Office of Inspector General report, the legality of continuing to authorize the use by special use permit is now subject to question. The Savannah Bar Pilots wish to continue operating their business out of Fort Pulaski. There are no other known locations that would allow the Savannah Bar Pilots to operate more efficiently because of the deep water accessibility and the distance to embarking and disembarking ships that are entering and leaving the Savannah Harbor. The Bar Pilots have been operating at the current location for nearly 70 years with virtually no adverse impact on monument resources, visitor experience, or monument operations. The monument also derives substantial revenue from this operation. One possible solution under consideration is legislation that would authorize a noncompetitive lease to permit the Pilots to continue operating at their present location.

THE NATIONAL MONUMENT AND ITS REGIONAL CONTEXT

Fort Pulaski National Monument encompasses large portions of Cockspur and McQueens islands in Chatham County, Georgia, approximately 13 miles east of Savannah. Cockspur Island sits at the mouth of the Savannah River, splitting the river into north and south channels that enter the Atlantic Ocean at the island's eastern end. The city of Tybee Island and its popular beaches are located about 5 miles east via U.S. Highway 80.

Tybee Island, the location of federal batteries during the Battle of Fort Pulaski, is southeast of Cockspur Island across the South Channel Savannah River. McQueens Island, 5,000 acres of salt marsh and part of Fort Pulaski National Monument, is south of Cockspur Island and connected by the South Channel Bridge. Lazaretto Creek separates McQueens Island from Tybee Island to the east.

Fort Pulaski National Monument is regionally located adjacent to a state line, the North Channel Savannah River, politically separating Georgia and South Carolina near the mouth of the Savannah River on the Atlantic Coast. This location is easily accessible by Interstate 95 connecting Florida to Maine along the Atlantic Seaboard. Interstate Highway 16 runs east west and connects Savannah, Georgia, to Interstate Highway 75 and Atlanta, Georgia, where major air, freight, and other interstate highways converge. Fort Pulaski National Monument is a day's drive from central Florida, Alabama, Georgia, South Carolina, North Carolina, and parts of Virginia. Population centers in this region include Savannah, Macon, Atlanta, and Augusta in Georgia; Jacksonville, Orlando, Tampa, and Miami in Florida; Birmingham and Montgomery in Alabama; Charleston, Columbia, and Greenville in South Carolina; and Charlotte, Raleigh-Durham, Wilmington, Winston-Salem, and Greensboro in North Carolina.

Fort Pulaski is sited at the eastern end of Cockspur Island and faces due east. The fort's footprint encompasses 3.25 acres, surrounded on three sides by the broad waters of the Savannah River. The historic 2-mile system of dikes and ditches encircles the fort and demilune. The boundaries of Fort Pulaski National Monument encompass 5,623 acres of Cockspur Island and the majority of McQueens Island across the South Channel Savannah River.

Cockspur Island is a low, marshy island. Much of it was formerly salt marsh, but centuries of draining, dredging, and filling have created dry land. Still, elevations seldom reach more than six or seven feet above sea level and about half the island is inundated at high tide. Most of the high ground is located within the historic 2-mile dike system and in the area to the west of the fort and north of the service road, extending as far as the World War II bunkers. Much of the area south of the service road has never been filled and stays wet most of the time. A retention pond is located in this area.

Long Island, to the immediate west of Cockspur Island, has had a similar history of draining, dredging, and filling. Over the years, the two islands had become joined through this process. Late in 2007, a breach opened this connector between Cockspur and Long islands and has since widened, recreating two separate islands.

The Cockspur Island Lighthouse was built in 1854 and sits on an islet at the mouth of the South Channel Savannah River. The use of the lighthouse as a shoreline navigational guide was discontinued in 1949 with increased use of the North Channel Savannah River for shipping. It was transferred to National Park Service ownership from the U.S. Coast Guard in 1959. Periodic attempts to organize a reconstruction effort after NPS ownership of the lighthouse have resulted in piecemeal maintenance. The Cockspur Island Lighthouse underwent major repairs and replication of its iron cap in 1999, but it continues to have maintenance problems due to its location on a periodically submerged island (Meader and Binkley, 2003).

