Spanish-American War Battery

Cultural Landscape Report

Cultural Resources, Partnerships and Science Division
Interior Region 2
Spanish-American War Battery
Timucuan Ecological and Historic Preserve
Florida

Cultural Landscape Report

95% DRAFT – December 2020

Prepared by:
Panamerician Consultants, Inc.
2390 Clinton Street
Buffalo, New York 14227-1735

Wiss, Janney, Elstner Associates, Inc.
330 Pfingsten Road
Northbrook, Illinois 60062

Liz Sargent HLA
1855 Winston Road
Charlottesville, Virginia 22903

Prepared for:
National Park Service
Interior Region 2
100 Alabama Street SW
Atlanta, Georgia 30303
This manuscript has been authored by Panamerican Consultants, Inc., with consultants Wiss, Janney, Elstner Associates, Inc., and Liz Sargent HLA under Contract Number IDIQ P16PC00097 with the National Park Service. The United States Government retains and the publisher, by accepting the article for publication, acknowledges that the United States Government retains a non-exclusive, paid-up, irrevocable, worldwide license to publish or reproduce the published form of this manuscript, or allow others to do so, for United States Government purposes.
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Foreword

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Celinda Hicks, Contracting Officer
David Hasty, Historical Landscape Architect and Contracting Officer’s Representative
Barbara Judy, Branch Chief, Cultural Resources Planning and Stewardship
Jami Hammond, Regional Environmental Coordinator

National Park Service – Timucuan Ecological and Historic Preserve

Chris Hughes, Superintendent
R. Steven Kidd, Chief of Science and Resource Management
Morgan Baird, Cultural Resources Manager
Joshua Salestrom, Cultural Resources Specialist

Panamerican Consultants, Inc.

Mark Steinback, Project Team Leader and Editor
Christine Longiaru, Architectural Historian
Don Smith, Archeologist

Wiss, Janney, Elstner Associates, Inc.

Deborah Slaton, Historian/Conservator
Sean Barron, Intern Preservation Engineer
Tim Penich, Historical Architect
Jane Jacobs, Historical Landscape Architect
Christina Osborn, Historic Preservation Specialist
Kenneth Itle, Historical Architect
Abby Valek, Intern Historical Architect

Liz Sargent HLA

Liz Sargent, Historical Landscape Architect
Jen Trompetter, Landscape Architect
Introduction

The Spanish-American War Battery that is the focus of this study was erected in April 1898 to protect the mouth of the St. Johns River against the Spanish fleet during tensions between the United States and Spain that resulted in the Spanish-American War of 1898. The battery, which consists of two concrete gun emplacements and a munitions magazine, was built to emplace two 8-inch breach-loading rifles on a strategic river bluff to protect Jacksonville, Florida, from naval attack (Figure 1). Following the end of the conflict, the battery was decommissioned, and the guns were sent to Pensacola.¹ The concrete battery

Management Summary

The Spanish-American War Battery that is the focus of this study was erected in April 1898 to protect the mouth of the St. Johns River against the Spanish fleet during tensions between the United States and Spain that resulted in the Spanish-American War of 1898. The battery, which consists of two concrete gun emplacements and a munitions magazine, was built to emplace two 8-inch breach-loading rifles on a strategic river bluff to protect Jacksonville, Florida, from naval attack (Figure 1). Following the end of the conflict, the battery was decommissioned, and the guns were sent to Pensacola.¹ The concrete battery

¹ For more information, please see documentation of the Spanish-American War Battery prepared by the Historic American Buildings Survey (HABS). Library of Congress, Prints & Photographs Division, HABS, Reproduction No. FL-15-2 (FL 0161); and Barbara P. Prettyman, “8DU00124 Spanish-American War Battery
survives in relatively good condition and continues to convey its historic associations with military coastal defense strategy related to the position’s commanding views of the St. Johns River; although the views associated with the artillery field of fire would have been maintained while in military use, the view from the bluff today is partially obscured by woody vegetation (Figure 2).

The battery lies within Timucuan Ecological and Historic Preserve, a unit of the National Park System that protects, manages, and interprets one of the last unspoiled Atlantic coastal wetlands, including areas with cultural resources, many of which are listed in the National Register of Historic Places (NRHP). In addition to inland waterways, wetlands, an extensive estuarine system of salt marsh, coastal hammock, and marine and brackish waters, the 46,000-acre preserve encompasses nearly 200 archeological sites and a varied collection of historic buildings and structures and cultural landscapes associated with over 6,000 years of human habitation in the area.

The Spanish-American War Battery occupies an undeveloped parcel within a residential neighborhood where property affording views of the river is desirable (Figure 3). The importance of the Spanish-American War Battery as an intact example of an Endicott-era coastal defense battery has long been recognized. In 1934, the property was recorded by the Historic American Buildings Survey (HABS) due to its historic importance. In 1990, the National Park Service (NPS) indicated acquisition of the property for inclusion in Timucuan Ecological and Historic Preserve as a goal in the park’s 1990 General Management Plan (GMP). This goal was supported by the North Florida Land Trust (NFLT), which began working toward protection of the property during the late twentieth century, with the intention of conveying the tract to the federal government as possible. Following several years of fund raising, the NFLT and the City of Jacksonville secured sufficient funds to purchase the battery parcel in 2016. Timucuan Ecological and Historic Preserve accepted the deed for the property from the NFLT in a ceremony on December 14, 2018. The NPS administers the battery parcel as part of the Timucuan Ecological and Historic Preserve, and plans to provide access to the public once appropriate improvements and preservation management protocols have been developed.

In support of this goal, the NPS engaged a consultant team of preservation professionals to prepare a Cultural Landscape Report (CLR) for the Spanish-American War Battery property. The consultant team engaged to prepare the CLR was the Spanish-American War Battery to the St. Johns River are partially blocked by tree cover, 2019.

FIGURE 2. Views from the top of the bluff adjacent to


led by Panamerican Consultants, Inc. (Panamerican) of Buffalo, New York, and included Wiss, Janney, Elstner Associates (WJE) of Northbrook, Illinois, and Liz Sargent HLA, of Charlottesville, Virginia.

In preparing the CLR, the team conducted an in-depth review of available management guidance and documentary sources related to the history and administration of the property, documented existing conditions, and evaluated the property’s National Register of Historic Places significance, while also assessing its integrity. In addition, the team worked with the park to determine goals for preservation, visitor access, vegetation management, and interpretation. Based on these goals, the team prepared treatment guidelines and recommendations designed to address the specific needs and concerns of the NPS related to the Spanish-American War Battery. The treatment plan provides a conceptual design alternative for parking, trails, planting, clearing, signage, and other site furnishings intended to support park goals of stewardship and carefully considered public access.

Future implementation of the CLR treatment plan is supported through an accompanying Environmental Assessment (EA), included as Appendix A of the CLR. The EA meets compliance review requirements under the National Environmental Policy Act (NEPA) while addressing any and all impacts to natural and cultural resources anticipated to result from implementation of visitor access and site management recommendations provided in the CLR.

Historical Summary

The Spanish-American War Battery is located on St. Johns Bluff on the south side of the St. Johns River. The river’s importance has been recognized for its strategic military and economic value beginning centuries ago, first by American Indians and then later by Europeans and Americans.2 St. Johns Bluff has been the site of five fortifications over a period spanning more than three centuries, beginning in 1564 with Fort Caroline from the short-lived French occupation of northeast Florida. Constructed by the US government in 1898 during the Spanish-American War, the permanent concrete gun emplacement represents the last defensive work built on the bluff.

René Goulaine de Laudonnière (circa 1529–1574) established the French Huguenot settlement of Fort Caroline on St. Johns Bluff. When Europeans first encountered St. Johns Bluff, the river bank sloped down westerly into a little plain occupying a cove between the bluff’s eastern point and the hamlet of Fulton. The French called this land feature “Vale of Laudonnière.”3 A fort was built on the plain at the water’s edge to the northwest of the future Spanish-American War Battery site. On September 20, 1565, the Spanish captured Fort Caroline and renamed it Fort San Mateo.

By treaty in 1763, Great Britain acquired Florida from Spain in exchange for Havana, Cuba, and assumed control of the territory in the following year. During the Revolutionary War, in anticipation of an American invasion in May 1777, British troops fortified Hester’s Bluff, current St. Johns Bluff, with cannon.4 The placement of this battery may have been the first effort by the British to fortify St. Johns Bluff.5 Since Florida was not included as part of the new United States, British loyalists fled to the area after the war during the summer and fall of 1782. The loyalists erected frame houses with detached kitchens and other

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4. Stowell, 134.
5. Ibid.
structures, A small force of British regulars remained at St. Johns Bluff until Spain officially took over Florida in 1785 as part of the settlement agreement ending the American Revolution. The British residents dismantled parts of their village called St. Johns Town and abandoned their estates along the river. Later, the treaty for the transfer of Florida by Spain to the United States was ratified in February 1819, with the formal transfer occurring in 1821.

On April 17, 1861, Florida joined the Confederate States of America. Coastal defensive works were built in northeast Florida on Amelia Island, Talbot Island, and St. Johns Bluff. In summer 1862, batteries were emplaced on St. Johns Bluff to prevent Union gunboats from advancing upstream on the river. The St. Johns Bluff Confederate earthworks consisted of two twelve-pounder rifle guns and two eight-inch howitzers. Several engagements between this battery and Federal gunboats transpired over the next few weeks. Federal troops ultimately seized the battery, destroying its magazines and defense works.

The general demobilization and years of reduced military appropriations following the conclusion of the Civil War led to concerns about the ability of the United States to defend itself during a time when the United States sought to expand its influence overseas. In 1885, President Grover Cleveland organized a joint army, navy, and civilian board headed by Secretary of War William C. Endicott to assess the state of the nation’s coastal defenses. A comprehensive modernization program of harbor and coastal defenses, known as the Endicott System, was implemented. The Endicott System (1890-1905) emphasized weapons over structures, unlike previous coastal defense systems. The US Army Corps of Engineers initiated a modest construction program in 1890.

On January 24, 1898, the United States sent the USS Maine from Key West to Havana to protect American interests in Cuba. The USS Maine exploded in Havana harbor on February 15, resulting in the loss of 260 American sailors. Five days after the sinking of the Maine, Florida Governor William D. Bloxham directed the Jacksonville Naval Militia to conduct a detailed reconnaissance of the Atlantic coast as practical to locate proper sites for signal stations and to obtain any other relevant data from a strategic military standpoint. The governor’s directive was one of the earliest set of military orders issued by any state before the Spanish-American War.

The State of Florida, similar to other coastal states, urged the US Congress to provide protection from potential attacks by the Spanish fleet. In the case of Jacksonville, the port had served as a key source of supplies for Cuban rebels. Brigadier General John M. Wilson, Chief of Engineers, visited Jacksonville

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7. Stowell, 135.
10. HABS, 3.

13. Ibid.
16. Buker, 8; Davis, 208.
17. Buker, 8.
on March 6, 1898, to inspect the river’s jetties without indicating whether or not there were plans to defend the river. Jacksonville citizens had preselected St. Johns Bluff as the site for the fortifications and obtained the landowners permission for construction. Two modern, rapid-fire five-inch guns, a secondary battery of other guns, and mines were initially planned for the St. Johns River.

As a defensive post, St. Johns Bluff offered one of the highest elevations along the river corridor and a strategic location near the mouth of the river. However, the undeveloped bluff lacked transportation infrastructure. A site along the river below the northeast corner of the bluff was selected for a wharf, or the US Dock. Work commenced on harbor defense on April 11, 1898, when John M. Cook led his civilian laborers to St. Johns Bluff to clear the underbrush. By mid-April, a roadway from the riverbank to the bluff had been cleared, and the wharf was completed.

In the years leading up to World War I, the United States reassessed its seacoast defense system as the Endicott-style battery was functionally obsolete. The War Department evaluated St. Johns River, and it determined there was no major naval military threat to Jacksonville. On March 4, 1923, Congress authorized the sale of St. Johns Bluff.

Arthur Tilman Williams, president of the Florida Realty Investment Corporation, entered into a contact with the government to purchase the St Johns Bluff military reservation for $53,839.38. No development had occurred within the military reservation during first period of private ownership.

During World War II, St. Johns Bluff-Ft. Caroline, Inc. adopted and dedicated their surveyed plat map of St. Johns Bluff Estates subdivision to Duval County. The original plat for St. Johns Bluff Estates consisted of 82 parcels laid out on both sides of Fort Caroline Road, a 100-ft wide two-lane road. In January 1945, Duval County approved the plat for St. Johns Bluff Estates subdivision. By 1947, Fort Caroline Road had been completed on St. Johns Bluff as an improved dirt road. The NPS established Fort Caroline National Memorial and selected a permanent site for the Ribault Monument on St. Johns Bluff. Residential development continued in St. Johns Bluff Estates near the Spanish-American War Battery in the 1950s and 1960s.

In 1988, with the creation of Timucuan Ecological and Historic Preserve by Public Law 100-249, the Secretary of the Interior was authorized to preserve certain wetlands and historic and prehistoric sites in the St. Johns River valley. The Spanish-American War Battery was identified in the legislation as one of the original eight “sites of significant historical interest.” The NPS had expressed interest in the privately-owned parcel after the establishment of the preserve, though the property remained privately owned until into the twentieth-first century.

The land containing the battery continued to be undeveloped and overgrown in the early twenty-first century. In 2015, the NPS and the NFLT began collaborating to save the Spanish-American War Battery site. The NFLT purchased the Spanish-American War Battery site the following year through the financial support of the City of Jacksonville, a $100,000 challenge grant from the Delores Barr Weaver Fund, and numerous

18. Buker, 9; The Florida Times-Union & Citizen, March 7, 1898.
20. Ibid., 12.
22. Ibid., 43.
23. Ibid., 43.
On December 14, 2018, the NFLT transferred the title for the property containing the Spanish-American War Battery to the NPS, becoming a component of the Timucuan Ecological and Historic Preserve.

Scope of Work and Methodology

Scope of Work

Cultural Landscape Reports serve as the principal treatment documents and primary tools for long-term management of cultural landscapes. Treatment and management decisions related to the physical features, biotic systems, and use of the cultural landscape are guided by the comprehensive documentation, analysis, evaluation, and establishment of preservation goals presented in a CLR.

The CLR for the Spanish-American War Battery is intended to provide park management with an assessment of the character-defining features of the cultural landscape and specific treatment recommendations designed to ensure the preservation of these significant resources. At the same time, the CLR is intended to guide appropriate development of new infrastructure sufficient to accommodate visitors in the future. The treatment guidelines, recommendations for specific treatment projects, and implementation strategies provided in the CLR identify and prioritize the actions needed to ensure resource preservation while addressing contemporary park use and management concerns.

The statement of work provided to the project team by the NPS identifies the following tasks to be completed in support of the CLR:

- Conduct primary research and retrieval of military archival records, including plans, photographs, correspondences, and military reports, from the National Archives, including Record Group 77 as referenced in a report prepared in 1989 by George Buker. Records of interest were those related to military use of the site, particularly pertaining to the Endicott Era.

- Describe the historical development of the study area landscape from precontact eras to the modern day.

- Identify all landscape features on the property, organized by landscape characteristic.

- Document existing site conditions.

- Provide analysis of the landscape’s National Register of Historic Places significance and integrity.

- Determine the primary period of significance and identify other potential periods of significance.

- Identify and address all primary treatment needs, which would include: preservation of the historic resources, particularly the battery, which is experiencing condition issues with the concrete; pedestrian and vehicular circulation for visitor / park use; parking for cars and oversized vehicles; identification and protection / restoration of significant views and vistas; interpretive facilities, such as kiosks or shade structures; visitor safety; potential connection to city / regional trail systems; and access control.

- Provide cost estimates and implementation guidelines for proposed landscape treatment, mitigation, and archeological survey.

- Provide draft project statements for entry into the Project Management Information System (PMIS) by park staff.

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27. Ibid.”
Provide a Facility Management Software Systems (FMSS) location and asset hierarchy, and information that could be used to generate work orders for the property through collaboration with park facilities staff.

**Methodology**

The CLR for the Spanish-American War Battery was prepared in accordance with the guidance offered in the most recent versions of various federal standards documents, such as:

- **A Guide to Cultural Landscape Reports: Contents, Process, and Techniques**
- **The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes**
- **NPS Director's Order 10A: Design and Construction Drawings**
- **NPS Director's Order 28: Cultural Resources Management**
- **NPS Director's Order 77—Reference Manual 77: Natural Resource Management**
- **NPS-SER-82, Biotic Cultural Resources: Management Considerations for Historic Districts in the National Park System, Southeast Region**
- **Americans with Disabilities Act Accessibility Guidelines (ADAAG) and Architectural Barriers Act Standards (ABAS)**
- **The National Park Service's Guiding Principles of Sustainable Design**
- **National Register Bulletin: How to Apply the National Register Criteria for Evaluation**
- **National Register Bulletin: Guidelines for Identifying, Evaluating, and Registering America’s Historic Battlefields**
- **National Register Bulletin: Guidelines for Documenting and Evaluating Rural Historic Landscapes**
- **National Register Bulletin, Telling the Stories: Planning Effective Interpretive Programs for Properties Listed in the National Register of Historic Places**

The methodology used to prepare each component of the CLR is described below.

**Background Research and Data Collection**

Prior to the project kick-off meeting held at the park in July 2019, CLR project team members began to collect documents and other materials pertaining to the project and the site, including archival documentation available online through the Library of Congress, and reports and studies prepared previously about the property, such as George Buker’s *Spanish-American War Fortifications, St. Johns Bluff, Florida* (1989). The team also collected materials available electronically from the Integrated Resource Management Applications (IRMA) Portal and the History eLibrary, such as a 1996 *Historic Resource Study for Timucuan Ecological and Historic Preserve*. The park provided the team with several property records and a determination of eligibility during the data collection period as well.

In preparation for field investigations, the team requested mapping data available from the NPS in GIS and began preparing base maps for use in developing the project.

**Start-up Meeting**

On July 9, 2019, project team members from WJE and Liz Sargent HLA met on site with park and regional NPS personnel to initiate work on the CLR. Present at the park during the meeting were:

- **David Hasty, Historical Landscape Architect and Contracting Officer’s Representative**
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Timucuan Ecological and Historic Preserve

- Morgan Baird, Cultural Resources Manager
- Joshua Salestrom, Cultural Resources
- Wiss, Janney, Elstner Associates, Inc.
- Deborah Slaton, Historian/Conservator
- Jane Jacobs, Historical Landscape Architect and EA Specialist
- Sean Barron, Intern Preservation Engineer
- Liz Sargent HLA
- Jen Trompetter, Landscape Architect

Project manager Mark Steinback and historian Christine Longiaru from Panamerican Consultants, Inc., in addition to historic preservation specialist Christina Osborn, joined the meeting by conference line, along with NPS regional personnel Barbara Judy (Branch Chief, Cultural Resources Planning and Stewardship) and Jami Hammond (Regional Environmental Coordinator). Also on the call was NPS cultural resource specialist and archeologist R. Steven Kidd, who was soon to join Timucuan Ecological and Historic Preserve as Chief of Science and Resource Management.

The meeting focused on several topics, including research materials available for review by the team during the site visit; field investigation procedures; lines of communication; coordination of the CLR and EA; and the project schedule.

During the meeting, park personnel also conveyed specific issues to be considered by the CLR, including:

- Access and parking
- Trail development and accessibility
- Vegetation management

- Views and vistas
- Wayside exhibits and other interpretive aids
- Proper management and preservation policies regarding historic structures

Field Investigations

Following the start-up meeting, the team conducted initial field investigations with the assistance of park personnel. Over the course of two days, team members photographed cultural and natural resources, refined the preliminary base maps, and recorded location, materials, dimensional, and condition information related to natural and cultural landscape features (Figure 4).

![Figure 4. View of team members conducting field investigations with National Park Service personnel, 2019.](image)

Historical Landscape Documentation and Site History

CLR project team members also conducted research at the park during the July 2019 site visit. The focus of research was compiling and reproducing all materials related to the battery available at the park.

As part of a separate trip, project historian Christine Longiaru conducted research at the National Archives in Washington, DC. As stipulated in the statement of work, Ms. Longiaru assembled copies of all materials available in Record Group 77 related to the Spanish-American War Battery.

Using these and all other available historic records, Ms. Longiaru prepared the Site History section of
the CLR, which comprises chapter two of the study. The Site History is organized chronologically into a series of discrete historic periods, each illustrated with historic photographs, maps, and period plans that depict the evolution of the property over time.

**Historic Period Plans**

The CLR team prepared period plans in support of the Site History. These cartographic diagrams depict the Spanish-American War Battery property in a series of snapshot moments in history. The period plans are rendered at a consistent scale to facilitate comparison of site development and conditions over time. The period plans were prepared using GIS mapping data provided by the NPS and are thus compatible with other mapping in the CLR. Sources referenced in developing the period plans included archival maps, narratives, and aerial photographs.

**Existing Conditions Documentation**

The CLR project team documented the existing conditions of the Spanish-American War Battery property through compilation of base mapping, data collected during field investigations, and review of park planning documents, park files, and other available cultural and natural resource documents. The existing conditions documentation, which comprises chapter three of the study, includes cross-referenced narrative, graphic, and photographic information organized in accordance with the framework established in the NPS *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques*. Sections describing the environmental and cultural context for the property introduce the site-specific existing conditions documentation. This context information is followed by resource descriptions arranged by the following landscape characteristics:

- Natural systems and features
- Topography
- Spatial organization
- Land use
- Circulation
- Vegetation
- Buildings and structures
- Views and vistas
- Small-scale features
- Archeological sites

For each landscape characteristic, the team prepared an inventory of the features present on the property.

**Evaluation of Significance**

The CLR includes an evaluation of the significance of the property based on National Register of Historic Places criteria. The evaluation draws from a Preliminary Site Information Questionnaire prepared for the property by NPS cultural resource staff, and the March 4, 2019, concurrence of the Florida Department of State Division of Historical Resources regarding the eligibility of the property for listing in the National Register of Historic Places. The significance evaluation prepared for the CLR was based on the guidance provided in the National Register Bulletin, *How to Apply the National Register Criteria for Evaluation*. The evaluation also identifies a period during which the property appears significant.

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To better understand the relationship between the existing landscape and the character of the landscape during the period of significance identified in the CLR, the project team prepared a comparative analysis of historic and existing landscape conditions. The three primary goals of the comparative analysis are to:

- Understand which features survive from the period of significance;
- Establish the basis for an integrity assessment; and
- Provide an understanding of the similarities and differences between historic and existing conditions that supports the development of treatment recommendations.

The comparative analysis identifies character-defining elements of the landscape and the features that appear to contribute to its significance as a National Register-eligible property. For purposes of this study, contributing features are defined as those landscape resources surviving from the proposed period of significance with integrity that can also be tied to the property’s significant historic contexts. Non-contributing features are defined as those landscape resources originating after the proposed period of significance, or having lost integrity, or not associated with the property’s significant historic contexts. Also identified in the comparative analysis are features known to have existed historically but are no longer extant in the landscape today.

**Assessment of Integrity**

The CLR assesses the overall integrity of the Spanish-American War Battery property in accordance with the seven aspects—location, design, setting, materials, workmanship, feeling, and association—discussed in the National Register Bulletin, *How to Apply the National Register Criteria for Evaluation*. Integrity is assessed in order to determine whether the characteristics and features that defined it during the period of significance are present, retain their historic qualities, and convey their historic associations. Historic landscapes must retain integrity in order to be eligible for listing in the National Register of Historic Places.

**Treatment Plan**

The CLR culminates in a treatment plan that provides preservation strategies and specific recommendations for the long-term management of the cultural landscape based on its significance, existing condition, and use. The CLR treatment plan includes a discussion of the overall management objectives for the historic landscape as documented in planning studies or other management documents. The treatment plan provides design concepts for accommodating proposed new uses, such as access and interpretive improvements supporting NPS goals of allowing public visitation.

The treatment plan is supported by the identification of implementation projects that prioritize and coordinate treatment recommendations into a series of discrete tasks. The implementation projects are conveyed in a format similar to PMIS so that they can be easily transferred to FMSS work orders, where applicable. The treatment plan provides Class C planning level cost estimates for these implementation projects based on comparable construction projects and cost-estimating guidance such as that available from R. S. Means.

**Civic Engagement Meeting**

On November 12, 2020, the CLR project team participated in a civic engagement meeting hosted by park personnel on Microsoft Teams, a virtual meeting platform. Steven Kidd and Joshua Salestrom served as hosts for the meeting, while Jane Jacobs and Liz Sargent presented aspects of the CLR development process during the meeting. The park invited interested parties to attend the meeting, described as an overview presentation of the CLR, and the process being undertaken by the NPS to guide access and interpretation of the Spanish-American War Battery. The meeting was also described as an opportunity for the public to provide comments and ask questions about the
initial groundwork being developed to inform and
guide future planning decisions for the Spanish-
American War Battery and its associated
landscape. The presenters focused on providing
background information about the property and
its significance in American history, NPS
acquisition of the property, and the planning
process being undertaken to allow the public to
access the site and learn from interpretive
programming. The CLR was discussed as part of a
larger process that will be followed by preparation
of a Historic Structure Report for the battery
structure, archeological survey of the property,
and design and construction of proposed visitor
access and interpretive improvements.

**Description of Study**

**Boundaries**

The Spanish-American War Battery is located
within the southeastern portion of the 46,000-acre
Timucuan Ecological and Historic Preserve
located north of Jacksonville, Florida (Figure 5
and Figure 6). It closely edges a bluff overlooking
St. Johns Creek near where the stream empties
into St. Johns River. Located to the north is the
Ribault Monument, another parcel associated with
Timucuan Ecological and Historic Preserve
located on the bluff overlooking the river. The
monument pays tribute to a French expedition led
by Jean Ribault that claimed Florida for France in
1562. Northwest of the battery parcel is the
Timucuan Preserve Visitor Center, located at Fort
Caroline National Memorial, a section of the
preserve that honors the short-lived French
presence in sixteenth-century Florida. To the
south is the Theodore Roosevelt Area, a 600-acre
parcel rich in cultural history that also protects
hardwood forest, wetlands, and scrub vegetation
as part of the preserve.

The Spanish-American War Battery property
occupies approximately 2.96 acres within a
residential subdivision that is located within Duval
County, Florida. Accessed from Fort Caroline
Road, the Spanish-American War Battery property
includes lots 33 and 34, as well as a small portion
of lot 32 (parcel 18-50-27-1S-28E), of St. Johns
Bluff Estates as platted in 1945. As discussed in the

parcel deed, the property is part of unsurveyed
Section 27, Township 1 South, Range 28 East. It is
generally rectangular in form and oriented
southwest to northeast. The parcel edges the Fort
Caroline Road right-of-way for approximately 200
feet and measures 523.62 feet between the road
and the boundary associated with the marshland
along St. Johns Creek to the northeast (Figure 7).

Private homes edge the Spanish-American War
Battery property to the northwest and southeast,
as well as across Fort Caroline Road to the
southwest. A fence and gate limit access to the
property from Fort Caroline Road. Fencing and
plantings mark the boundaries of adjacent
residential properties.
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**FIGURE 5.** Map of the state of Florida indicating the location of the Spanish-American War Battery property. (Source: authors)

**FIGURE 6.** Map of Timucuan Ecological and Historic Preserve. (Source: National Park Service, available online at https://www.nps.gov/timu/planyourvisit/maps.htm, annotated by CLR team)
The battery and an associated magazine are the only surviving evidence of a military reservation designed on St. Johns Bluff in the late nineteenth century. The structure is in relatively good condition and possesses sufficient integrity to convey its historic associations with military defenses of the period. Key visual relationships with the St. Johns River that were essential to the siting and operation of the battery also survive. The primary goal of treatment of the cultural landscape at the Spanish-American War Battery is long-term preservation and protection of these resources, which contribute to the historic character and significance of the property.

Features contributing to the significance of the Spanish-American War Battery include the following:

- Spanish-American War Battery (battery, tunnel, magazine, and location of former artillery emplacements)
- St. Johns Bluff
- Gently-sloped landform rising to St. Johns Bluff
- St. Johns Creek
- Drainage emptying into St. Johns Creek
- Marshland along St. Johns Creek
- Hammock woodland vegetation
- Temperate mixed hardwood and evergreen hammock woodland community with mature trees that may survive from the period of significance
- Woody vegetation on the bluff managed to maintain a view of St. Johns River
- Marsh vegetation along St. Johns Creek
- View from the battery to the St. Johns River to the north
- View from the tunnel to the northwest
- View toward the battery from the property beginning near Fort Caroline Road
The Spanish-American War Battery represents advances in military engineering and improvements made by the federal government to address coastal defense needs in response to the threat posed by the Spanish-American War. The battery also occupies terrain that has served military defense purposes for centuries due to its visual command of the St. Johns River and its relationship to the important port at Jacksonville, Florida. The battery is a significant historic resource that merits careful protection and preservation. As steward of the property, the National Park Service intends to balance protection of the battery with the provision of public access and interpretation.

The primary goal of treatment of the cultural landscape at the Spanish-American War Battery is long-term preservation and protection of these resources, which contribute to the historic character and significance of the property. The CLR treatment plan provides recommendations for appropriate care of masonry, concrete, and metal components of the battery, as well as treatment of vegetation, some of which contributes to the significance of the property and some of which threatens the condition or integrity of historic resources. The recommendations provided herein are considered with long-term ecological and economic sustainability in mind, and with the understanding that treatment of the cultural landscape balances natural and cultural resource management within a broader framework of sustainable land management practices. Efforts conducted by the National Park Service to address landscape management with ecological principles should be considered for inclusion in interpretive programming at the park.

The native woodland that currently occupies the site should be retained to the extent possible, with existing trees maintained for the safety of visitors and protection of the battery structure. The existing woodland composed of temperate evergreen and deciduous hammock species contributes to the significance of the property. Perpetuating this woodland by retaining all extant healthy trees, managing or eradicating invasive species, and either planting or allowing the growth of understory and replacement canopy species associated with the hammock plant community are recommended. Trees should be evaluated regularly by an arborist to determine whether they pose a hazard to the battery or visitors, with appropriate pruning or removal to follow. Replacement in kind would be considered where trees are removed.

At the top of the bluff, views to the St. Johns River should be reestablished and maintained as open and clear of woody trees and shrubs at eye level. At the same time, a protective barrier is recommended at the top of the bluff to protect visitors from accessing the steep and dangerous slope. The intended character proposed for the barrier would have a limited visual effect on the historic property.

Although the structure and its location on and relationship to St. Johns Bluff survive today, residential properties abut the property to either side. To limit the effect of the views of adjacent residences, the treatment plan provides guidance regarding the establishment and maintenance of a screen buffer along the eastern and western boundaries of the property. Additional plantings of native evergreen trees and shrubs are recommended to supplement the existing woodland where the screen planting does not entirely buffer views of adjacent properties, or where care of existing plantings, including removal of invasive, diseased, or hazard species, results in gaps in the buffer.

Finally, the treatment plan provides a conceptual plan for the provision of visitor access to the property and an understanding of the history and significance of the battery, including the context within which it was built. The conceptual plan identifies the appropriate means for visitors to enter the property, circulate through the site, and gain an understanding of the historical events and associations through the provision of interpretive information. The conceptual plan carefully addresses these needs in such a way as to limit impingement on significant cultural and natural resources.
Recommendations for Further Study

1. Conduct further archival research to identify as possible additional images or other documentation of the site prior to, during, and after construction of the Spanish-American War Battery.
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Developmental History

Introduction

St. Johns River has been recognized for its strategic military and economic value for centuries, beginning first by American Indians and then later by Europeans and Americans, and it provides a vital interior access route into eastern Florida. The 310-mile-long river, the longest river in the State of Florida, extends generally north until it turns eastward at Jacksonville to its mouth at the Atlantic Ocean, six miles east of St. Johns Bluff. The section of the river in Duval County is approximately 39 miles in length. Shoreline uses on St. Johns Bluff and its vicinity range from ecological and historic preserve, residential, port, commercial, industrial, military, to saltwater marshes.

Located in the lower basin of the St. Johns River on its south side, St. Johns Bluff has a steep and narrow “bluff line” which defines the southern outer limits of St. Johns River’s flood plain in this meandering section of the tributary. Set approximately 75 feet above the river, the bluff’s high sand ridge has served as a strategic location for defensive works where it is believed Fort Caroline was erected by the French in 1564. The bluff offers wide views of St. Johns River. The Spanish-American War Battery is sited on the east side of St. Johns Bluff above St. Johns Creek.

St. Johns Bluff contains resources and historic sites of the Timucuan Ecological and Historic Preserve. Ribault Monument stands on the eastern point of St. Johns Bluff in the vicinity of the former Spanish-American War temporary battery. To the west of the monument is the Fort Caroline National Memorial which overlooks St. Johns River. The 600-acre Theodore Roosevelt Area in the Timucuan Ecological and Historic Preserve is south of the Spanish-American War Battery. Residential housing, dating from circa 1946 through the early twenty-first century, surrounds the Spanish-American War Battery and the Timucuan Ecological and Historic Preserve sites on St. Johns Bluff (refer to Figure 6).

Period plans providing cartographic diagrams depicting selected eras of history for the Spanish-American War Battery property are presented at the end of this chapter. Sources referenced in developing the period plans included archival maps, narratives, and aerial photographs.


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29. Stowell, 121.
32. Buker.
Archives and Records Administration (NARA)
Washington, DC, NARA Atlanta, and the Atlanta Federal Records Center. His research on the Spanish-American War Battery forms the basis for the following developmental history.

An historical context for St. Johns Bluff is also included in Timucuan Ecological and Historic Preserve Historic Resource Study.  

**Cultural Background**

**Early History of St. Johns Bluff**

Human occupation of southeastern North America began more than 11,500 years ago, during a time of lower global temperatures, when glaciers covered significant portions of the northern part of the continent. The St. Johns River area is traditionally identified as part of the East Florida or St. Johns culture area, and it is also included in the St. Marys Region that extends from the mouth of the St. Johns River in Florida across the Florida-Georgia state border (at the St. Marys River) to the Satilla River in Georgia. This revision to established terminology considers the distinctive character of archaeological remains in the area, which include ceramics typical of assemblages from southern Georgia and northern Florida.

Traditionally, the region has been viewed as a border area in which competing cultures from Georgia and Florida won and lost territory.

In the area that would become northeast Florida, these early arrivals occurred between 10,000 to 8000 Before Common Era (BCE) — referred to as Paleoindians—and inhabited a landscape that was warmer than the recently-ended Ice Age. The lower St. Johns River valley was broad, relatively dry, and shallow with a few catchment lakes. Sea level was roughly 400 feet lower than today during this period. The availability of freshwater was a limiting factor in migration and site location for the Paleoindians, and sites were clustered around freshwater sources where flora and fauna were more abundant.

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33. Ibid., 46-54. Note, the records in the Atlanta Federal Records Center cited by Buker were transferred to NARA Atlanta.
34. Background research for this Cultural Landscape Report did not include a review of the textual records originally cited by Buker that are presently located at NARA Washington and NARA Atlanta. Copies of cartographic materials for St. Johns Bluff in the collection of the Cartographic Division of NARA College Park were obtained for this study.
35. Stowell.
38. Ibid.
41. Ibid.
common. Settlement patterns also were affected by the availability of lithic resources. An isolated Paleoindian projectile point discovered near Jacksonville in Ponte Vedra Beach, Florida, is evidence of Paleoindian occupation, but Paleoindian occupation occurred more readily in north central, northwest, central and southern Florida. The lack of both freshwater and lithic resources may explain the limited numbers of Paleoindian sites in northeastern Florida.

Changes in faunal resources from the Paleolithic to the Early and Middle Archaic (either because of over hunting or environmental change) meant that megafauna was no longer available to the prehistoric inhabitants of Florida. These populations had to switch to hunting deer and smaller mammals, resulting in new hunting techniques, lithic technologies, and settlement patterns.

The Archaic period in Florida is typically thought of in three parts: early (8000 to 5000 BCE), middle (5000 to 3000 BCE), and late (3000 to 500 BCE). These subdivisions are based on environmental and climatic data as well as knowledge of artifact assemblages and site types. The climate became less arid at the beginning of the Early Archaic period, correlating with a change from the lanceolate projectile point types of the Paleoindian to stemmed varieties. Early Archaic sites are sometimes found overlaying Paleoindian sites, suggesting a gradual evolution between the two periods.

Early Archaic populations settled in camps around water sources. Easier access to water in the Early Archaic allowed the population to grow and become more sedentary, inhabiting a wider range of site locations. A wider variety of tools were used in the Early Archaic than in the Paleoindian period. Early Archaic tool types include projectile points, knives, hammerstones, scrapers, choppers, and drills. Bone tools were also used, although bone often is not preserved.

Archaic subsistence revolved around hunting terrestrial animals, in some areas supplemented by aquatic resources (i.e., fishing and shellfish gathering). On the upper St. Johns River, small fish are common constituents of middens. Gathering was also important to Archaic subsistence as plants and small game were collected as food sources. Other plant material (i.e., wood and fiber) would have been used for fuel, or the manufacture of clothing and baskets.