The lighthouse foundation is threatened by years of erosion from storms and the active shipping channel that have lowered the height of the island and removed previous revetment causing the island to be underwater at all times except low tide. This exposes the wooden platform that supports the masonry foundation to shipworm infestation that can compromise and eventually destroy the platform. This threat is current and loss could occur within a matter of years. An environmental assessment to evaluate the replacement of the historic revetment around the lighthouse was completed with the signing of the Finding of No Significant Impact on November 18, 2009. Funding for this work has been approved and planning and design is underway as of February 2011.

A revetment is a facing of masonry or the like, especially for protecting an embankment. River or coastal revetments are usually built to preserve the existing uses of the shoreline (in this case, the foundation of the lighthouse) and to protect the slope, as defense against erosion.

LAND ACQUISITION

In 1935, the state of Georgia donated 297.39 acres, including the east end of Cockspur Island and portions of the abandoned right-of-way of the Central Georgia Railroad on McQueens Island to Fort Pulaski National Monument. In 1936, Congress authorized a western boundary expansion to the U.S. Public Health Service Quarantine Station, currently adapted for monument administrative offices, and also authorized the Secretary of the Interior to accept donated land on McQueen and Tybee islands. This legislation permitted the construction of the South Channel Bridge and created a special reservation along the north shore of the island for the deposit of dredging materials by the U.S. Army Corps of Engineers. In 1939, the state of Georgia

deeded to Fort Pulaski National Monument, 5,000 acres of marshland on McQueens Island from Lazaretto Creek to the Tybee River to St. Augustine Creek increasing the monument's acreage to 5,623 acres.

CULTURAL RESOURCES

Background

This section describes the cultural resources within Fort Pulaski National Monument. Cultural resources include archeological resources, historic structures, cultural landscapes, and museum collections. Several archeological surveys and investigations have taken place at Fort Pulaski since the 1960s. These surveys have provided coverage of the monument and indicated the potential locations of archeological sites and provided information on the range of cultural resources and the likelihood of finding any additional archeological or historical sites.

Colonial Sites

A comparison of the 1766 map of Cockspur Island to those prepared by Robert E. Lee in 1830 and 1831 shows an island that had been reshaped considerably. The small hammock upon which Fort George was built in 1761 had been reduced to a mud flat by 1830. It is still possible, however, that remains of the fort may be buried in the mud at the southeastern end of Cockspur Island now that the island has regained some of its former shape (Prentice, 2006).

Although previous studies stated that Fort Greene, constructed from 1794 to 1795, was located on or near the same location as Fort George, a letter recently found at the National Archives dated July 26, 1842, indicates that the location was near the North Pier (Prentice, 2006).

If Fort Greene was in fact located in the northeastern portion of the construction village, remnants may remain buried beneath the ground surface between Battery Hambright and the North Channel Pier (Prentice, 2006).

Relocating the Lyford Pilot House on the easternmost hardwood hammock of Cockspur Island was attempted in 1999 without success. This site was probably washed away by the hurricane that destroyed Fort Greene in 1804. Comparing the 1758 and 1766 maps prepared by Henry Yonge and William De Brahm with Lee's 1830s maps shows that much of the southeastern portion of Cockspur Island was reduced to a mud flat (Prentice, 2006).

Archeological Resources

Below Ground Archeological Resources. Below ground resources associated with the construction of Fort Pulaski include remains of the construction village, roadways, and mortar batteries. Dredge spoil deposited on the north shore of the island by the U.S. Army Corps of Engineers has covered the archeological remains associated with the northern portion of the construction village. Additionally, by comparing the route of the dike system as it appeared on the 1843 Mansfield map with the route of the dike system today, it is likely that repairs to the dike system in the 1930s altered the original route in the area where the Laborers' Quarters and the Blacksmith Shop stood and covered their remains (Prentice, 2006).

Linear arrangements of brick and stone that, judging from their placement and alignment, correspond with the original South Channel Pier built during the fort's construction are visible on the island's marsh flats. Thus, although the South Channel Pier was washed away long ago, archeological remains are still preserved in place and are considered to be in good condition (Prentice, 2006).

In August 2004, ground penetrating radar was performed in an open area west of the visitor center parking lot. It appears that remnants of the Storm House, a kitchen, and one of the Mechanics' Quarters may be present below the ground surface (Prentice, 2006).

In 1999, limited archeological investigations were conducted in the vicinity of the brickwork thought to be associated with the residence occupied by the ordnance sergeant in the 1880s. This area was labeled as an oven on a 1936 CCC map. Artifacts observed during the excavation seem to corroborate that a building was located here, but additional archeological investigations will be needed to confirm these findings (Prentice, 2006).

Archeological Investigations. In October 1994, the Southeast Archeological Center conducted a noninvasive remote sensing survey to search for the graves of the Confederate prisoners of war interred at Fort Pulaski. The most probable location for the cemetery based on historic records is north of the demilune and moat near the visitor parking area. However, the results of the survey were inconclusive. None of the anomalies recorded and subsequently excavated revealed evidence of the graves (Prentice, 2006).

During repairs to the northern portion of the main ditch for mosquito control by Chatham County's maintenance staff in 1995, a Civil War refuse area was exposed. A team from the Southeast Archeological Center examined the exposed refuse area, which was interpreted as a dump used by Union forces while making repairs to the fort in 1862. This interpretation was based on the location of the refuse area and the presence of complete bottles rather than bottle fragments. The presence of whole Civil War bottles helped rule out the possibility that the refuse area was the result of CCC activities from the 1930s (Prentice, 2006).

In 1997, the Southeast Archeological Center conducted a survey of the dikes prior to rehabilitation to determine the original size, shape, and methods employed during construction of the dike in the 1830s. Two locations were chosen based on historic documentation that indicated they may not have been repaired over the years. Clearly visible in all profiles was a thin layer of oyster shell likely added to the top of the original dike during the CCC reconstruction. The soil used in the original construction and the original ground surface were found below this layer of oyster shell. The second location also showed evidence of repairs made by Fort Pulaski maintenance crews in the past 50 years (Prentice, 2006).

Extensive excavations of the cemetery occurred in 1999, leading to the complete delineation of its boundaries. Thirty-seven separate burials were identified. Of these, 19-21 lie in the general area of the documented Confederate section. Based on archival research and the 1999 excavations, it is felt that most of the Union troops who died during the Civil War were exhumed, and their cemetery plots were reused by civilians and post-Civil War military personnel (Prentice, 2006). In addition to the 37 burials, 5 areas of disturbance were identified. These disturbances probably had an impact on surrounding burials (Prentice, 2006).

In 1999, 80 shovel tests in the assumed vicinity of Fort George, Fort Greene, and the Lyford Pilot House failed to yield any positive proof of their location. Historic documentation indicates that the search for these particular sites should focus on the mud flats at the southeastern end of Cockspur Island for Fort George and the area around the North Channel Pier for Fort Greene. It seems unlikely that enough remains of the Lyford Pilot House to warrant further archeological investigation (Prentice, 2006).

In June, 2008, an archeological assessment of the foundation of the Cockspur Island Lighthouse was performed by archeologist R. Steven Kidd of the Southeast Archeological Center of the National Park Service. The assessment was performed prior to an emergency stabilization project on the foundation of the lighthouse due to severe infestation by marine borers and resulting damage to the wooden timbers that comprise the base of the lighthouse foundation. Desired results of the assessment included recording the construction methods and materials used in the lighthouse foundation and the collection and preservation of any

artifacts located during the project. The assessment successfully documented the foundational supports for the lighthouse and recorded the effects of marine borer damage on the supports. Very few artifacts were observed or recovered during the project. However there were a few glass and metal items (including a largely intact brass key) recovered that were associated with the operation of the lighthouse (Kidd, 2008).