Prehistoric settlement of Duval County began during the Middle Archaic (5000-3000 BCE). Whereas Early Archaic sites are not found in conjunction with shell middens, Middle Archaic sites are found associated with freshwater shell middens along the St. Johns River and Atlantic lagoons. During the Middle Archaic, oak forests gradually gave way to pine and mixed forests, leaving the vegetation essentially the


44. Milanch and Fairbanks.


46. Milanch, 1994, 63-64.

47. Ibid.


50. Ibid.
same as it is at present. The Atlantic coastal lagoons in the St. Johns River valley became significantly more populated during the Middle Archaic, perhaps as a result of increased utilization of river and forest resources. \(^{31}\)

Spencer’s Midden (8DU5623), located on the western edge of the City of Atlantic Beach, is a preceramic oyster shell ring midden dating to the Middle Archaic. Radiocarbon dates (5570 Before Present [BP]) from the shell at the site confirm that it is the oldest known coastal midden on the southeastern seaboard. \(^{51}\)

Zooarchaeological analysis for subsistence and seasonality from Spencer’s Midden as well as other preceramic sites in the region indicate that the site was used repeatedly for the collection of oyster, coquina, and small estuarine fish. At Spencer’s Midden, analysis revealed that the site was occupied throughout the year: coquina was collected in the summer, estuarine fish were caught from spring through fall, and oyster was collected in the winter. \(^{52}\) Coquina and oyster are beach and lagoon species, respectively. \(^{53}\)

During the Late Archaic period (3000-1000 BCE) aquatic food resources became increasingly important. Late Archaic middens are found along the Florida coast and inland waterway north of Flagler County, including Duval County. \(^{54}\)

The Mount Taylor period represents a preceramic Middle to Late Archaic culture in east Florida along the St. Johns River drainage, the coastal lagoon system, and coastal salt marsh-tidal stream-barrier island system. \(^{55}\)

Identified through the use of radiocarbon dating, Mount Taylor shell middens are located at present in marshlands that are partially submerged by higher sea levels. \(^{56}\) The artifacts of the Mount Taylor period show a great deal of continuity with those of the Early and Middle Archaic periods, whereas settlement patterns and subsistence strategies of the Mount Taylor period differ greatly from those practiced before. \(^{57}\)

The most significant development of the Late Archaic was the use of fiber-tempered pottery circa 2000 BCE. \(^{57}\) There appears to have been cultural continuity between the Middle and Late Archaic sites in the area with the addition of fiber-tempered ceramics the only change from the Mount Taylor to the Orange period. Fresh and saltwater shell middens are common site types for both Mount Taylor and Orange cultures. \(^{58}\) Mount Taylor shell middens are thought to underlie several Orange-period middens in Duval County, indicating that settlement patterns did not change immediately with the introduction of ceramic technology. \(^{59}\)

Although settlement patterns remained stable, the population of northeastern Florida increased dramatically during the Orange period. \(^{60}\)

56. Russo et al.
59. Russo et al.
Orange-period ceramics are focused along the St. Johns River, although fiber-tempered ceramics are found throughout the state.\textsuperscript{61}

In the early 1990s, a survey of the Timucuan Preserve at the mouth of the St. Johns River found that there was extensive evidence to establish Orange-period utilization of the St. Marys region. Large Orange-period shell rings, extensive sheet middens, shell middens, and isolated ceramic scatters have all been recorded.\textsuperscript{62}

Orange-period ceramics are fiber tempered, which is the process of adding vegetable fibers (often from palmettos) to the clay. These fibers would almost entirely disintegrate during the firing process leaving the vessel porous. To strengthen the vessel, the interior and exterior surfaces would be smoothed with clay.\textsuperscript{63} Fiber-tempered ceramics are found almost everywhere in east Florida, especially in coastal settings or on the St. Johns or Oklawaha Rivers.\textsuperscript{64}

The period termed Transitional (1000-500 BCE) in Florida and Refuge in Georgia witnessed experimentation in ceramic manufacture, including ceramics containing characteristics of both early and late traditions.\textsuperscript{65} Due to the somewhat ambiguous nature of these transitional ceramic types, few Transitional sites have been recognized. In addition, coastal sites are not common at this time due to drier conditions; like Early and Middle Archaic sites, many Transitional sites may now be below sea level. A number of other changes occurred during this period. Long-distance trade increased; sedentary village life became the norm; and subsistence started to include cultivation of domestic plants.\textsuperscript{66}

Transitional-period pottery has elements (decoration or temper) of both the earlier Orange period and the later St. Johns or Deptford periods. Transitional ceramic types include semi-fiber tempered (made with sand and fiber), and chalky-fiber tempered wares. Little is known about the Transitional period in the St. Marys region.

In the St. Marys region sand-tempered ceramics are the most common Woodland-period (500 BCE-1565 CE) ceramic type followed by the St. Johns Plain. It is thought that this dominance of sand-tempered types in the St. Marys region reflected settlement by the Atlantic coastal Deptford groups.

The St. Johns culture (500 BCE-1565 CE) grew out of the Orange culture in east and central Florida. This period coincides with the Woodland and Mississippian periods that occurred in other sections of the Southeast. The beginning of the St. Johns culture circa 500 BCE coincides with the advent of chalky-ware ceramics. This type of pottery does not contain fiber, sand, or grit temper, rather it is tempered


\textsuperscript{62} Russo et al.


\textsuperscript{64} Milanich, 1994.

\textsuperscript{65} Russo et al.

\textsuperscript{66} Milanich, 1994; Steven D. Ruple, Phase I Archaeological Survey of the Proposed Site of the Azalea Park 11525 KV Substation Lowndes County, Georgia (Atlanta: Garrow & Associates, 1991).
by sponge spicules. This type of tempering agent continued to be used until the Spanish Mission period; however, different surface treatments often act as cultural markers.

Subsistence of St. Johns populations consisted of riverine shellfish as well as an abundance of oyster, which may have been due to rising sea levels. The later St. Johns period is marked by a more sedentary way of life, with increased horticulture as well as trade items.

There are two major regional variations within the St. Johns culture area: St. Marys to the north, and Indian River to the south. The St. Marys region variation shows the influence of the Savannah period cultures along the Georgia coast, reflected in the presence of cord-marked Savannah ceramics. Another influence includes the use of maize agriculture after circa 1200 CE. The Indian River variation shows the influence of the Glades culture to the south. This region stretches from the mouth of the St. Johns River down the Atlantic coast to the north end of the Indian River.

Although it is known that during the contact period St. Johns people practiced maize agriculture in the summer and relied on maritime resources during the winter, it is not known whether this subsistence pattern was followed by the earlier St. Johns groups. St. Johns-period sites tend to be located in wet environments unsuitable for large scale agriculture. Evidence from shell middens along the Atlantic coast has shown that the St. Johns people exploited a wide variety of maritime resources, including oyster, clams, coquina, shellfish, turtles, and fish.

The Deptford culture of the Southeast reached into north Florida between 500 BCE and 750 CE, a period that overlaps the early St. Johns period. The Atlantic subregion of the Deptford culture area stretched from South Carolina to the mouth of the St. Johns River near Jacksonville. In this area, Deptford peoples were coastal dwelling and utilized maritime subsistence strategies supplemented by nearby terrestrial resources. Deptford settlement patterns were similar to the settlement patterns of other Late Archaic cultures. Deptford peoples primarily inhabited coastal settlements of no more than 15 to 25 individual households while smaller interior sites allowed special resources to be exploited. The primary feature of coastal Deptford sites is the shell midden.

Although Deptford people inhabited the Atlantic coast of Florida for over 1,000 years, relatively few sites dating to that time have been found. This is probably due to site formation processes rather than site distribution. Many coastal Deptford sites have been inundated by rising sea levels or destroyed by erosion. Deptford sites are usually located in live oak-magnolia hammocks adjacent to salt marshes. These sites are frequently encroached upon by marshes or they are on small islands formed by rising sea levels. Burial mounds were used by the Atlantic Deptford culture after 400 BCE.

70. John M. Goggin, Space and Time Perspective in Northern St. John’s Archaeology. Yale University Publications in Anthropology No. 47 (1952); Milanich, 1994.
Marshes were a favored site location; however, Deptford populations “never moved south of the northernmost St. Johns River apparently in part because their economic system was not well adapted to the riverine and lagoon environments of east Florida.”

Lithic tools are rarely found at Deptford sites, and although it is known that the Deptford people used shell, bone, and wood tools, these classes of artifacts are not often well preserved. Use of cordage and netting is inferred from impressions on the surface of Deptford pottery. Deptford pottery is sand and grit tempered rather than fiber tempered, although fiber-tempered pottery is found as a minor component of early Deptford assemblages. The surfaces of pots were frequently decorated by designs cut into the wooden paddles used as tools to build the vessel walls. The changes in manufacturing techniques and tempering agents allowed larger and sturdier pots to be made, which could then be used for storage or cooking over fires.

The St. Marys region represents a transitional zone between the St. Johns II of Florida and the Savannah culture of Georgia (800-1500 CE) similar to the relationship manifested between Deptford and St. Johns I in the region. St. Johns II sites are characterized by St. Johns chalky plain and check-stamped ceramics, while Savannah sites are characterized by sand-tempered cordmarked and plain ceramics. The St. Marys region contains sites that are predominately Savannah or St. Johns and sites that have a mix of both. Generally, the single “component” sites tend to be later than mixed sites. Sites dating to this period in the St. Marys region frequently contain a mixture of these types of ceramics. There has been a great deal of speculation concerning the relationship between Savannah and St. Johns in this region. Some possibilities include 1) Savannah populations from Georgia moving into north Florida, 2) the spread of ideas and technology including pottery techniques and maize agriculture, and 3) a group that lived in this area who borrowed traits from both the north and south. One interesting note is that Savannah Check Stamped, a relatively common type in Georgia, is extremely rare in the St. Marys region. Some researchers have speculated that the Savannah potters did not use the check stamping because it was already “taken” by St. Johns potters. This speculation suggests that the differences in pottery involved cultural identity. However, by the time of Spanish contact, Timucua-speaking people were making Savannah-style pottery.

No other cultural traits have been differentiated between Savannah and St. Johns. This lack of differentiation could result from a lack of social differentiation, as would be the case if a single group were making both types of pottery, or because the two groups lived so closely together that individual traits and practices are difficult to distinguish.

At the arrival of the first Europeans (circa 1539), the American Indians living along the St. Johns River were Timucua, that is, they spoke a dialect of the language the Spaniards called Timucua. Although Timucuan groups had spread across northern Florida and into southern Georgia, they were not a single group. Various dialects represent different cultures that probably never considered themselves a single entity. These people lived at least some of the time in medium-sized sedentary villages and their subsistence relied, at least in part, on agriculture. Cultivated products included corn, beans, and squash. The Indians also relied heavily on marine life and

75. Milanich, 1994, 118.
76. Ibid.
77. Russo et al., 20.
78. Milanich, 1994, 249.
79. Russo et al., 20.
shellfish. Life continued in a fashion similar to the previous St. Johns II period with gradual population loss and cultural changes caused by increasing contact with Europeans and European diseases. Protohistoric and colonial pottery in the St. Marys region consists mostly of Savannah-style techniques including sand/grit tempering and cordmarking. St. Johns pottery, although present, is rare. The similarities in pottery between the protohistoric and prehistoric are so strong that many sites are indistinguishable as to date.

In 1562, the French encountered a Timucua chiefdom along the St. Johns River led by Chief Saturiwa who had 30 other chiefs in the region under his authority. He was probably not a paramount chief, but his village served as the origin for the other village populations, thereby creating a historic link. This chieftdom-level society probably included separate religious as well as political leaders, and systems of trade and tribute. Some evidence suggests that these chiefdoms were part of the Southeastern Ceremonial Complex, a set of artifacts and motifs found throughout the Southeast.

After 1620, with the steady decline of the Timucua population, the Guale Indians from Georgia began to be relocated by the Spanish into this region. Like the Deptford and Savannah people of prehistory, the Guale brought their own traditions and culture, including pottery styles. Guale pottery, referred to in the archaeological record as San Marcos, is similar in style to the Lamar and Irene series ceramics of Georgia. San Marcos pottery includes stamped and incised decoration, with roughened types like cobmarked as minor types. Some San Marcos pottery may also have come into the area as a result of trade up and down the missions along the coast.

Colonial and Pre-Civil War Settlement of St. Johns Bluff, 1564-1861

Spanish explorer Juan Ponce de Leon claimed La Florida for Spain on April 3, 1513. Nearly half a century later, French Huguenot explorer Jean Ribault and his small fleet entered St. Johns River on May 1, 1562. The French claimed the territory and placed a monument on the south side of the river, west of St. Johns Bluff near Mayport. Ribault named the river Rivière de Mai, or River of May, to commemorate the first day of his expedition. Rene Goulaine de Laudonnière, who accompanied Ribault on the first excursion, led the next French foray to Florida in 1564, landing first at St. Augustine on June 22. They entered St. Johns River three days later. Laudonnière established the first French settlement of Fort Caroline, or Fort de la Caroline, named after the French King Charles IX. The officers selected a site for the fort on a “pleasant vale” on the south side of St. Johns.


Davis, 1. Note, Jacksonville’s official records were destroyed twice prior to 1925, during the Civil War and by fire in 1901. Davis compiled available records which he presented in this 1925 history.

Stowell, 121.

Davis, 6.

Ibid., 6.

Ibid., 7.

Ibid., 7.
River at the base of the “mountain,” St. Johns Bluff, which they had previously surveyed during the 1562 reconnaissance of the river. They constructed a fort on the plain at the water’s edge (see Figure 27).

News of a French Huguenot settlement in Florida soon reached Spain. At that time, Spain held claim to Florida by right of discovery and exploration. King Philip II, alarmed by the potential threat posed by the French (and Protestant) colony to Spain’s possessions in the New World, selected Pedro Menéndez de Avilés to outfit and undertake an expedition to Florida to remove the French from the territory. Menéndez anchored just south of the mouth of St. Johns River, where he established St. Augustine. On September 20, 1565, Spanish forces captured Fort Caroline and killed or drove away the French settlers. Menéndez renamed the fort and river “San Mateo,” as the fort’s seizure occurred during the festival of “Saint Matthew.” The Spanish would later change its name to “San Juan.”

British Occupation, 1763-1783. Great Britain possessed the length of North America’s eastern seaboard from 1763 to 1776, an area extending from the southern tip of Florida to Nova Scotia. By treaty in 1763, Great Britain had acquired Florida from Spain in exchange for Havana, and it assumed control of the territory in the following year. About that time, colonists loyal to Great Britain settled in northeast Florida. The Marquis of Hastings secured a British grant for 20,000 acres on the north side of St. Johns River, while the Marquis of Waterford secured a grant for the same amount of land on the south side of the river (see Figure 27).

In the 1770s, “St. Johns Town” was established on a 200-acre tract owned by William Hester. The bluff was known as Hester’s Bluff during this period. In anticipation of an American invasion, the British fortified Hester’s Bluff with cannon in May 1777. The placement of this battery may have been the first effort by the British to fortify St. Johns Bluff.

William Hester conveyed the tract of land to Thomas Williamson in 1779. Small log houses were first built on the bluff. When British loyalists came to the area in the summer and fall of 1782, they erected frame houses with detached kitchens and other structures.

According to Governor of East Florida Peter Tonyn, St. Johns Town consisted of roughly 300 houses, two taverns, a public house, a livery stable, a dry goods shop, a storehouse, a tools shop, and a small Freemason’s Lodge.

With its better harbor facilities, St. Johns Town replaced St. Augustine as the major seaport of the area until England ceded Florida back to Spain in 1783. A small force of British regulars

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90. Ibid., 8.
91. Ibid., 9.
92. By 1924, the plain was washed away by the river due mainly to the construction of jetties. T. Frederick Davis, 9.
93. Davis, 12.
94. Ibid., 13.
95. Ibid., 17.
96. Stowell, 130.
remained at St. Johns Bluff until Spain officially took control over Florida in 1785. The British subsequently dismantled parts of St. Johns Town and abandoned their estates along the river.

**Spanish Occupation, 1784-1821.** After the arrival of the new Spanish governor in 1784, the Spanish established a battery on the bluff, which they named San Vincente Ferrer (St. Vincent Ferrer), to control maritime activities on the river. During this period, two plantations were established on the bluff in the areas of the current sites of Fort Caroline National Memorial and Ribault Monument. Zephaniah Kingsley, who owned Fort George and other area plantations, purchased both tracts of land in 1817. The treaty for the transfer of Florida by Spain to the United States was ratified in February 1819, with the formal transfer occurring in 1821.

**St. Johns Bluff, 1822-1860.** On August 12, 1822, Duval County was established from a segment of St. Johns County. Jacksonville was founded in the same year and selected as the county seat. Kingsley continued ownership of the two tracts of land on St. Johns Bluff until 1838. The place name of St. Johns is identified with the bluff on a circa 1839 map of Florida (Figure 8).

In the same year, steam vessels first entered the St. Johns and Apalachicola Rivers, marking the beginning of Florida’s steamboat era. On St. John’s Bluff, farming continued until the outbreak of the Civil War.

**Military Conflict and Defenses, 1861-1899**

**Civil War, 1861-1865.** On April 17, 1861, Florida seceded from the Union and joined the Confederate States of America. Coastal defensive works were erected in northeast Florida on Amelia Island, Talbot Island, and St. Johns Bluff. The Confederate Army also established Fort Steel at the mouth of St. Johns River. In summer 1862, Confederate General Joseph Finegan emplaced batteries on St. Johns Bluff to prevent Union gunboats from advancing upstream on the river. The Confederate earthworks on the bluff consisted of two twelve-pounder rifle guns and two 8-inch howitzers which were placed in position on September 9, 1862, undetected by the two Union gunboats anchored in the river a short distance away.

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107. Stowell, 135.
110. Ibid.
111. Ibid.
distance below. Several engagements between this battery and Federal gunboats transpired over the next few weeks.

On October 1, 1862, Union troops were sent from Hilton Head, South Carolina, to support land and naval attacks on the St. Johns Bluff (refer to Figure 27). After taking possession of the battery two days later, Federal troops destroyed its magazines and defensive works. Harper's Weekly published a sketch of the Civil War battery on St. Johns Bluff by artist H. Van Ingen (Figure 9). The engraving showed a reported eleven guns emplaced along the top of the earthen battery, which was surrounded by trees in the background.

**16. US Harbor Defense, Endicott System, 1890–1905.** By the late nineteenth century, the country's existing seacoast fortifications were deteriorating, which concerned both Congress and the military. The general demobilization and years of reduced military appropriations following the conclusion of the Civil War led to concerns about the ability of the United States to defend itself during a time when America sought to expand its influence overseas. In 1885, President Grover Cleveland organized a joint army, navy, and civilian board headed by Secretary of War William C. Endicott to assess the state of the nation's coastal defenses.

The Endicott Board recommended $127 million for a comprehensive modernization program of harbor and coastal defenses in its 1886 report. This new construction program called for breech-loading cannons and mortars, floating batteries, and submarine mines for roughly 29 locations on the coast. Two years after the report, Congress created the Board of Ordnance and Fortification to test weapons for the new program.

Known as the Endicott System (1890–1905), the new defense program emphasized weapons over structures, unlike previous coastal defense systems. Steel had substituted for iron in gun manufacturing during this period, resulting in lighter, stronger, longer, and more powerful guns. The introduction of breech-loading weaponry allowed for guns to be mounted on a new type of gun carriage, one that lowered the gun on the recoil energy of the gun's firing. The gun disappeared behind the wall from which it was mounted, permitting quick and safe reloading from behind the battery wall. The US Army Corps of Engineers initiated a modest construction program in 1890. Structures built under this system were constructed of reinforced concrete and were characterized by several smaller detached batteries. Concrete gun emplacements were designed with underground magazines and earthen and concrete parapets to

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116. Ibid.
117. Ibid.
118. Ibid.
122. Ibid.
123. Ibid.
124. Ibid.
125. Ibid.
Coastal Defense Planning in Florida. In January 1897, the State of Florida held the Coastal Defense Convention in Tampa. Many of the most important individuals in the state and nation attended the conference such as businessman Henry Plant, industrialist Henry Flagler, General John Schofield, and Governor William Bloxham. The State of Florida initiated efforts into securing their coastal defenses prior to outbreak of the Spanish-American War due to its geographic proximity to Cuba and the number of filibustering voyages originating in the state. As early as November 1897, Governor Bloxham had requested from the Secretary of the Navy, John Davis Long, a loan of a light, one-pounder Hotchkiss rapid-firing gun with field and boat mount for the state’s Naval Militia. Bloxham asked for the gun to be shipped to Jacksonville in care of Lieutenant A. R. Merrill, commanding the 3rd Division. The governor made a similar request for the 1st Division in Tampa in the following month.

Jacksonville and the Cuban War for Independence, 1895-1898. Jacksonville, with its large Cuban immigrant population, played an important role as one of the centers of Cuban revolutionary activity in the years leading up to the Spanish-American War. José Martí, the founder of the Cuban Revolutionary Party, visited the city eight times. José Alejandro Huau, a naturalized Cuban, was essential to the filibustering activities departing from Jacksonville. Huau’s cigar store at the corner of Bay Street and Pine (Main Street) served as a meeting place for Cubans and their sympathizers during the years before the Spanish-American War. As early as March 1897, the Jacksonville City Council passed resolutions condemning Spain for its atrocities in Cuba. Cuban Americans in Florida supplied continuous funds to support the revolution. Seventy-one filibustering expeditions left from US ports for Cuba between 1895 and 1898, twenty-three of which originated from Jacksonville. Only twenty-seven of these attempts were successful; twelve of which had embarked from Jacksonville using three local tugs: Three Friends, Commodore, and Dauntless.
On January 24, 1898, the United States sent the USS Maine from Key West, Florida, to Havana, Cuba, to protect American interests on the island. The Maine exploded in Havana harbor on February 15, resulting in the loss of 260 American sailors. Opposed to military intervention, President William McKinley ordered an investigation of the battleship’s sinking. Though both nations were averse to war, each of them made preparations as the crisis intensified after the sinking of the vessel. Five days after the sinking of the Maine, Governor Bloxham directed the Jacksonville Naval Militia to conduct a detailed reconnaissance of the Atlantic coast as practical to locate proper sites for establishing signal stations and to obtain any other relevant data from a strategic military standpoint. The governor’s directive was one of the earliest set of military orders issued by any state before the Spanish-American War.

On March 9, 1898, Congress appropriated $50 million solely for the improvement of military coastal defense. By the end of March, the US Naval Court of Inquiry determined a mine was the cause for the explosion of the Maine, while Spain attributed it to an internal explosion. The Spanish Minister of Marine, upon news of the explosion, directed Admiral Pasquale Cervera to prepare to attack Key West and blockade the American coast. Admiral Cervera recognized three unfavorable factors for the mission: his inadequate personal naval experience compared to the Americans; Spain’s lack of military bases on the western side of the Atlantic Ocean; and the inadequate logistic support for such an undertaking. Despite their odds for success, the Spanish fleet sailed westward to sortie in the Cape Verde Islands on April 29.

**Spanish American War, April 21, 1898 – August 13, 1898.** President McKinley issued an order for a blockade of Havana on April 21, 1898. Spain ceased diplomatic relations with the United States two days later. On April 25, Congress responded to the president’s request for armed intervention. The American declaration of war was dated to April 21 to justify previous operations by the United States. During 1890s, the Regular Army consisted of five regiments of artillery, ten regiments of cavalry, and twenty-five regiments of infantry. In the month prior to the Spanish-American War, two more artillery regiments were authorized. The standing army consisted of 2,143 officers and 26,040 men stationed at posts across the country on April 1, 1898. The outbreak of the Spanish-American War resulted in additional changes to the army’s organization and mission.

During the war, the city of Tampa served as the primary port of embarkation for US troops deploying to Cuba. Most of the artillery branch, nearly 300 officers and 4,500 enlisted men, were stationed at established fortifications along the

139. Benton, 72.
140. Buker, 5.
141. Buker, 8; Davis, 208.
142. Buker, 8.
145. Buker, 6
146. Ibid., 6.
148. Ibid.
149. Ibid.
150. Ibid.
152. Ibid.
nation’s coastline.\textsuperscript{153} The Florida Naval Militia was also mobilized into federal service during the war, serving in the state mainly with the US Navy’s Coastal Signal Service.\textsuperscript{154} On May 31, the US Army established Camp Cuba Libre near Jacksonville to relieve overcrowding at the camp in Tampa. From May until late October, the encampment operated as an assembly point for the twenty-two regiments of the Seventh Army Corps under the command of Maj. Gen. Fitzhugh Lee.\textsuperscript{155} The camp exceeded its maximum occupancy limit of 20,000 people in September, when troop size grew to nearly 29,000.\textsuperscript{156} All troops vacated Camp Cuba Libre by the first week of November.\textsuperscript{157}

**St. Johns Bluff Spanish-American War Fortifications**

The State of Florida, similarly to other coastal states, urged Congress for protection from potential attacks by the Spanish fleet. In the case of Jacksonville, the port had served as a key source of supplies for Cuban rebels. Furthermore, during the Civil War, the city had been occupied four times by gunboats escorting Army transports up the St. Johns River. Brig. Gen. John M. Wilson, Chief of Engineers, visited Jacksonville on March 6, 1898, to inspect the river’s jetties without indicating whether or not there were plans to defend the river.\textsuperscript{158} Concern for the defense of Jacksonville continued to intensify among its citizens. The *Times Union and Citizen* published an article on mine defense, reporting an anonymous and prominent citizen had claimed to have the knowledge and the cables to privately mine the St. Johns River.\textsuperscript{159} By end of the month, a group of citizens appointed former Congressman C. M. Cooper and W. W. Cummer to visit Washington, DC, to convince the authorities on the importance of protecting Jacksonville.\textsuperscript{160}

On April 2, 1898, General Wilson directed Lt. Col. William Henry Harrison Benyaurd to go to Miami to select a site for a temporary battery for the defense of Biscayne Bay. He also mentioned to Colonel Benyaurd the prospect of a temporary battery on St. Johns River.\textsuperscript{161} On the same day, Wilson also met with the Secretary of War and some citizens from Jacksonville who had returned to appeal for guns and fortifications. Cooper, Cummer, and Congressman R. W. Davis informed the men that Jacksonville would provide mines and accessories for the support of the battery.\textsuperscript{162} The two military officials approved the proposal to provide supplies to defend St. Johns River. Two modern rapid-fire 5-inch guns, a secondary battery of other guns, and mines were initially planned for St. Johns River.\textsuperscript{163} Colonel

\textsuperscript{153} Ibid.
\textsuperscript{157} Ibid.
Benyaurd, by now in Miami, was informed of the proposed fortifications two days later. He was instructed to cooperate immediately with the Jacksonville citizens with torpedo defense and to select a site on the river for four modern siege guns. However, Jacksonville citizens preselected St. Johns Bluff as the site for the fortifications and obtained the landowners permission, without consulting Benyaurd.

Three days prior to Benyaurd’s scheduled arrival in Jacksonville, on April 7, the Florida Finance Company and Sarah F. Williams, land owners on St. Johns Bluff, drafted letters to Colonel Benyaurd. The landholders granted the government the right to construct temporary fortifications on their land in exchange for an annual rent. The Florida Finance Company sought a $50 rental while Williams asked for double that amount. She also indicated she would sell her 50-acre parcel for $2,500 to the United States, if a permanent occupancy were to become necessary. A third landowner, W. H. Brown, later notified Colonel Benyaurd that the amount requested by the Williams family would be satisfactory for his property as well. Benyaurd met with the Jacksonville committee, received the letters, and returned to his headquarters in St. Augustine. On April 8, he retained John M. Cook of Spartanburg, South Carolina, for the superintendent position to direct the construction of a temporary battery.

### St. Johns Bluff Military Reservation (refer to Figure 28).

Land tenure on St. Johns Bluff for the military reservation was a more involved process than it was for the construction of temporary buildings. On March 31, 1898, a joint resolution of Congress had set aside Section 355 of the Revised Statutes granting the government the power to build temporary fortifications with written consent of the landowners. Benyaurd received permission from the landowners to build temporary fortifications on St. Johns Bluff one week later. In the case of the Spanish-American War Battery, Benyaurd realized that the concrete gun emplacement would be a permanent fortification, which did not fall under the joint resolution of 1898. Concerned over the matter, Benyaurd proposed to the Chief of Engineers that the military reservation should include all of section 43 and portions of sections 27 and 44 of Township 1 South, Range 28 E in Duval County which totaled 103 acres.

### Construction of Fortifications at St. Johns Bluff

As a defensive post, St. Johns Bluff offered one of the highest elevations along the river corridor and a strategic location near the mouth of the river. The undeveloped bluff, however, lacked transportation infrastructure. A site along the river below the northeast corner of the bluff was selected for a wharf (or the US Dock) (Figure 10). Work commenced on harbor defense on April 11, 1898, when Cook led his civilian laborers to St. Johns Bluff to clear the underbrush and remove trees. Benyaurd reached an agreement with W. A. MacDuff of Jacksonville on the following day to build a landing wharf and four small temporary buildings close to it for $531.63. MacDuff supplied the labor, a pile driver, a water boat, hoisting engine, 5,000 shingles, and 125 pounds of iron spikes. By mid-April, a roadway from the riverbank to the bluff had been cleared and the wharf was completed.

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164. Buker, 10. Albright to Benyaurd, 4, 5 April 1898.
165. Buker, 11.
166. Ibid.
167. Ibid.
168. Ibid.
169. Ibid.
170. Ibid., 12.
171. Ibid., 38.
172. Ibid.
173. Ibid., 12.
174. Ibid.
175. Ibid., 13.
Later, Colonel Benyaurd had a railroad track laid from the boat landing up the bluff along a ravine. A stationary engine hauled the materials to the top of the bluff. Benyaurd rented the rail from a local merchant with the understanding the iron would be returned at the completion of the work, in roughly six or eight weeks. A November 1898 sketch by E. B. Thompson showed the locations and types of weapons proposed by the Board of Engineers for permanent fortifications on St. Johns Bluff (refer to Figure 10). The sketch accompanied Benyaurd’s January 1899, report for land acquisition for defensive purposes on St. Johns Bluff. The existing land lines and outlines of that portion of the bluff proposed for acquisition, an area containing approximately 103 acres of land, are delineated on the sketch. Existing batteries on St. Johns Bluff consisted of two 8-inch breech-loading rifles mounted in a permanent battery on 15-inch converted carriages—the Spanish-American War Battery—and a temporary battery with four 12-pound field guns. A site located to the south of the temporary battery on the northeast portion of Section 27, containing 40.33 acres parcel of land, was selected for the permanent Spanish-American War Battery. The United States Dock and Railway provided access to the batteries on the east side of the bluff. As initially proposed, the railway extended

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176. Ibid., 14.
178. Thompson, November 1898.
179. Ibid.
southeasterly along the west side of the
temporary battery and terminated on the west
side of the Spanish-American War Battery.\textsuperscript{180}

Vegetation noted on the eastern side of the bluff
consisted of hammock growth of palmetto, oak,
and hay.\textsuperscript{181} A footpath crossed the bluff from a
point on the US railway between the dock and
the temporary battery in a southwest direction
through a swamp and pond to a road identified
as “Old Road to Cosmo.” The basin at that time
was surrounded by hills ranging from 50 feet to
70 feet high.

The temporary battery location is depicted on
Thompson’s sketch between the two proposed
batteries on the crest facing St. Johns Creek, near
the northeast point of the bluff (refer to Figure
10). It initially housed two 5-inch rifles and the
two 7-inch howitzers.\textsuperscript{182} The Board of Engineers
also proposed four additional batteries on St.
Johns Bluff: a battery with four 6-inch mortars on
the northwest side of the temporary battery; a
battery with two 16-pounders on the southeast
side of the temporary battery; a battery with eight
12-inch mortars to the west of the permanent
Spanish-American War Battery; and a battery
with two 16-pounders on the northwest corner of
the reservation, north of cemetery noted as the
“Old cemetery.”\textsuperscript{183}

\textbf{Temporary Battery on St. Johns Bluff.} The
temporary battery site was prominently located
on the northeast corner of the bluff fronting St.
Johns Creek, on Section 43 of Township 1
South, Range 28 E. Work commenced on the
temporary battery prior to completion of the
wharf.\textsuperscript{184} Cook employed 10-foot-x-10-foot

\begin{itemize}
\item timbers in the temporary battery’s revetment
\item and magazine, which he covered with a sand
\item embankment partly surfaced with “marsh
\item muck.”\textsuperscript{185} On April 12, 1898, the Florida Central
\item & Peninsula (F. C. & P.) Railroad Company
\item delivered two 5-inch and two 6-inch rapid fire
\item carriages from Rock Island Arsenal, Illinois, to
\item their railyard at the foot of Julia Street in
\item Jacksonville.\textsuperscript{186} The carriages required
\item modification to accommodate the guns
\item scheduled for St. Johns Bluff.\textsuperscript{187} General Wilson
\item formally authorized Colonel Benyaurd to
\item proceed with the construction of defenses at St.
\item Johns Bluff, St. Augustine, and Miami on April
\item 14.\textsuperscript{188} Benyaurd estimated construction costs for
\item the three projects to be between $15,000 and
\item $20,000.\textsuperscript{189} In addition to overseeing the new
\item fortifications projects, Benyaurd had to manage
\item his regular peacetime civil works projects that
\item involved dredging harbors and navigable rivers
\item throughout Florida.

Benyaurd recommended to Wilson at least one
company of soldiers should be assigned to
\textbf{defend each of his four construction sites from
\textbf{potential enemy attack.\textsuperscript{190} There were two guns
\textbf{at Miami, four at St. Augustine, four at St. Johns
\textbf{Bluff, and six or eight batteries at Tampa.\textsuperscript{191} On
\textbf{April 22, the temporary gun emplacements were
\textbf{near completion when the two 5-inch breech-
\textbf{loading rifles and two 7-inch breech-loading
\textbf{howitzers from New York State reached
\textbf{Jacksonville. The newly arrived guns remained
\textbf{on a railroad siding in Jacksonville since there
\textbf{was no place to store them on the bluff.

The four guns were shipped down river on a
\textbf{barge to the bluff and mounted. The 5-inch
\textbf{breech loading rifle weighed 3,600 pounds; it

\begin{itemize}
\item 180. \textsuperscript{ibid.}
\item 181. \textsuperscript{ibid.}
\item 182. \textsuperscript{ibid.}
\item 183. \textsuperscript{ibid.}
\item 184. \textsuperscript{Buker refers to a sketch of the bluff by E. B.
\textbf{Thomson surveyed in November 1898 for the
\textbf{location of the wharf and temporary battery
\textbf{(NARA RG 77, Fortifications File, Drawer 191,
\textbf{Sheet 2).}
\item 185. \textsuperscript{Buker, 12-13.}
\item 186. \textsuperscript{ibid., 13.}
\item 187. \textsuperscript{ibid.}
\item 188. \textsuperscript{ibid., 14.}
\item 189. \textsuperscript{ibid.}
\item 190. \textsuperscript{ibid., 16.}
\item 191. \textsuperscript{ibid., 17.}
\end{itemize}
fired a 45-pound projectile that could penetrate 2.5 inches of steel at 3,500 yards. The 7-inch breech-loading howitzer weighed 3,710 pounds; it fired a 105-pound projectile capable of penetrating 2.4 inches of steel at 3,500 yards.

As troops were not sent to operate the guns, Benyaurd assigned John Cook with the responsibility of the temporary battery's security. The temporary battery's guns and carriages were soon dismounted. On May 18, the materiel was shipped to Tampa for the Army Expeditionary Force's invasion of Cuba. The first soldiers arrived in Jacksonville at Camp Cuba Libre four days after the removal of the temporary battery. To provide some defense for the river, four light 12-pounder field guns were sent to the temporary battery site. These outmoded, muzzle-loading, smoothbore guns were mounted in the temporary emplacement.

Mine Defense of the St. Johns River and St. Johns Bluff. An electrically controlled mine field, a key component of Endicott System defenses, was planned for St. Johns River. At an April 15 meeting in Jacksonville, Colonel Benyaurd requested a progress report on the city's mine defense program, which was essential to his defenses on St. Johns Bluff. However, no work had commenced on the mine field as the committee of citizens believed that the government was providing all the necessary funds and materials for the mine field. Benyaurd immediately ordered the necessary material and enlisted local support to the lay the mines in the river. He ordered 1,800 pounds of dynamite from C. B. Smith of Jacksonville. Most of the other necessary materials were available or manufactured by the Merrill-Stevens Engineering Company located on East Bay Street in the city.