Other Archeological Resources. In addition to the Fort Pulaski's list of classified structures, NPS Archeologist Guy Prentice in 2005 identified a number of sites that should receive investigation. Potentially, remains of Fort Greene could be located under mud near Battery Hambright along the north shore of Cockspur Island. An additional unidentified structure, possibly a barge, has been located protruding from the mud on the eastern end of Cockspur Island. Though not currently on NPS property, Prentice emphasizes the various World War II era military structures located on the western end of Cockspur Island as archeologically or historically valuable should the National Park Service gain control of the property.

The Tybee Knoll Lighthouse was built in 1879 on the western side of the island overlooking the South Channel Savannah River. Later, a boat house and keeper's house were constructed on the southwestern face of the island near the lighthouse, followed by a wharf in 1888 and an oil storage shed in 1893. The lighthouse was operated in conjunction with the Cockspur Island Lighthouse by the U.S. Lighthouse Service until the early 20th century (Meader and Binkley, 2003). The only extant structure is the brick oil storage shed. The keeper's house chimney foundation remains above ground. The site is not open to the public and is overgrown (Hitchcock, 2009).

Museum Collections

Fort Pulaski National Monument has an extensive museum collection with the majority of the collection housed on site. A modern super insulated storage facility consisting of a "Bally" building built into one of Fort Pulaski's casemates with an attached heat pump is used to regulate the temperature and humidity of stored museum pieces.

David Libman, National Park Service

TYBEE KNOLL OIL SHED SIDE VIEW

Dehumidifiers and ceiling fans are additionally used to regulate humidity in areas of Fort Pulaski containing artifacts not stored in the "Bally" building. The current *Collection Management Plan for Fort Pulaski National Monument* was completed in 1995 and provides details on more extensive collection management measures (Lang, 1993).

Currently the museum collection at Fort Pulaski National Monument includes 35,979 archeological, historical, and archival objects. The archeology collection includes 1,791 objects. A history section is comprised of 580 objects. The archival collection contains 33,600 items. The Southeast Archeological Center manages one archeological item and ten archival items for Fort Pulaski National Monument (Lang, 1993).

Under the approved *Southeast Region Museum Collection Curatorial Facility Plan*, May 2006, Fort Pulaski's museum collections will be collocated with the collections of Fort Frederica and Ocmulgee National Monuments in Macon in a facility associated with Ocmulgee (new, rented, or revamped existing facility —the details of the facility and the operations have not been developed). This will allow the "Bally" building to be removed from the fort and the collections stored away from the coast to mitigate

damage from potential natural disasters such as hurricanes.

Historic Structures

This evaluation of historic structures is taken from Fort Pulaski's list of classified structures. The list is an evaluated inventory of all historic and prehistoric structures within the monument boundary that have historical, architectural, and/or engineering significance. The list is evaluated or "classified" by the National Register of Historic Places criteria. Structures are constructed works that serve some form of human activity and are generally immovable. They include buildings and monuments, dams, millraces and canals, nautical vessels, bridges, tunnels and roads, railroad locomotives, rolling stock and track, stockades and fences, defensive works, temple mounds and kivas (ceremonial structures that are usually round and partially underground), ruins of all structural types that still have integrity as structures, and outdoor sculpture. Table 9, sorted by significance level, lists the various structures.

Historic American Building Survey

Fort Pulaski Southwest Angle

TABLE 9. LIST OF CLASSIFIED STRUCTURES

Catalog Number	Name	Significance Level
HS-09	Dike	Contributing
HS-10	Canal Lock	Contributing
HS-11	Feeder Canal	Contributing
HS-2A1	Cistern No. 5 (Ruin)	Contributing
HS-2A2	Cistern No. 4	Contributing
HS-2A4	Cistern No. 1	Contributing
HS-2A6	Cistern No. 2	Contributing
HS-2A7	Cistern No. 3	Contributing
HS2B3	Cistern No. 6	Contributing
HS2B5	Stones from Cistern (ruin)	Contributing
HS-03	North Pier (Ruin)	Local
HS-06	Residence	Local
HS-2A3	Brick Foundation Ruin at Cistern No. 4	Local
HS-2A5	Brick Foundation Ruin at Cistern No. 3	Local
HS2B4	Cistern No. 7	Local
HS-01	Fort Pulaski	National
HS-07	Moat	National
HS-08	Demilune	National
CS-01	John Wesley Memorial	Not Significant
HS-13	Lieutenant Robert Rowan Grave Stone	Not Significant
HS-14	Sellmer, Charles Howard, Grave Marker	Not Significant
HS-04	Cockspur Island Lighthouse	State
HS-05	Battery Horace Hambright	State

Dike. The dike, which allowed the island to be drained, was essential to the construction of Fort Pulaski. This historic engineering structure is directly associated with Robert E. Lee, who designed it. The dike is an earthen structure approximately 4–5 feet above grade with an irregular circumference of 2 miles.

Canal Lock. The canal lock controls water flow between the moat and the feeder canal and kept tidal flooding out. This is also part of the water control system designed by Robert E. Lee. Water from the canal enters this arched brick tunnel, containing a tide gate, just before it enters the moat. The tunnel is flanked by brick retaining walls; the dimensions are 51 feet by 77 feet. A metal valve handle that controls the gate lies just north.

Feeder Canal. The feeder canal is an engineering structure that provides water to the fort's moat and is part of the water control system designed by Robert E. Lee. The canal is approximately 2,000 feet long and runs south from the moat to the South Channel Savannah River. The canal banks are earthen except near the moat, where there are brick retaining walls.

Cistern No. 5 (Ruin). This cistern, one of several that supplied water to laborers living onsite during the construction of Fort Pulaski, is significant as an example of early 19th century utilitarian structure. These are

the remains of a 15-foot diameter round cistern. Visible on the ground surface are pieces of the stone cistern cover.

Cistern No. 4. This cistern, associated with the post-construction history of Fort Pulaski is significant as a 19th century utilitarian structure. The 14.67-foot diameter brick cistern has been filled with sand. No trace of cistern cover is visible.

Cistern No. 1. This cistern, one of several that supplied water to laborers living onsite during the construction of Fort Pulaski, is significant as an example of early 19th century utilitarian structure. The structure is a 9 feet diameter circular brick cistern with a cement coating on the brick and a sandstone cap. The cistern rises approximately 4 feet above grade.

Cistern No. 2. This cistern, one of several that supplied water to laborers living onsite during the construction of Fort Pulaski, is significant as an example of early 19th century utilitarian structure. The structure is a circular brick cistern 9 feet in diameter with a sandstone cap. The cistern rises approximately 3 feet above grade, is filled with sand, and exhibits the remains of a cement coating over the brick.

Cistern No. 3. This cistern, one of several that supplied water to laborers living onsite during the construction of Fort Pulaski, is significant as an example of early 19th century utilitarian structure. The structure is a circular brick cistern, 13 feet in diameter, with a smaller, square opening set into the top. Portions of the stone cap remain along with remnants of a cement coating on the brick.

Cistern No. 6. This cistern, one of several that supplied water to laborers living onsite during the construction of Fort Pulaski, is locally significant as an example of early 19th century utility structure. The structure is a large brick, stone, and mortar cistern approximately 12 feet in diameter and 2 feet high. The cistern head is a rectangular brick box (5 feet by 5 feet) with a 3-foot square opening.

Stones from Cistern (Ruin). Apparently pieces of the cover of a cistern.