To facilitate mining the river, Colonel Benyaurd tasked 1st Lt. W. W. Harts to design, install, and operate the mine field. In early May, Benyaurd requested additional funds for the mine defense program. He had initially hoped the Florida Naval Militia would patrol the mine field. Lieutenant Harts first deployed the mines in the same month. A temporary mine casemate, a wooden building measuring 16 feet by 25 feet located on the bluff, held the terminals of the submarine cables to the planted mines. On June 10, the temporary casemate was destroyed by an accidental explosion caused during the testing of mine plugs. Two electricians, J. J. O'Rourke and Edward Houston, died in the explosion, and Lieutenant Harts incurred severe wounds during the incident. The injured Harts was replaced by Captain R. P. Johnston the following day. Five days after the signing of the peace protocol, Benyaurd lifted the navigation restrictions on the river. Captain Johnson deactivated the mine field in September. The Corps of Engineers had shipped dynamite and mine casing in their first shipment to the bluff, leaving the original 1,800 pounds of dynamite intact, which was sold back to C. B. Smith. The mine cables were sent to the cable storage tank at Tampa.

192. Buker, 19
193. Ibid., 19-20.
194. Ibid.
195. Ibid., 21.
196. Ibid., 14.
197. Ibid., 14-15.
198. Ibid., 15.
199. Ibid.
200. Ibid., 19.
201. Ibid., 21.
202. Ibid., 22.
203. Ibid., 23.
204. Ibid., 24.
205. Ibid., 25.
206. Ibid., 28.
207. Ibid., 34.
On April 27, 1898, two days after the United States declared war, General Wilson issued an order to build a permanent emplacement for two 8-inch breech-loading rifles on St. Johns Bluff. The new battery required Colonel Benyaurd to modify his plans for the bluff. A site located approximately 1,200 feet southeast of the temporary battery on Section 27 of Township 1 South, Range 28 E, was selected for the Spanish-American War Battery (refer to Figure 10).

Benyaurd submitted a formal design for an emplacement for two 8-inch on breech-loading (B. L.) rifles with an accompanying letter to the Chief of Engineers on June 14, 1898 (Figure 11). The design shows the remaining concrete battery for the two pivoting rifles on the bluff, which, with the tree cover removed, allowed a 180-degree view up and down St. Johns Creek.

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208. Bucher, 17.
Construction of the permanent battery entailed site preparation, charting the lines for a new gunpit, constructing a 1,200-ft extension of the railroad track, drilling for water, and erecting a building to store the cement. Seven hundred barrels of cement were shipped and stored on St. Johns Bluff. Shell for the concrete also was procured and piled near the new site. Crushed stone was supplied by Georgia Quincy Granite Company near Sparta, Georgia, and transported to Jacksonville on the F.C. & P. Railroad.

By early July 1898, coinciding with American victories at San Juan and El Caney, excavation for the Spanish-American War Battery’s 8-inch gun emplacements was completed, and the bomb-proof magazine for ammunition was near completion (Figure 12). Crushed stone for the foundations proved difficult to obtain during the war.

After the peace protocol was signed on August 12, a high priority remained for the completion of the 8-inch gun emplacements. A rock crusher was rented in Jacksonville to increase the supply of crushed stones the following month. In November, John Cook notified Colonel Benyaurd additional funds were necessary to resume construction on the emplacement.

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211. Ibid.
212. Ibid., 26.
213. Ibid.
214. Ibid.
215. Ibid., 20.
216. Ibid., 29.
217. Ibid.
Benyaurd could not supply additional funds for the project. Since the guns needed to be mounted as quickly as possible, Benyaurd suggested to Cook that the original height planned for the concrete pit might have to be reduced.\textsuperscript{218} He also told Cook installation of all the doors in the plan was not necessary.\textsuperscript{219} Nevertheless, Benyaurd was forced to request more money. When the 8-inch guns were authorized, additional rail tracks were rented to extend the railway to Spanish-American War Battery. In November, Benyaurd received an invoice for $100 for the use of the rails until January 1, 1899.\textsuperscript{220}

On December 10, the peace treaty was signed in Paris as construction continued at St. Johns Bluff. The 8-inch guns remained at the foot of the bluff on the rental tracks because construction of the emplacement was still ongoing. General Wilson ultimately approved an additional $400 for the purchase of the rails from the owner to complete the construction of the permanent battery.\textsuperscript{221} In January 1899, two 8-inch breech-loading rifles were mounted at the Spanish-American War Battery.\textsuperscript{222} Each gun weighed 32,480 pounds and could fire a 300-pound projectile capable of penetrating 10.6 inches of steel at 3,500 yards.\textsuperscript{223} The concrete cover over the magazines was left unfinished, and the sand was not placed over the magazines. Further work on St. Johns Bluff was suspended.\textsuperscript{224}

The crest of the Spanish-American War Battery had an elevation of 73.27 feet; this elevation was taken from the top of the concrete wall in front of the guns.\textsuperscript{225} The earthwork crest was 11 inches above the wall at that time.\textsuperscript{226} A position finding station was located to the south of the permanent battery. It was marked by a tack driven into a maple stake squared off roughly and driven within ten inches of the surface of the ground.

Captain Charles H. McKinstry and two assistant engineers conducted a survey of St. Johns Bluff from November 14 to December 6, 1899.\textsuperscript{227} The Spanish-American War Battery was identified as a permanent battery for two 8-inch B. L. guns on altered 15-inch S. B. carriages. A notation on McKinstry’s site plan indicates that the guns had not been mounted by that time (Figure 13 and Figure 14). The railroad track was documented on the east side of the Spanish-American War Battery in contrast to Thompson’s earlier 1898 sketch which placed the track on the west side of the battery. Oak trees on the southwest side of the battery were five to twelve inches in diameter with heights of up to 30 feet.

Surrounding vegetation consisted of thick brush of scrub oak, myrtle, and holly.\textsuperscript{228} To the north, the temporary Battery Field or Siege Gun had expanded with the addition of six unidentified ancillary structures (refer to Figure 28).

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\textsuperscript{218} Bucer.
\textsuperscript{219} Ibid.
\textsuperscript{220} Ibid.
\textsuperscript{221} Ibid., 30.
\textsuperscript{222} Ibid.
\textsuperscript{223} Ibid.
\textsuperscript{224} Ibid.
\textsuperscript{226} Benyaurd, March 11, 1899.
\textsuperscript{228} McKinstry.
FIGURE 13. Spanish-American War Battery in February 1899, showing range of fire. (Source: Capt. C. H. McKinstry, December 28, 1899)

FIGURE 14. Layout of Spanish-American War Battery and bombproof magazine in December 1899. (Source: Benyaurd, 1899 [March])
The 8-inch guns were never serviced by troops or test fired by the Corps of Engineers.229 Prior to his transfer, Benyaurd hired B. J. Starling at $60 per month to live on the military reservation as a watchman to perform minor repairs to the buildings and to clean and protect equipment needed as needed.230

At the close of Benyaurd’s tour of duty in Florida, he was relieved by his former assistant Capt. Charles H. McKinstry, who had been in charge of the fortifications at Key West during the war.231 One of McKinstry’s major tasks was to dismount and ship the remaining weapons from St. Johns Bluff. On July 1899, he tasked Charles Sperry to prepare a sketch of buildings used for storage, titled “Relative Positions of Buildings at St. Johns Bluff, Fla.”232 The six buildings were clustered in the area north of the temporary battery, and included: a 22-ft by 12-ft kitchen; a 50-ft by 12-ft stable, where wheelbarrows, iron pipes, and barrels belonging to National Defense were stored; a 16-ft by 12-ft vacant dwelling; a 30-ft by 12-ft watchman’s house; an 18-ft by 12-ft National Defense storehouse; and a cross-shaped torpedo storehouse with a 81-ft by 17-ft main block and lesser wings contained all of the submarine mining material (refer to Figure 28).233

On September 28, 1899, the Quartermaster, Department of the Gulf, Atlanta, Georgia, informed McKinstry that E. Winchenback of Jacksonville was awarded a contract to remove the ordnance from the bluff.234 The two 8-inch guns were to be sent to Fort McRae, near Pensacola.235 The four 12-pounders from the temporary battery were sent to the Augusta Arsenal in Georgia. The Spanish-American War Battery was abandoned in October 1899.236

**William Henry Harrison Benyaurd.** Born in Philadelphia in 1841, William Henry Harrison Benyaurd graduated from the US Military Academy at West Point, New York, as part of the Class of 1863 (Figure 15).237 As a First Lieutenant, Corps of Engineers, his initial assignment was assistant engineer of the Defenses of Pittsburgh from June 15 to August 3, 1863.238 During the Civil War, Benyaurd engaged in various engineering projects for the Union Army ranging from constructing bridges, building block houses and defensive works, conducting surveys, to establishing roads. He received the Medal of Honor for most distinguished gallantry in the Battle of Five Forks, Virginia, on April 1, 1865.239 Benyaurd returned to West Point from August 1865 to August 1869, serving first in command of the Engineer Company and then as Assistant Professor of Engineering.240 In the following years to the outbreak of the Spanish-American War, he was charged with important Corps of Engineers projects.241 By July 1889, he had breveted to lieutenant colonel.242

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229. Buker, 30.
230. Ibid., 30-31.
231. Ibid., 31.
232. Buker notes Sperry’s 1899 sketch map is on graph paper in the RG 77 Engineers files, Entry 1170, Box 1, Folder September 1899 (Buker, 35). The name of the sketch map is referenced in Prettyman, 12.
234. Ibid., 34.
235. Ibid.
From January 7, 1896, to June 3, 1899, Benyaurd oversaw the fortifications and river and harbor works in Florida. He superintended the construction of defenses at St. Johns Bluff, St. Augustine, Key West, and Tampa. Surveys were made under his direction. Benyaurd was transferred to New York City after the war, where he died on February 7, 1900.

**St. Johns Bluff: Early to Mid-Twentieth Century**

After the Spanish-American War, the United States government maintained the military reservation at St. Johns Bluff. The bluff remained undeveloped except for the extant military facilities. Land tenure disagreements resumed after the war. In September 1899, Captain McKinstry assigned Assistant Engineer J. W. Sackett to determine ownership and appropriate real estate values for the land in the military reservation. Sackett recommended condemnation proceedings for the land in question based on two factors: the exorbitant property prices requested by the landowners and the inability to secure a clear title of ownership.

On April 25, 1901, the Circuit Court of the United States, 5th Judicial Circuit, Southern District of Florida, reached its decision in the condemnation by granting the United States 117.7 acres on St. Johns Bluff for future development of forts and coast defenses.

No further military development occurred on St. Johns Bluff following the land acquisition (Figure 16). Several maps produced in the 1900s and 1910s document the military reservation and St. Johns River. In 1901, the Corps of Engineers prepared a map showing proposed defenses at St. Johns Bluff which identifies the Spanish-American War Battery, two proposed search lights on the east side of the St. Johns Bluff above the St. Johns Creek, and a generating plant near the US Dock.

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243. Ibid., 128.
244. Ibid., 127.
245. Buker, 39.
246. Ibid., 40.
247. Ibid., 41.
above the river. The map shows a 30-inch search light in the vicinity of the Spanish-American War Battery to the southeast and a 24-inch search light in the general area of the temporary battery. A 1903 US Corps of Engineers sketch shows a single structure, a torpedo storehouse, on the northeast point of the bluff (Figure 17). Francis Shunk’s February 1904 sketch of the military reservation documents the Spanish-American War Battery, temporary battery with ancillary buildings, railway, and dock (Figure 18). Based on a review of available maps, Shunk’s 1904 sketch is the last known map to record the support facilities on the military reservation. A series of Corps of Engineers drawings of the St. Johns River dating from 1906 through 1916 identify the Spanish-American War Battery and temporary battery (refer to Figure 29).

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250. Francis R. Shunk, *Sketch showing additional data for Harbor Chart, St. Johns River, Fla. US Engineer Office, St. Augustine, Fla., February 2, 1903, To accompany letter of this date to the Chief of Engineers. NARA RG 77, Forts File Drawer 191-5-4.*


252. Chief of Engineers Series (NARA RG 77), Fortifications Map File, Drawer 191-8-2-through 191-8-10.

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In the years leading up to World War I, the United States reassessed its seacoast defense system as the Endicott fortifications were functionally obsolete. The War Department evaluated St. Johns River and determined there was no major naval military threat to Jacksonville. On August 25, 1915, the War Department Board of Review made the recommendation for no fixed armament along the St. Johns River. The US government continued ownership of the decommissioned St. Johns Bluff military reservation. The US Geological Survey in cooperation with the War Department conducted a topographical survey in 1918, which delineated...
section parcels lines on St. Johns Bluff. Located on Section 27 on the bluff, the Spanish-American War Battery does not appear on the 1918 map (Figure 19). One unidentified structure appears on northeast corner of St. Johns Bluff, northwest of the Spanish-American War Battery. Located in Section 43, the unidentified structure is likely the torpedo storehouse as previously documented in 1903.

On March 4, 1923, the US Congress authorized the sale of St. Johns Bluff. Arthur Tilman Williams, president of the Florida Realty Investment Corporation, contracted with the government to purchase the St. Johns Bluff military reservation for $53,839.38. By September, there were three additional investors. Arthur Williams, the largest shareholder, died in 1932.

The Historic American Buildings Survey documented the Spanish-American War Battery in 1934 (Figure 20 and Figure 21). Two additional photographs of the battery were taken circa 1940 (Figure 22 and Figure 23). These photographs capture the existing pre-World War II conditions of the battery and the surrounding dense tree cover. On August 18, 1943, the St. Johns Bluff – Fort Caroline, Inc., acquired the military reservation. No development had occurred within the military reservation during first period of private ownership. A 1943 aerial photograph of St. Johns Bluff shows a northeast-southwest road (current Fort Caroline Road) extending from the northeast corner of the bluff to the main road to the south (Mt. Pleasant Road [Figure 24]). The Spanish-American War Battery is not discernable in the photograph as the surrounding area consisted of woods.


254. Ibid.

255. Bcker, 43.

256. Ibid.

257. Ibid., 43-44.

258. HABS, Spanish American War Fort, St. Johns Bluff, Duval County, Florida.

259. Bcker, 44.

1. **FIGURE 21.** Spanish-American War Battery, St. Johns Bluff in 1934. (Source: HABS FL-15-2)

2. **FIGURE 22.** Magazine of the Spanish-American War Battery, St. Johns Bluff circa 1940. (Source: State Archives of Florida)²⁶¹

3. **FIGURE 23.** Spanish-American War Battery, St. Johns Bluff circa 1940. (Source: State Archives of Florida)²⁶²

4. **FIGURE 24.** Aerial photograph showing St. Johns Bluff. (Source: US Department of Agriculture, 1943)

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During World War II, St. Johns Bluff-Ft. Caroline, Inc., adopted and dedicated their surveyed plat map of St. Johns Bluff Estates subdivision to Duval County on December 18, 1944. The original plat for St. Johns Bluff Estates consisted of 82 parcels laid out on both sides of Fort Caroline Road, a 100-foot-wide two-lane road. The Spanish-American War Battery straddles Lots 33 and Lot 34 of the subdivision. Parcels in the eastern section of the subdivision measure 100 feet wide and 150 feet deep. In January 1945, Duval County approved the plat for St. Johns Bluff Estates subdivision. Jacksonville experienced an economic boom during the war with the buildup of three military installations.

By 1947, Fort Caroline Road had been completed on St. Johns Bluff as an improved dirt road (refer to Figure 30). Two structures and a segment of road to the future site of Ribault Monument (West Fort Caroline Park Road) were documented on the bluff on the 1950 topographic map (Figure 25). The northernmost structure is a single-family residence built in 1946 (13015 Fort Caroline Road). The structure on the east side of the bluff, northwest of the Spanish-American War Battery, was not identified. Two light towers (Lt with circle symbol on map—not lighthouses) were located on the north side of the bluff. The structure previously documented in 1918 on the northeast point of St. Johns Bluff does not appear on the 1950 topographic map.

In 1953, the National Park Service established Fort Caroline National Memorial along the southern bank of the St. Johns River northwest of the Spanish-American War Battery. The eastern boundary of the park borders St. Johns Bluff Estates. Fort Caroline National Memorial commemorates the first French-Protestant settlement in the New World. In 1958, the northeast point of St. Johns Bluff became the permanent site for the Ribault Monument and part of the new National Park site, Fort Caroline National Memorial (refer to Figure 30).

Residential development continued in St. Johns Bluff Estates near the Spanish-American War Battery in the 1950s and 1960s (Figure 26). A

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264. Ibid.
265. Ibid.
single-family home was built on the adjacent parcel to the north of the Spanish-American War Battery in 1960.²⁶⁹

Timucuan Ecological and Historic Preserve

President Ronald Reagan signed Public Law 100-249 on February 16, 1988, creating the Timucuan Ecological and Historic Preserve, which included the Theodore Roosevelt Preserve. Public Law 100-249 was created to preserve certain wetlands and historic and prehistoric sites in the St. Johns River Valley. Title II of the act authorized the Secretary of the Interior to acquire lands within the Preserve by donation, purchase or exchange.²⁷⁰ The Spanish-American War Battery was identified in the Act as one of the original eight “sites of significant historical interest” specified in the Act, which also included:

- Spanish sixteenth-century forts San Gabriel and San Estaban
- Spanish eighteenth-century fort Dos Hermanas
- English eighteenth-century forts at St. Johns Bluff and Fort George Island
- Spanish sixteenth- and seventeenth-century mission San Juan del Puerto
- Site of the American Revolutionary War battle of Thomas Creek
- The Zephaniah Kingsley plantation, with its eighteenth- and nineteenth-century buildings
- The Confederate fort known as Yellow Bluff Fort State Historic Site.²⁷¹

The 1988 legislation also amended a 1950 act which provided for the acquisition, investigation, and preservation of lands associated with Fort Caroline on St. Johns Bluff. Congressman Charles E. Bennett, the local representative in Congress from 1949 to 1992, authored both of the acts. The NPS had expressed interest in the privately-owned parcel after the establishment of the preserve.

President William J. Clinton officially designated St. Johns River an American Heritage River on July 30, 1998, in recognition of its ecological, historic, economic, and cultural significance.²⁷² The Spanish-American War Battery is one of numerous historic sites along the St. Johns River that contributes to designation as an American Heritage River.

Spanish-American War Battery: Twenty-first Century

The Spanish-American War Battery property remained in private ownership at the beginning of the twenty-first century. The land continued to be undeveloped and overgrown in the 2000s and 2010s. NPS staff cleaned the site every few years by removing weeds and trash to reduce risk of injury.²⁷³ In August 2011, the NPS conducted a one-day cleanup project of the Spanish-American War Battery property which entailed removal of vegetation, litter, and eroded soil from the exterior and interior rooms of the structure.²⁷⁴ By that time,
the fortification had continued to withstand the
continued effects of expanding metals, intrusive
vegetative growth, vandalism, and masonry
deterioration.\textsuperscript{275}

The Ida M. Stevens Foundation, a non-profit
organization, owned the Spanish-American War
Battery site property until 2013, when the
foundation lost ownership due to unpaid taxes.\textsuperscript{276}
A real estate investor, David Radcliffe, purchased
the 3-acre property for $101,000 in a September
2013, deed sale.\textsuperscript{277} He reportedly purchased the
land without any prior knowledge of the
fortification.\textsuperscript{278} He placed the parcel, large enough
for two residences, on the real estate market for
$500,000 dollars; the fortification was at risk for
possible demolition.\textsuperscript{279} In 2015, the NPS and the
NFLT began collaborating to save the Spanish-
American War Battery site. Discussions ensued
between Radcliffe and the NPS about the prospect
of the federal government acquiring the
property.\textsuperscript{280} Radcliffe offered to sell the property
to NFLT for $400,000.\textsuperscript{281} In the fall of 2015, NFLT
signed a one-year purchase option to prevent the
sale of the site to other interested buyers.\textsuperscript{282}

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\textsuperscript{275} Ibid., 12.

\textsuperscript{277} Max Marbut, “City considers partnership to preserve historic fort.” Financial News & Daily Record, July 27, 2016.


\textsuperscript{279} Marbut.
\textsuperscript{280} Ibid.
\textsuperscript{281} Ibid.
\textsuperscript{282} Patterson, The Florida Times Union, June 27, 2016.

\textsuperscript{277} Ibid.
\textsuperscript{284} Marbut.


\textsuperscript{285} National Park Service, “A Spanish American War Fort Now Protected by Timucuan Ecological & Historic Preserve.”

\textsuperscript{286} North Florida Land Trust.

\textsuperscript{288} Ibid.

\textsuperscript{289} National Park Service, “A Spanish American War Fort Now Protected by Timucuan Ecological & Historic Preserve.”
Spanish-American War Battery Timeline

1513 Spanish explorer Juan Ponce de Leon claimed La Florida for Spain on April 3.

1562 French Huguenot explorer Jean Ribault (circa 1520-1565) and his small fleet entered St. Johns River on May 1. The French take possession of the territory and placed a monument on the south side of the river, west of St. Johns Bluff near Mayport.

1564 René Goulaine de Laudonnière (circa 1529–1574) established Fort Caroline, the first defensive works constructed on St. Johns Bluff.

1565 The Spanish under the command of Pedro Menéndez de Avilés captured Fort Caroline in September.

1564 René Goulaine de Laudonnière (circa 1529–1574) established Fort Caroline, the first defensive works constructed on St. Johns Bluff.

1565 By treaty, Great Britain acquired Florida from Spain in exchange for Havana, Cuba, and assumed control of the territory in the following year.

1770s “St. Johns Town” established on a 200-acre tract owned by William Hester on St. Johns Bluff.

1777 The British fortified St. Johns Bluff with cannon in May.

1783 Great Britain ceded Florida back to Spain.

1784 The Spanish erected a battery designated San Vincente Ferrer (St. Vincent Ferrer) on St. Johns Bluff. Two plantations were established on the bluff thereafter.

1817 Zephaniah Kingsley, who owned Fort George and other area plantations, purchased both tracts of land on St. Johns Bluff.

1821 Florida formally transferred by Spain to the United States.

1822 Duval County established on August 12. Jacksonville established and selected as county seat.

1862 Confederate Army constructed earthworks on St. Johns Bluff.

1898 On February 15, USS Maine exploded in the port of Havana. Five days later, Florida Governor William Bloxham instructed Jacksonville Naval Militia to conduct a reconnaissance of the Atlantic coast.

1898 On March 31, a joint resolution of Congress allows the construction of temporary fortifications by the government upon written consent of the owners. A week later Lieutenant Colonel William H. H. Benyaurd received the owners’ permission to build temporary fortifications on St Johns Bluff.

1898 City of Jacksonville notified of the Secretary of War approval of orders for guns and mines on April 2. Brigadier General John M. Wilson, Chief of Engineers, instructed Lt. Col. Benyaurd, the district engineer, and instructed him to coordinate with Jacksonville citizens to select a site for four modern siege guns for torpedo defense.

1898 On April 11, construction of a temporary battery began at St. Johns Bluff. The Corps of Engineers hired John M. Cook of Spartanburg, South Carolina, to oversee construction.

1898 On April 12, two five-inch breech-loading rifles and two seven-inch breech-loading howitzers for St. Johns Bluff arrived at Jacksonville.

1898 Colonel Benyaurd prepared for the mining of St. Johns River. American flag hoisted on the bluff on April 15.

1898 The United States formally declared war against Spain on April 25.

1898 On April 27, General Wilson issued orders to build a permanent emplacement, the Spanish-American War Battery on St. Johns Bluff, for two eight-inch breech-loading rifles. The new fortification site was 1,200 feet southeast of the temporary battery on the bluff facing St. Johns Creek.
1898 The guns for the fort were sent to Tampa on May 18 and replaced by four obsolete twelve-pounder field guns from Jacksonville.

1898 Two electricians, J. J. O'Rourke and Edward Houston, died in an explosion while conducting a torpedo plug at the Fort on June 10. Lieutenant Harts incurred severe wounds during the incident.

1898 A peace protocol between the United States and Spain was established on August 12.

1898 Treaty of Paris signed on December 10.

1899 Two eight-inch, breech-loading rifles, each weighing 32,840 pounds, were mounted in January.

1899 Fortification abandoned in October. The two eight-inch guns were dismantled and sent to Fort McRee, near Pensacola, Florida. The four twelve pounders were sent to Augusta Arsenal and in Georgia.

1900 All ancillary buildings on the site reported demolished by 1900, leaving only the cement gun emplacement.

1901 On April 25, the Circuit Court of the US 5th Judicial Circuit, Southern District of Florida, reached decision for the condemnation of the land at St Johns Bluff. The United States received 117.7 acres on St. Johns Bluff for a military reservation and future construction of forts and coast defenses.

1904 Francis R. Shunk sketched a map of US Military Reservation, St. Johns Bluff, Florida.

1915 On August 23, the Department Board of Review meeting determined St. Johns River did not require fixed armament.

1923 March 4, Congress authorized the sale of St. Johns Bluff.

1925 On June 1, Arthur Tilman Williams, president of the Florida Realty Investment Corporation, contracted with the government to purchase the St. Johns Bluff military reservation for $53,839.38. By September 9, Williams included three other investors in the ownership of the military reservation.

1934 HABS recordation of Spanish-American War Battery.

1943 On August 18, St. Johns Bluff – Fort Caroline, Inc., acquired the military reservation.

1944 On December 18, Fort Caroline, Inc. platted the former military reservation land under the title of “St. Johns Bluff Estates.”

1988 President Ronald Reagan (1911-2004) signed Public Law 100-249 on February 16, 1988, creating the Timucuan Ecological and Historic Preserve. The Spanish-American War Battery identified in the Act as one of the original eight “sites of significant historical interest” in the Preserve.


2000 The Spanish-American War Battery property privately owned at the beginning of the twenty-first century.

2011 The NPS conducted a cleanup of the “Spanish-American War Battery” property in August.

2013 Fort property sold at a tax-deed auction to a real estate investor.

2016 North Florida Land Trust purchased the Spanish-American War Battery property.

2018 North Florida Land Trust transferred title of the battery to the NPS on December 14. The fortification became a component of the Timucuan Ecological and Historic Preserve.
St. Johns Bluff (also called Hester's Bluff)

Approximate shoreline 1860s

Bluff fortified by cannon during British occupation 1777

Confederate defensive works placed on St. Johns Bluff 1861, destroyed during Battle of St. Johns Oct. 1862

St. Johns Bluff (also called Hester's Bluff)

St. Johns River

Rivière de Mai (1562); river renamed San Mateo (1565); river later renamed San Juan; river known as St. Johns River after 1763

Town of St. Johns Bluff established by British 1779 (approximate location), log houses constructed between 1779-1782, town renamed St. Vincent Ferrer 1783-1785 after Florida ceded back to Spain, later dismantled and abandoned

Marquis of Waterford given 20,000 acres of land on south side of river 1763, later deeded to William Hester

Notes:
1. Dimensions and locations are approximate, based on field observations, NPS-provided GIS data, and GIS data from the Florida Geographic Data Library.
2. Fort de la Caroline established in area by Huguenots 1564; renamed San Mateo by Spanish 1565. Location unknown.
3. Camp of Menendez established in area 1565. Location unknown.

Sources:
United States Coast and Geodetic Survey. Preliminary Chart of St. John's River, Florida, from Entrance to Brown's Creek. 1856, Revised 1879 and 1886.
103-acre site selected for defense installation April 11, 1898; included section 43 and portions of sections 44 and 27.

Shore eroded in 1880s-1890s.

Ponds and marshy areas.

33

34

28

27

44

43

103-acre site selected for defense installation April 11, 1898; included section 43 and portions of sections 44 and 27.

Shore eroded in 1880s-1890s.

Waterways

Roads/trails

Railroad

Buildings

Structures

Section lines

U.S. Military Reservation

Legend

Notes:

1. Dimensions and locations are approximate, based on field observations, NPS-provided GIS data, and GIS data from the Florida Geographic Data Library.

Sources:


Figures 27. Period Plan 1863–1899
117.7 acres officially deeded to U.S. in 1901, authorized for sale 1923, eventually acquired by St. Johns Bluff - Fort Caroline, Inc. in 1943 and platted 1944

Most structures near temporary battery taken down between 1901 and 1906

117.7 acres officially deeded to U.S. in 1901, authorized for sale 1923, eventually acquired by St. Johns Bluff - Fort Caroline, Inc. in 1943 and platted 1944

Spanish-American War Battery documented by HABS 1934

Dock pilings washed away 1900

"Station Battery"

Spanish-American War Battery documented by HABS 1934

Torpedo store house remained until c.1918

Notes:
1. Dimensions and locations are approximate, based on field observations, NPS-provided GIS data, and GIS data from the Florida Geographic Data Library.
2. Aerial underlay source: Historical Imagery 1943, provided to report authors by NPS.

Sources:


Existing Conditions

Introduction

This chapter describes, through narrative text, photographs, labeled base mapping, and analytical diagrams, the current conditions and extant landscape features associated with the Spanish-American War Battery property and its setting within the St. Johns Bluff community of Duval County, Florida.

The chapter is composed of four sections. The first section addresses the Environmental Context and Setting for the Spanish-American War Battery property. The section sets the property within a physiographic, geologic, topographic, and hydrologic framework, while also describing the plant and animal communities present, and climatic conditions associated with the region. The second section addresses the Cultural Context and Setting for the property, describing regional important road corridors, community demographics, and nearby cultural attractions.

The third section describes the Spanish-American War Battery in its entirety. The fourth and final section describes each of the individual landscape features that together comprise the Spanish-American War Battery property. The features are organized by landscape characteristic.

Landscape characteristics range from large-scale patterns and relationships to site details and materials. The following landscape characteristics are used to document existing conditions within this section:

- **Natural systems and features.** These are the environmental resources and qualities that have influenced the development and physical form of a landscape. They include the underlying landform, soils, and water resources, as well as attendant native plant communities.

- **Topography.** Topography is the three-dimensional configuration of the landscape surface characterized by features and orientation.

- **Spatial organization.** This is the three-dimensional organization of physical forms and visual associations in the landscape, including the articulation of ground, vertical, and overhead planes that define and create spaces.

- **Land use.** This addresses the principal activities in a landscape that form, shape, and organize it as a result of human interaction.

- **Circulation.** This represents the patterns, features, and applied material finishes that constitute the systems of movement in a landscape.

- **Vegetation.** This includes the deciduous and evergreen trees, shrubs, vines, ground covers, and herbaceous plants that have been introduced in a landscape by cultural activities.

- **Buildings and structures.** These are elements constructed primarily for sheltering any form of human activity in a landscape and constructed for functional purposes other than sheltering human activities.

- **Views and vistas.** Views are generally defined as being expansive and panoramic prospects, whether naturally occurring or designed. Vistas are deliberately designed views often meant to orient the gaze to a linear feature or particular focal point.
Small-scale features. These are the elements providing detail and diversity for both functional needs and aesthetic concerns in a landscape.

Archeological sites. These are the traces, or deposited artifacts, in a landscape that suggest former activities and uses.

Environmental Context and Setting

Timucuan Ecological and Historic Preserve is a 46,000-acre unit of the National Park System located along the North Florida coast northeast of the city of Jacksonville (Figure 31).

More than 75 percent of the preserve’s acreage is composed of inland waterways and wetlands associated with an extensive estuarine system of salt marsh, coastal hammock, and marine and brackish waters. The remainder of the preserve is composed largely of sea and marsh islands.

The Nassau River forms the northern boundary of the preserve, while Little Talbot Island and the Atlantic Ocean bound Timucuan Ecological and Historic Preserve on the east. St. Johns River edges portions of the preserve to the south, except for the parcels associated with Fort Caroline, the Ribault Monument, Theodore Roosevelt Area, and the Spanish-American War Battery, which are edged by residential and commercial development. The western preserve boundary is irregular, and generally follows the margins of coastally impacted marshland south of Nassau River and north of St. Johns River. Within the authorized boundary of the park are three inholdings associated with residential developments on Pearson Island, Fanning Island, and Black Hammock Island.

Physiography

The eastern portion of North Florida lies within the lower Atlantic Coastal Plain physiographic province and spans the embayed and Sea Island physiographic sections. Landforms associated with the Atlantic Coastal Plain include barrier islands, lagoons, estuaries, coastal ridges, sand dune ridges, and relict spits and bars with intervening valleys. Much of the preserve lies within the St. Marys Meander Plain, a subdivision of the Atlantic Coastal Plain. Within the confines of the St. Marys Meander Plain are the Nassau and St. Marys Rivers and a network of abandoned river channels and tributaries. The area south of St. Johns River is a separate subdivision referred to as the Eastern Valley.

The Sea Islands are part of a barrier island system that extends between the Santee River in South Carolina and the north bank of the St. Johns River. The Sea Islands are separated from the mainland by meandering tidal creeks that flow through fluvial and tidal sedimentation and the salt marshes that occupy the area between beach ridges. As barrier islands, these landforms absorb energy from tides and waves before it reaches the mainland and allow sediments from mainland rivers to be deposited in the sheltered area behind the islands. Fort George and Big and Little Talbot Islands are part of the Sea Island system. The Eastern Valley located to the south of the St. Marys Meander, which encompasses the Spanish-American War Battery, is less embayed.


Stowell, 2.

Stowell, 2.

Landforms associated with the Atlantic Coastal Plain in this area are composed of ancient marine terraces that parallel the coast. The terraces formed during the Pleistocene Epoch when sea levels rose and fell several times due to the advance and retreat of ice sheets associated with various ice ages. The fluctuations in sea level that occurred during the Pleistocene profoundly influenced the topography of Florida, as evidenced by present-day marine terraces. Each time sea level dropped, part of the sea floor was left exposed as a level plain or terrace. Over time, the level plains of the terraces have been altered by stream erosion. The terraces corresponding to the various Pleistocene era shorelines are referred to as Wicomico, set 100 feet above mean sea level (AMSL); Penholoway, set 70 feet AMSL; Talbot, set 42 feet AMSL; and Pamlico, set 25 feet AMSL.

The barrier islands were formed by sand deposition resulting from wind, water, and wave action. The height and form of sand deposits and dunes depends on wind patterns and the trapping of windblown sand by vegetation. Over time, dunes can become stabilized by salt-tolerant vegetation. St. Johns Bluff, where the Spanish-American War Battery is located, is a relict dune about 90 feet in elevation. It likely constitutes the highest point in the preserve, suggesting the original rationale for siting the coastal defense structure. In contrast, much of the preserve is relatively level and below 5 feet AMSL.

**Geology and Soils**

The preserve is geologically young and continues to evolve through deposition and erosion of unconsolidated materials. At a broad scale, Timucuan Ecological and Historic Preserve is underlain by undifferentiated sediments derived during the Pleistocene and more recent eras. The sediments include quartz sands and scattered clay lenses that contain shell and soft clay marl. These sediments occur within the terraces discussed previously with marine materials overlain by freshwater sediments. Below the Pleistocene deposits are Pliocene and Late Miocene sediments composed of unconsolidated sand, shell, clay, and limestone. The limestone at the base of these deposits is an important water-yielding zone of a surficial aquifer. Beneath the surficial aquifer, the Hawthorne Formation, which dates to the Middle Miocene, consists of gray to olive-green clay, sandy clay, and sandy limestone, with abundant interbedded phosphatic sand, limestone, and dolomites. The Hawthorne Formation ranges between 300 and 500 feet in thickness and functions as an aquitard or confining bed between the surficial aquifer and the lower Floridan aquifer. Below the Hawthorne Formation lies Eocene era limestone.

Soils of northeast Florida are partly sedimentary and partly derived from the weathering of underlying formations. As noted above, soils consist of quartz sands and clays. A principal source of Pleistocene sediments is erosion of the Piedmont physiographic province and the South Appalachian Mountains and the movement of materials southward by streams and long-shore currents. The St. Johns River is a natural barrier to this movement, and little or no silt or clay have accumulated farther south than the St. Johns River inlet because Florida upland rocks do not weather to produce such materials, and none of the rivers to the south drain true interior areas.

Soils within the region are grouped into five principal associations (Figure 32). Most of the salt marshes are composed of Tisonia mucky peat soil, which is saline or brackish where feeder streams enter, and flooded daily by tides. Soils underlying the Spanish-American War Battery property fall within the Tisonia association. The other four soil associations within the preserve include Leon-Ridgeland-Wesconnett, Mandarin-Kureb, Kershaw-Ortega, and Aquic Quartizipsammets-Fripp.
Timucuan Ecological and Historic Preserve is associated with both the Nassau and St. Johns Rivers. The Nassau River, forming the northern boundary of the preserve, originates in Duval County. The 54.8 river miles of the system drains approximately 400 square miles of Duval and Nassau Counties, discharging into the Atlantic Ocean through a 10-square-mile estuary. The Nassau River is not maintained as a navigable waterway by the US Army Corps of Engineers except for a portion of the drainage known as Fort George River.\textsuperscript{299}

The St. Johns River basin is the largest watershed to fall entirely within the state of Florida and the third largest drainage basin in all of Florida. It is also one of the few northward flowing rivers in the western hemisphere.\textsuperscript{300} The St. Johns drains 9,430 square miles, nearly one-sixth of the land area of Florida. The lower third of the 318-mile-long river is perennially tidal. Although the river is generally navigable almost to its source, portions are dredged for navigation and development. A major navigation channel is maintained between the mouth of the river and port facilities situated along both banks of the lower 24 miles of river.

Although the St. Johns River is dependent on rainfall for its flow, flooding occurs rarely since the capacity of the main stem to store water is tremendous because of the width of the channel between Palatka and Jacksonville, the low hydraulic gradients, several large lakes upstream from Palatka, and the low floodplain, which in places, is more than 10 miles wide. However, during periods of drought, the upper section can go nearly dry. Low water usually occurs between

\textsuperscript{299} Ibid., 45.

\textsuperscript{300} Ibid.
March and June, while high water is more typical between October and December.

Timucuan Ecological and Historic Preserve occurs near the confluence of the Nassau and St. Johns Rivers where an extensive estuarine system of salt marshes, coastal hammocks, and marine and brackish waters has formed. Portions of the salt marsh located within the preserve are considered among the least disturbed along the Atlantic Coast.

Estuaries, partly sheltered areas near river mouths where saltwater is diluted by freshwater from land drainage, perform a variety of valuable ecological functions that include atmospheric, climatological, and meteorological stabilization; groundwater discharge and recharge; flood, erosion, and storm surge control; water purification; nutrient accumulation and cycling; primary and secondary production; and wildlife refuge, including fish spawning and nursery habitat.

Underlying the region is the Floridan Aquifer, the principal groundwater source in the coastal lowlands of North Florida. The aquifer underlies all of Florida, southeast Georgia, and small parts of Alabama and South Carolina. In North Florida, the aquifer consists of a series of hydrologically connected, water-bearing zones composed of soft porous limestone, dolomite, and sand beds.

Plant Communities

Thirteen plant communities have been identified within the preserve. The most prevalent of these is coastal salt marsh. Pinelands occupy 5 percent of the total area of the preserve. Other communities include Hardwood Hammock and Forest, Xeric Oak Scrub, and Mixed Hardwood Pine Forest.

Prevalent species include longleaf (Pinus palustris), slash (P. elliottii), loblolly (P. taeda), and pitch (P. rigida) pines, as well as live (Quercus virginiana), southern red (Q. falcata), water (Q. nigra), swamp chestnut (Q. michauxii), and post oak (Q. stellata).

Other species present are Southern red cedar (Juniperus virginiana var. silicicola), water tupelo (Nyssa aquatica), winged elm (Ulmus alata), cabbage palmetto (Sabal palmetto), flowering dogwood (Cornus florida), and black cherry (Prunus serotina).

Several non-native plant species are classified as invasive and serve as a threat to the health of native plant communities within the preserve.

Wildlife Habitat

The various ecological zones in the preserve serve as habitat for pods of dolphins, flocks of migratory birds, and a number of rare and sensitive species, such as the Atlantic loggerhead sea turtle, West Indian manatee, wood stork, bald eagle, and smalltooth sawfish. Other abundant native species include white-tailed deer, gray fox, raccoon, opossum, marsh rabbit, gray squirrel, and the eastern mole.

Most of the amphibians and reptiles within the preserve are found in upland areas. Species present include the American alligator, spotted turtle, gopher tortoise, and diamond-back terrapin.

Based on a 1983 inventory, there are approximately 55 freshwater and 115 marine and estuarine fish species associated with the St. Johns River basin. Among the species present are several families of finfish as well as blue crabs, which contribute to important recreational and commercial fisheries in the lower St. Johns River and North Florida. The St. Johns River has been...
characterized as a vital nursery to the shrimp populations of the northeast coast of Florida; juvenile penaeid shrimp depend on the estuaries here as a nursery ground.

There are also several non-native mammals present within the park. Among them are feral pigs and the nine-banded armadillo.\(^{307}\)

**Weather and Climate**

Rainfall in the Jacksonville, Florida, area averages 50 inches per year, with rain occurring on average 113 days. The summer months are hot and humid, with an average high temperature in July of 91 degrees Fahrenheit. Winters are mild, with an average low in January of 44 degrees Fahrenheit. Snow occurs only very rarely.

**Cultural Context and Setting**

Timucuan Ecological and Historic Preserve falls within Duval County in the northeastern corner of the state of Florida. The county and the park are edged to the east by the Atlantic Coast.

Duval County is composed of the city of Jacksonville and four incorporated areas—Atlantic Beach, Neptune Beach, Jacksonville Beach, and Baldwin. Jacksonville serves as the county seat. The population of Jacksonville was recorded as 864,263 in the 2010 census and was estimated at 950,181 as of 2018.

Timucuan Ecological and Historic Preserve comprises several noncontiguous park units that include Fort Caroline National Memorial, Ribault Monument, Theodore Roosevelt Area, Kingsley Plantation, American Beach, and the Spanish-American War Battery (refer to Figure 31 and Figure 35). Currently, federal ownership of the preserve amounts to between 20 and 30 percent, and includes land administered by the US Army Corps of Engineers. The state of Florida also owns a considerable portion of the land within the preserve, including most of Fort George Island, much of Big Talbot Island, and the Yellow Bluff Fort site. The city of Jacksonville, Jacksonville Electric Authority, Duval County, private corporations, and conservation organizations also own some property with the preserve boundaries. Inholdings account for more than 300 private land and homeowners.\(^{308}\)

More than 1.2 million visitors were recorded as traveling to the park in 2019.\(^{309}\) Visitor and interpretive services are provided at two visitor centers—Timucuan Preserve at Fort Caroline and Kingsley Plantation. From Timucuan Preserve Visitor Center, many visitors travel to the Ribault Monument, a five-minute drive to the east along Fort Caroline Road. The site features a walk leading to the monument set high atop St. Johns Bluff (Figure 33). From the monument, visitors can experience expansive views of the preserve and St. Johns River. The monument is found in close proximity to the Spanish-American War Battery.

Farther to the south is the Theodore Roosevelt Area where visitors can follow self-guided walks or ride bikes on several trails. Preserve personnel also offer scheduled guided tours. North of St. Johns River is Kingsley Plantation, where visitors can enjoy self-guided and scheduled guided tours.

Recreational opportunities afforded within the preserve include boating and boat-related activities, as well as fishing and birding. The preserve is part of the Great Florida Birding and Wildlife Trail and East Coast Greenway trail system. Many other historical, natural, and recreational areas are found throughout the region.

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308. National Park Service, General Management Plan, 94.

The accessible areas of the preserve can be reached via several major roads and highways and by the St. Johns Ferry. Timucuan Preserve Visitor Center is located approximately 12 miles northeast of downtown Jacksonville and can be reached via Interstates 95 and 295. From I-295, visitors can follow an exit onto Monument Road that leads to Fort Caroline Road, which provides access to Fort Caroline National Memorial, the Ribault Monument, the Spanish-American War Battery, and Theodore Roosevelt Area. The St. Johns Ferry carries both automobiles and passengers, and it connects Mayport Village with Fort George Island near the eastern edge of the preserve.

In addition to the St. Johns and Nassau Rivers, visitors can access the preserve from Sisters Creek, which is part of the Intracoastal Waterway. It serves as the primary water connection between Fort Caroline National Memorial and Kingsley Plantation.

The preserve contains at least 200 archeological sites that provide physical evidence of some 6,000 years of human occupation. In addition to the archeological sites, the Timucuan Preserve also encompasses a variety of historic buildings and structures beyond the Spanish-American War Battery on St. Johns Bluff. Prominent among them are the Kingsley Plantation complex, the Fort George Club complex, and the Ribault Club complex, all located on Fort George Island; and the Yellow Bluff Fort near Dames Point. In addition to the historic resources, the reconstructed model of Fort de la Caroline at the foot of St. Johns Bluff and the Ribault Monument atop St. Johns Bluff commemorate the sixteenth-century French settlement of the region thought to have occurred within preserve boundaries.

**Site Description**

See, Figure 34. Existing Conditions Context Map, and Figure 35. Existing Conditions Parcel Map.

The Spanish-American War Battery property is rectangular in form and extends in a northeast-southwest direction between Fort Caroline Road and St. Johns Creek (Figure 34 and Figure 35). The eastern-northeastern margin of the property is somewhat irregular where it follows St. Johns Creek and a small tributary. The property is 200 feet wide and 518.06 feet long. It is composed of Lots 33 and 34 of the St. Johns Bluff Estates, a residential neighborhood that was subdivided in 1945 (Figure 36).
Figure 33.
Existing Conditions, Neighborhood Context

Notes:
1. Dimensions and locations are approximate, based on field observations, NPS-provided GIS data, and GIS data from the Florida Geographic Data Library.
3. Buildings displayed on map include boathouses.

Legend
- Timucuan boundary
- NPS-owned lands
- Waterways
- 2-foot contours
- Roads
- Unpaved roads
- Trails
- Buildings
- Structures
Cultural Landscape Report
for
Spanish-American War Battery,
Timucuan Ecological and Historic Preserve

Figure 34. Existing Conditions, Battery

Notes:
1. Dimensions and locations are approximate, based on field observations, NPS-provided GIS data, and GIS data from the Florida Geographic Data Library.

Legend
- Parcel boundary
- Waterway
- 10-foot contours
- 2-foot contours
- Roads
- Buildings
- Fence
- Tree locations
- Dead trees

SCALE 1" = 60'

I:\Projects\Spanish American War Fort\AutoCAD\ACTIVE\TIMU_SPAM_base_20191216.dwg
A wood post and boxwire fence, with strands of barbed wire, edges the property at the edge of the Fort Caroline Road right-of-way. Access to the property occurs via a tubular metal gate that is closed with a metal chain and lock. A telephone pole is located just outside the fence. Just inside the fence is a pair of mortared stone columns that contain plants. The columns are small in size and low in height. There are similar columns located on other properties within the subdivision. Property boundary markers to the north and south are associated with the adjacent residential lots and include fencing and tree and shrub plantings.

The majority of the property is wooded (Figure 37). Mature live oak (Quercus virginiana) trees cast dappled shade over the land as it slopes upward to the northeast where the concrete gun emplacement platform and other features of the battery are located near the top of the bluff. Also found on the property are saw palmetto (Serenoa repens), hackberry (Celtis laevigata) trees, grasses, and invasive species such as air potato vine and sword fern.

The landform of the parcel is sloped to the northeast toward the battery located near the high point of the bluff. Below the top of the bluff, the land falls away steeply to the north toward St. Johns Creek. The bluff is also wooded. At the base...
of the bluff, the terrain levels off. Along St. Johns Creek at the northeastern corner of the property is a low-lying area of marshland.

The battery includes a concrete gun emplacement platform that measures approximately 170 feet in length and is 7 feet 7 inches tall. The structure is of concrete construction set within the sloped terrain. The viewshed associated with the gun battery historically offered an unimpeded view of the St. Johns River. Today, trees and shrubs now partially obscure the view. Two iron gun mounts face the northeast elevation 23 feet apart. To the northwest of the gun emplacement is a partially buried concrete magazine that contains two large rooms and a tunnel providing access into the space from the gun emplacement platform (Figure 38). The tunnel continues past the rooms to the west to provide entry from this direction (Figure 39).

The original plat line associated with Lot 32 extended across part of the entrance into the battery from the west. The owners of Lot 32 worked with the owners of Lot 33 to amend the property line by extending Lot 33 west to encompass the battery entrance, while a portion of Lot 33 to the south was added to Lot 32. The transferred land now contains a well house used to provide water for the dwelling on Lot 32 (Figure 40).

**Figure 38.** View northwest toward the gun emplacement platform of the Spanish-American War Battery from the magazine.

**Figure 39.** View northeast of the tunnel leading to the Spanish-American War Battery from the adjacent residential property.

**Figure 40.** Portion of a 1991 survey map of the Spanish-American War Battery parcel and adjacent properties indicating the land transfer of the western end of the concrete structure and well site (dark blue areas). (Source: TIMU archives)
Existing Conditions

Documentation by Landscape Characteristic

Refer to Figure 34 and Figure 35, Existing Conditions Maps.

Natural Systems and Features

St. Johns Creek. St. Johns Creek edges the Spanish-American War Battery property to the north (Figure 34). The creek empties into the St. Johns River northwest of the property. Like the river, St. Johns Creek is brackish where affected by tidal action.

A drainage emptying into St. Johns Creek. A drainageway arising from the bluff empties into the creek at the northeastern corner of the Spanish-American War Battery property.

Marshland along St. Johns Creek. At the base of St. Johns Bluff, the landform levels out. The lower-lying ground along the margin of St. Johns Creek is characterized by marshland.

Topography

St. Johns Bluff. St. Johns Bluff, where the Spanish-American War Battery is located, is a relict dune about 90 feet in elevation. It likely constitutes the highest point in the preserve. The elevated topography has long served as a point of prospect. The Spanish-American War Battery is one of a series of coastal defense structures established on the bluff since the colonial era. The battery sits near the top of the bluff. To the north, beyond the high point, the land drops away precipitously toward St. Johns Creek.

Gently sloped landform rising to St. Johns Bluff. From the property boundary along Fort Caroline Road to the concrete structure of the Spanish-American War Battery, the topography of the parcel rises steadily yet gently at a slope of approximately 3 percent near the road, and 8 percent on the approach to the battery structure (Figure 41). The concrete gun emplacement structure is set at the base of a concrete retaining wall set near the apex of St. Johns Bluff.

FIGURE 41. The topography of the Spanish-American War Battery parcel slopes gently upward between Fort Caroline Road and the concrete gun emplacement platform.

Level marshland along St. Johns Creek. At the base of St. Johns Bluff is a low-lying terrace of land that edges St. Johns Creek. The terrace is characterized by marshland.

Spatial Organization

Rectilinear property. The Spanish-American War Battery property occupies two of the long-narrow lots created through subdivision of the area to establish St. Johns Bluff Estates in 1945. The lots extend from Fort Caroline Road to the base of the bluff. Large residences have been built on the high points of several nearby lots to take advantage of the expansive views toward St. Johns River.

Spanish-American War Battery structure built into the bluff. The Spanish-American War Battery structure is generally rectangular in form and parallels the bluff. The structure is located near the top of the bluff, but it is set below the brow of the hill behind a concrete retaining wall (Figure 42). The wall was designed to protect the guns of the battery from view from the river while allowing for the guns to be fired over the bluff toward an approaching enemy.
The Spanish-American War Battery property was acquired by North Florida Land Trust and the city of Jacksonville in 2015–2016 to protect the historic concrete military defense structure. The property was later transferred to the federal government in 2018–2019 to be administered by the National Park Service as part of Timucuan Ecological and Historic Preserve. As such, the property is associated with a conservation land use.

**Land Use**

**Conservation.** The Spanish-American War Battery property was acquired by North Florida Land Trust and the city of Jacksonville in 2015–2016 to protect the historic concrete military defense structure. The property was later transferred to the federal government in 2018–2019 to be administered by the National Park Service as part of Timucuan Ecological and Historic Preserve. As such, the property is associated with a conservation land use.

**Undeveloped open space.** The Spanish-American War Battery property currently does not support any other land uses. Much of the property is characterized by undeveloped open space. Future land uses are anticipated to include museum/education/interpretation.

**Circulation**

**Access to the Spanish-American War Battery from Fort Caroline Road.** Entry into the Spanish-American War Battery property occurs via a metal gate set within the fence that marks the boundary along Fort Caroline Road (Figure 43). The gate is locked to discourage trespassing. There are no roads or paths located within the property.

**Tunnel leading between the gun emplacement platform, the magazine, and the west entrance.** A concrete tunnel connects the platform behind the two gun emplacements with the covered interior of the magazine to the west (Figure 44). The tunnel also leads to a western entrance into the structure located beyond the magazine.

**Vegetation**

**Temperate Mixed Hardwood and Evergreen Hammock Woodland.** The landscape associated with the Spanish-American War Battery property is characterized by woodland representative of a temperate mixed hardwood and evergreen hammock community. The woodland is layered and contains canopy and understory trees, shrubs, vines, and a grassy
herbaceous layer that is maintained through mowing (Figure 45). The species associated with the hammock woodland include live oak, Southern magnolia (*Magnolia grandiflora*), and Southern hackberry trees. Saw palmetto and oak saplings form the understory and shrub layer. Vines include catbrier (*Smilax rotundifolia*) and grape (*Vitis sp.*). There are several ferns present, likely including species of the maiden fern genus *Thelypteris*, Boston fern genus *Nephrolepis* and representatives of the shield fern genus *Dryopteris*. There is also Spanish moss (*Tillandsia usneoides*), an epiphyte, associated with the canopies of many live oak trees. Yucca (*Yucca filamentosa*) are growing in the masonry columns near the southwestern perimeter fence. Invasive species are present throughout.

Additional species often included in the hammock woodland type in northeast Florida include laurel oak (*Quercus hemisphaerica*), swamp cabbage (*Sabal palmetto*), redbay (*Persea borbonia*), and hollies (*Ilex* spp.)

![Image](https://example.com/image1.png)

**FIGURE 45.** A hammock woodland community dominated by live oak trees characterizes much of the Spanish-American War Battery property.

**Invasive species.** Air potato vine (*Dioscorea bulbifera*) is one of the invasive plant species found growing throughout the Spanish-American War Battery property (Figure 46). Another is tuberous sword fern (*Nephrolepis cordifolia*). The park currently controls air potato vine and sword fern through mowing. The park also releases air potato leaf beetle (*Liliocercia cheni*) as a control.

![Image](https://example.com/image2.png)

**FIGURE 46.** Air potato vine growing on one of the masonry columns at the Spanish-American War Battery property.

Air potato vine spreads by twining around available foliage of other plants and climbing into the tree canopy, where it upsets the tree’s ability to resist wind loads. The invasive sword fern is similar in character to a native species, also named sword fern, but it has the ability to displace all other low growing plants and form dense monocultures. Sword fern as well as air potato vine are included on Florida’s Exotic Pest Plant Council’s Category 1 list of invasive species, meaning that they are found to be altering native plant communities by displacing native species, changing community structure or ecological functions, or hybridizing with natives.\(^\text{310}\)

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**Existing Conditions**

1. **Buildings and Structures**

2. **Spanish-American War Battery**

   The Spanish-American War Battery is a concrete structure that sits atop St. Johns Bluff. Constructed in 1898 to aid in the defense of the St. Johns River from potential naval attacks on nearby ports by the Spanish fleet, the battery faces northeast over the St. Johns River.

   The battery consists of the magazine to house ammunition, pylons, two gun platforms, the parapet, and the traverse wall (Figure 47 through Figure 51). The base concrete used to construct the battery features a large granite aggregate. On exposed surfaces, the concrete walls are covered with a 3/8-inch-thick cementitious layer with fine aggregate. A concrete topping approximately 1/2 inch thick, with fine aggregate and a smooth finish, is present over most of the slabs and horizontal surfaces.

   On the northwest side of the battery are a major pylon and minor pylon, separated by a 6-foot-wide ramp that leads into the battery’s magazine. The major pylon is 45 feet in length, while the minor pylon is 17 feet 6 inches in length. A dry moat separates the major pylon and the magazine. The battery’s magazine is mostly rectangular in plan, measuring approximately 53 feet in length and 20 feet in width at its widest point. The southwest room is 12 feet by 16 feet and 3 inches and was used for the storage of ammunition. An ammunition pass with an opening at either end separates the storage room from the ramp leading up to the guns. A second entrance to the magazine is located on the northwest elevation of the magazine. The roof of the magazine, which is 12 inches thick, has two 10-inch-diameter vents above the ammunition storage room and the ammunition pass. The southeast side of the battery has a traverse wall approximately 50 feet in length running southwest to northeast. The wall turns to the southeast and continues 43 feet, near the edge of the concrete slab.

**FIGURE 47.** Overall view of the gun mounts and parapet wall.

**FIGURE 48.** The ramp leading down to the battery’s magazine. Note the major and minor pylon visible in this photo.

**FIGURE 49.** A view of the magazine from one of the gun platforms.
Two raised gun platforms support pivots for the two 8-inch breech-loading guns that were stationed at the battery in January 1899. Three 18-inch-wide iron semicircular tracks, measuring 2 feet 11 inches, 8 feet 4 inches, and 16 feet 6 inches in radii, surround the gun pivots and were used to aid in rotating the guns. The guns were placed behind a 7-foot-high, 4-foot-thick concrete parapet and interior crest, with the superior slope of the parapet extending northeast toward the bluff. The 8-inch guns were removed in October 1899 and sent to Pensacola. Although the guns were never replaced at the battery, the raised gun platform and tracks remain in place today.

**FIGURE 50.** A view to the southeast of the traverse wall and a gun platform.

**FIGURE 51.** Historic American Buildings Survey drawing (1934) showing the plan and primary components of the battery. (Source: Library of Congress, Prints & Photographs Division, HABS, Reproduction No. FL-15-2 [FL 0161])
The floor of the structure is a 12-inch-thick concrete slab with a concrete topping. The slab is approximately 72 feet wide from the inside of the pylons to the traverse wall, and 45 feet from the edge of the concrete slab to the parapet. The concrete used in the construction of the battery walls and roofs/floors contains granite large aggregate; where exposed, this concrete has a rough surface. The topping concrete present on most areas of the slab has a finer aggregate than the base concrete, and a smooth finished surface. The floor surrounding the ramp leading to the magazine does not have a concrete topping and has a rough surface.

Iron reinforcement is present in ceiling/roof slab of the magazine. The reinforcement consists of iron purlins embedded into the concrete with the bottom flange exposed to view. Within each room of the magazine, the reinforcing is evenly spaced and spans the length of the room. Iron channels are present at the corners of the load-bearing concrete walls, upon which the ceiling/roof slab rests, such as at the openings to the ammunition pass. Where exposed at either side of the openings, the channels measured 4-1/16 inches (web) by 1-5/8 inch (flange) by 5/16 inch thick.

Existing Conditions

The project team conducted a field assessment from July 9 through 11, 2019, to document the battery and its existing conditions. During the field work, visible conditions were documented with field notes and photographs, and measurements were taken of the battery. Non-destructive test methods including sounding of the concrete for voids and metal detector survey were used to further evaluate observed conditions. No voids were identified from the sounding of the concrete, and no reinforcement was found during the metal detector survey other than the iron members observed in the magazine. The following notable conditions were observed during this assessment:

**Cracking**

- Vertical and horizontal cracks were observed within the traverse wall. Crack widths and lengths varied, with some running the entire height of the wall.
- The horizontal cracks appeared to have occurred at cold joints formed during the placement of the concrete in lifts (Figure 52). These cracks were typically at regular intervals along the height of the traverse wall and varied in length.
- Map cracking was observed in several areas of the traverse wall, consisting of a pattern of interlocking hairline and fine cracks (Figure 53).
- Frequent cracks were observed at the intersection of the traverse wall and the parapet wall.
- Both vertical and horizontal cracks were observed along the parapet. Similar cold joint patterns were present in the parapet as in the traverse wall.
- A large crack approximately 1 inch in width was noted in the roof of the ramp leading to the magazine (Figure 54). No reinforcing steel was observed crossing the crack.
- A large crack extends across the roof of the magazine, intersecting the vent shaft (Figure 55). Debonding adjacent to the cracks was not detected during sounding of the concrete.
- Small hairline cracks were observed in the roof and walls of the northwest entrance to the magazine. Continuous cracks extend vertically along the exterior north and south walls of the magazine and were connected by horizontal cracks running across the roof of the magazine.
- Cracks approximately 1-1/2 inches in width were observed within the base of the major pylon in the section adjoining the ramp to the magazine (Figure 56). No reinforcing steel was observed crossing the crack.
Cracks are present in the topping of the floor of the loading platform.

Efflorescence is present along some of the cracks observed in the exterior walls, indicating moisture movement through the concrete.

**FIGURE 52.** Horizontal cracks at cold joints in the traverse wall. Also note the vertical cracking and efflorescence present.

**FIGURE 53.** Map cracking in the traverse wall. Also note the efflorescence present.

**FIGURE 54.** Cracks at the roof of the ramp leading to the magazine. Also note the corroded iron channel.

**FIGURE 55.** A large crack extending along the roof of the magazine. Note the vent shaft located in the roof.

**FIGURE 56.** A crack observed in the base of the major pylon. This photo was taken from the roof of the magazine.
Spalls

- Spalls in the parge coat were present along the parapet and traverse walls. Some spalls extended through the 3/4-inch-thick parge coat into the underlying concrete. Numerous smaller spalls measuring between 1 and 2 inches in diameter were present in the traverse wall. Larger spalls on the traverse wall were approximately 4 to 5 inches in diameter and extended into the structural concrete. A large spall was observed in the parapet that measured approximately 2 feet 6 inches high by 1 foot wide (Figure 57).

- A large spall was observed in the concrete roof of the ramp leading down to the magazine (Figure 58).

- Numerous cracks and small spalls were observed within the floor topping throughout the landing platform.

Corrosion and moisture

- The iron channels at the top of the magazine walls have corroded, resulting in spalling and cracking of the surrounding concrete (Figure 59).

- The exposed metal reinforcing in the magazine ceiling exhibits surface corrosion. Ferrous staining is present on the concrete adjacent to the corroded members (Figure 60 and Figure 61).

- Efflorescence was observed inside the magazine on all interior elevations, as well as on the traverse wall and parapet. Inside the magazine, efflorescence is concentrated around horizontal cracks in the concrete, and covers approximately 25 percent of interior surfaces (refer to Figure 60).

FIGURE 57. A large spall in the wall of the parapet.

FIGURE 58. A large spall observed at the corner of the roof of the ramp leading to the magazine.

FIGURE 59. Corroded channel at the southwest side of the roof of the ramp to the magazine. Note the staining of the concrete beneath the channel.
Vegetation is growing out of the wider cracks in the traverse wall (Figure 62). Plants were also observed growing on the top of the wall.

At the northwest entrance to the magazine, vegetation is growing from the cracks in the roof and walls (Figure 63).

Moss and other vegetation were observed on the major and minor pylons (Figure 64).

Plants are growing in the vertical cracks along the exterior of the magazine. Biological growth is present in various areas of the battery on the surface of the concrete. The growth varies in color from green and orange to black (Figure 65).

**Organic Growth**

- Vegetation is growing out of the wider cracks in the traverse wall (Figure 62). Plants were also observed growing on the top of the wall.

- At the northwest entrance to the magazine, vegetation is growing from the cracks in the roof and walls (Figure 63).

- Moss and other vegetation were observed on the major and minor pylons (Figure 64).

- Plants are growing in the vertical cracks along the exterior of the magazine. Biological growth is present in various areas of the battery on the surface of the concrete. The growth varies in color from green and orange to black (Figure 65).
From the elevated position of the bluff north of the battery, long views are afforded to the St. Johns River beyond. These views are becoming increasingly obscured by woody growth (Figure 66).

Contemporary residences built atop the bluff to either side of the Spanish-American War Battery property are visible from the area around the gun emplacement platform and from the top of the magazine structure (Figure 67).

Views and Vistas

View from the bluff to St. Johns River. From the elevated position of the bluff north of the battery, long views are afforded to the St. Johns River beyond. These views are becoming increasingly obscured by woody growth (Figure 66).

Views of adjacent residences. Contemporary residences built atop the bluff to either side of the Spanish-American War Battery property are visible from the area around the gun emplacement platform and from the top of the magazine structure (Figure 67).

Small-scale Features

Boundary fence and gate. The property’s southwestern boundary is marked by a wooden post and wire fence that extends to the margins of the property as it meets adjacent residential properties (Figure 68). At the eastern end, the fence is 14 feet from the margin of Fort Caroline Road. The fence then jogs north and continues at a distance of 31 feet from the road. A tubular metal gate is located in the section that jogs north. The wood posts measure 5 feet in height. Steel boxwire and strands of barbwire are nailed to the posts. The gate measures 11 feet 8-1/2 inches in length. It is supported by an 8-inch post at the left end; another 8-inch post at the right end is used to lock the gate with a metal chain. The gate is 4 feet 2 inches in height.
Masonry columns (2). Two masonry columns sit just inside the property north of the perimeter fence along Fort Caroline Road. The columns are mortared rubble fieldstone and of marginal construction quality (Figure 69). The column to the east measures 2 feet in height and 3 feet by 3 feet 6 inches in plan. The column to the west measures 2 feet 6 inches in height and is 3 feet 6 inches square in plan. Yucca plants are growing from the center of one of the columns.

Signs. A sign affixed to one of the posts associated with the entrance gate notes “No trespassing / violators will be prosecuted / Fla. St. Stat. 810.08.” This same sign is posted in two additional locations along the fenceline marking the property boundary at Fort Caroline Road.

FIGURE 69. One of the two masonry columns located near the property boundary along Fort Caroline Road.

Archeological Sites
Based on documentary research and archeological investigations, St. Johns Bluff exhibits a long history of cultural use and occupation. Previous investigations have yielded artifacts and other information potential related to pre-Contact cultural use and occupation of the area in the form of pottery sherds, bone fragments, and worked stone material. In addition to American Indian artifacts, investigations have yielded evidence of Spanish, French, and British occupation, followed by American occupation and use.

The first investigations were conducted during the latter part of the nineteenth century along the river margins, focusing on shell and sand middens. Alfred Manucy, a National Park Service historian, conducted a historic site survey of St. Johns Bluff in 1940. His investigations suggested the location of the possible campsite of Pedro Menéndez de Avilés, founder of San Agustín (Saint Augustine), during his attack on Fort Caroline in the 1560s. Manucy also claimed to have located a British fort near the northeast angle of the bluff, the town sites of St. Johns Town and San Vicente de Ferrer, a Confederate battery site near the northeast angle of the bluff, the Spanish-American War Battery, and a Timucua Indian mound on the southeastern part of the bluff. Manucy also indicated his belief that Fort Caroline was located on a plain northwest of the bluff.  

During the 1950s, Charles Fairbanks of the University of Florida explored the area believed to have been the site of sixteenth-century Fort Caroline. Based on his findings, it was believed that the site of Fort Caroline had eroded into St. Johns River. William H. Sears also investigated the land associated with the bluff during the 1950s and discovered American Indian artifacts from the Late Woodland period.

During the 1970s, several investigations were conducted on the bluff. A late eighteenth-century work camp was excavated by William Jones and was believed to have been of British origin.

Investigations conducted during the 1980s in the vicinity of the Ribault Monument revealed colonial ceramics of the British occupation era and Civil War ordnance. However, a paucity of Spanish and Civil War-era materials was interpreted as the result of the hasty construction of defensive structures during the Spanish-American War. Work conducted by William Jones in 1986 revealed a late eighteenth-century post in the ground structure, Spanish-era wares,

311. Prettyman, 7–8.
312. Ibíd., 8.
313. Ibíd., 8.
and English creamware and scorched brown saltglaze stoneware. He suggested that the discoveries were associated with St. Johns Town and were related to the naval stores industry conducted by the British during their occupation of Florida between 1763 and 1783.315 A National Park Service Archeological Overview and Assessment completed in 1988 identified thirteen sites in the vicinity of Fort Caroline ranging in age from 6000 BCE to 1763.316

In August 2011, NPS personnel from Timucuan Ecological and Historic Preserve conducted a cleanup of the Spanish-American War Battery, although the property was not owned by the federal government at the time. The owner granted permission to remove overgrown vegetation, litter, and eroded soil from the exterior and interior rooms of the structure. During the cleanup, artifacts were collected from the top of the structure, from the ground surface immediately surrounding the structure, and from the soil removed from the floor of the west interior room.317

Of the 4,512 grams of artifacts recovered, more than 92 percent were either glass or metal fragments. Also found were bone, clay, and plastic. The report on the cleanup noted that the site has long served as a destination spot for Jacksonville residents to visit with or without the permission of the owner. The majority of the metal fragments recovered were believed related to the corrosion of the metal channels in the ceiling of the west room. Most of the glass fragments were pieces of soda or alcoholic beverage bottles.318

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316. Ibid., 10. 318. Ibid., 4–7.
Analysis and Evaluation

Introduction

This chapter consists of three sections: an evaluation of the significance of the landscape of the Spanish-American War Battery at Timucuan Ecological and Historic Preserve in accordance with the National Register of Historic Places (National Register); an integrity assessment; and, a comparative analysis of historic and existing landscape conditions.

The significance evaluation identifies the property’s important historical associations over time, as well as its architectural, archeological, and social value. The property’s significance is tied to a discrete period of time in which its important contributions were made. The property has also been evaluated based on its relevant historic context. Historic contexts are patterns and trends in history and prehistory that can be used to understand a specific occurrence, property, or site, and to make clear its meaning and importance.

The second section of the chapter is an integrity assessment that summarizes to what degree the property retains its ability to convey its historic associations with the identified period of significance.

Based on the discussion of the property’s significance, the period during which historical associations occurred, and the landscape integrity assessment, the CLR team prepared a comparative analysis of historic and existing conditions. The analysis conveys an understanding of change over time and suggests which resources today reflect their character and appearance during the period when historical contributions were made. One of the byproducts of the comparative analysis is an indication of resources that survive from the identified period of significance. These are referred to as contributing to the historic significance of the property or its setting. Resources that originated after the period of significance, or that have lost integrity, are assessed as non-historic or non-contributing depending on their eligibility for listing in the National Register of Historic Places. The CLR also identifies features that existed during the period of significance but no longer survive, except perhaps in the archeological record. These are categorized as missing resources.

Evaluation of Significance

The National Register of Historic Places is the official list of the nation’s historic places worthy of preservation. Authorized by the National Historic Preservation Act of 1966, the National Park Service’s National Register of Historic Places is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America’s historic and archeological resources.

Listing in the National Register of Historic Places is based on evaluation of the significance of the property using established criteria. The significance evaluation identifies the important historical associations of the property; comments on its architectural, archeological, and social value as they relate to the National Register of Historic Places, and its relationship to relevant national, state, and local historic contexts; and identifies the...
discrete period of time in which the property’s important contributions were made.

National Register Criteria for Evaluation

In order for a property to be eligible for inclusion in the National Register of Historic Places, it must possess significance under one of four criteria. The Criteria for Evaluation for listing in the National Register of Historic Places state:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

B. That are associated with the lives of persons significant in our past; or

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That has yielded, or may be likely to yield, information important in prehistory or history.

In addition, the Criteria for Evaluation identify the following Criteria Considerations:

Ordinarily cemeteries, birthplaces, graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past fifty years are not considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

a. A religious property deriving primary significance from architectural or artistic distinction or historical importance; or

b. A building or structure removed from its original location but which is primarily significant for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or

c. A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building associated with his or her productive life; or

d. A cemetery that derives its primary importance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or

e. A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or

f. A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

g. A property achieving significance within the past 50 years if it is of exceptional importance.320

National Register Significance of the Spanish-American War Battery

A determination of eligibility for listing in the National Register of Historic Places was conducted for the Spanish-American War Battery based on a National Register of Historic Places Preliminary Site Information Questionnaire completed by NPS cultural resource staff in February 2019.321

The findings of this CLR concur with those of the Preliminary Site Information Questionnaire, which notes that the Spanish-American War Battery is eligible under National Register Criteria A and C at the statewide level.322 The battery is eligible under Criterion A in the area of Military History for its association with the Spanish-American War and the development of coastal defenses. In 1898, following a survey of existing coastal defenses and the recommendation for new fortifications by the US Department of War, construction began on concrete coastal fortifications at harbor mouths and riverheads along the east and west coasts. At the same time, following the explosion of the USS Maine in Havana on February 15, 1898, and the onset of the Spanish-American War in April, the Department of War and coastal residents became concerned about the ability of existing defenses to resist and attack. Control of St. Johns River had historically been recognized as an important military strategy, with fortifications established by the French at nearby Fort Caroline in the 1560s. St. Johns Bluff was the site of a Confederate base and Union victory during the Civil War. With the onset of hostilities with Spain in 1898, the citizens of Jacksonville obtained permission from property owners for construction of a battery at St. Johns Bluff. Two batteries were built concurrently: a temporary structure near where the Ribault Monument stands today, and the permanent battery that is the subject of this study. Construction of the permanent battery began on April 27, 1898.

The battery is also eligible under Criterion C in the area of Engineering as an example of an Endicott era battery. Although minor alterations were made after the Spanish-American War ended, the battery is a representative example of Endicott period military defenses. In response to the concerns about the viability of existing coastal fortifications, the US Department of War convened the Board of Fortifications—known as the Endicott Board after its chairman, William C. Endicott, who served as Secretary of War from 1885–1889—to conduct a national survey of coastal defense systems. The Board recommended a modernization program for harbor and coastal defenses, which included construction of new concrete fortifications with artillery guns, mortar batteries, and mined water systems. The Spanish-American War Battery exhibits the characteristic Endicott period open-topped concrete walls protected by sloped earthworks, although a final layer of sand covering was never placed atop the battery as originally intended. The Endicott design represents the response to changes in weapons technology. Prior to this point, defensive construction focused on structures; the Endicott board began constructing defenses based on gun power. Twenty-eight Endicott style batteries were constructed at coastal forts in Florida between 1896 and 1908, primarily at Fort Dade, Fort DeSoto, Fort