North Pier (Ruin). This was the first structure built in association with Fort Pulaski and was the receiving point for materials used in the fort's construction. The ruins consist of approximately 20 feet by 10 feet of a 200-foot long, L-shaped granite pier. Portions of the side walls, with some iron hardware, end in the remains of a tabby end wall. Granite pavers that once supported iron tracks for cannon carriages at the fort have been relocated to the end of the pier.

Residence. The residence is locally significant for architecture and its association with the U.S. Public Health Service Quarantine Station on Cockspur Island. Remodeled and used by the Navy as officer's quarters during World War II, the interior contains many historic features and materials from that period. In 1998, the building underwent numerous alterations that together gave the building a new appearance. These included the addition of double-hung windows to part of the porch and construction of a wide, straight flight of stairs to the east porch that never existed during the historic period. In addition, the exterior siding and porthole windows installed by the Navy to enclose the elevated foundation were removed and replaced with plywood and lattice, another feature that was never present during the historic period. The structure has been adapted for monument headquarters offices, which is its current use.

Brick Foundation Ruin at Cistern No. 4. This ruin, associated with a cistern for workers on Fort Pulaski, is significant as an example of an early 19th century utilitarian structure. The ruin is a rectangular brick platform 51 inches by 63 inches and rising approximately 12 inches above grade.

Brick Foundation Ruin at Cistern No. 3. This ruin, which is associated with a cistern that supplied water to the construction

village during the construction of Fort Pulaski, is significant as an early 19th century example of a utilitarian structure. The structure is a rectangular brick platform (85 inches by 76 inches) rising 24 inches above grade at its highest point and filled with sand. It may have supported a pump or other equipment associated with the cistern.

Cistern No. 7. This cistern, one of several that supplied water to the laborers who lived onsite during the construction of Fort Pulaski, is locally significant as an intact example of a 19th century utility structure. The structure is a large stone, brick, and mortar cistern with pedestal and head. The pedestal is comprised of large stones and is approximately 5 feet by 10 feet. The cistern head is an open, rectangular box made of mortared brick and measures approximately 4 feet by 3 feet and 1-foot high.

Fort Pulaski. Fort Pulaski was a pivotal link in the Third System of U.S. coastal defenses. The fort's reduction by new rifled artillery during the Civil War in April 1862 ended the era of impregnable masonry forts. The completed two tier structure is an irregular pentagon that faces east. The circumference of the fort is 1,508 feet with sides of approximately 350 feet surrounded by a wet moat. The walls are 32 feet high and 7 feet to 11 feet thick. The fort contains 64 vaulted casemates and 54 gun mounts on the terreplein. The fort includes two powder magazines and a parade ground about the size of a football field. Local brownish "Savannah Gray" brick is found in the lower walls. The rose red brick is from Baltimore, Maryland, and Alexandria, Virginia. The latter is harder than the "Savannah Grays" so is used in the arches and embrasures.

Moat. The wet moat was part of the original system of fortifications at Fort Pulaski. The moat is 32 feet to 48 feet wide and 7 feet deep surrounding Fort Pulaski and its demilune. The moat walls are brick.

Demilune. Part of the original system of fortifications at Fort Pulaski, the demilune was substantially redesigned in 1872 from a flat walled ground to a system of earthen mounds containing magazines. The triangular demilune consists of a network of four magazines, gun emplacements, and connecting passages with oyster shell-imbedded concrete walls protected by the earthen mounds.

John Wesley Memorial. The memorial marks the traditional site of the first American religious service conducted by John Wesley, founder of Methodism. It was erected by the Georgia Society of the Colonial Dames, an important historic preservation group. The memorial is a 15-foot high square column with a limestone base, a brick shaft in Flemish bond, and a limestone cap surmounted by a limestone cross, all set on a square of slate tiles. The base, cap, and a limestone plaque on the shaft carry inscriptions.

Lieutenant Robert Rowan Grave Stone. This is the grave of an officer stationed at Fort Greene, an early 19th century fort on an island that is no longer extant. The marker was moved from the site of Fort Greene to its present location. The marker consists of a marble monument (18 inches wide by 26 inches high) with an inscription and a cut top.

Sellmer, Charles Howard, Grave Marker. This is the grave of the infant son of Lieutenant Charles Sellmer and Marion Sellmer, stationed at Fort Pulaski in 1872. The grave has no significant association with the history of Fort Pulaski. The marker consists of a marble monument (10 inches wide by 2 inches deep by 24 inches high) with an inscription.

Cockspur Island Lighthouse. The Cockspur Island Lighthouse sits on an islet at the mouth of the South Channel Savannah River. It is significant for its association with an era of coastal navigation and its embodiment of a specialized architectural type. The structure originally housed a whale oil lamp; it was converted to a harbor beacon in 1909. Its use was discontinued in 1949. The lighthouse is a tapered brick tube, 16 feet in diameter and 46 feet high, with corbelled brick cornice. There

is an exterior brick stair fanlight door at the first landing. An interior spiral brick stair leads to the second landing. A wooden stair leads to the third landing, which supports the iron lantern house. The lighthouse foundation is threatened by years of erosion from storms and the active shipping channel that have lowered the height of the island and removed previous revetment causing the island to be underwater at all times except low tide. This exposes the wooden platform that supports the masonry foundation sits on to shipworm infestation that can compromise and eventually destroy the platform. This threat is current and loss could occur within a matter of years.

Battery Horace Hambright. This 1895 battery was part of the Endicott or Fourth Seacoast Defense System and was manned during the Spanish-American War. Named for Lt. Horace Hambright, it is representative of U.S. defensive architecture of the period. The battery is a steel-reinforced concrete structure with overall dimensions of 100 feet by 50 feet by 15 feet high. At ground level are three magazines with two gun emplacements above. The battery's north face is covered by a grassed earth berm.

Ethnographic Resources

Although no formal ethnographic overview and assessment or other major ethnographical research has been accomplished for Fort Pulaski National Monument, research by Dr. Charles J. Elmore (*General David Hunter's Proclamation: The Quest for African-American Freedom Before and During the Civil War*) and other records demonstrate that there are traditional attachments and connections between the African American community in the Savannah, Georgia area and Fort Pulaski National Monument. These connections include the use of slaves in the construction of the fort, General David Hunter's emancipation proclamation, the use of the fort as a stop on the Underground Railroad, and the use of the fort as a haven for freed and escaped slaves subsequent to the capture of Fort Pulaski by Union forces in April of 1862. Many black men were employed as boatmen, carpenters, and general laborers at Fort Pulaski in the years immediately after the Confederate surrender of the fort. Finally, the story of the "Immortal 600" resonates today among those whose ancestors fought on the side of the Confederacy and those who continue to study and work in the area of prisoners of war. (In October 1864, Union troops stationed at Fort Pulaski accepted transfer of a group of imprisoned Confederate officers who later became known as the Immortal 600. During their incarceration at Fort Pulaski, 13 prisoners died. The dead were buried on site at Cockspur Island, Georgia. Most died of dehydration due to dysentery. March 1865, prison survivors were sent to Fort Delaware where conditions were somewhat better than at Fort Pulaski.)

Cultural Landscapes

The area defined by the Cockspur Island Historic District is the site of Fort Pulaski, whose massive brick walls, backed by heavy piers, and casemated rooms reflected the continuing search for security against increasingly large caliber smoothbore cannon of the period. The best military engineering principles and the finest joinery and masonry techniques of the day were used in its construction (Hitchcock, 2009).

The overarching treatment associated with the historic landscape is preservation of all identified resources. Restoration has been applied to a select number of features, primarily the restoration of the open character of the landscape to more accurately reflect the conditions at the time of the April 1862 battle and to provide the visitor with a greater understanding of the siege and reduction of Fort Pulaski (Hitchcock, 2009).

Specific aspects of the cultural landscape described by Hitchcock in 2009 at Fort Pulaski National Monument include the following: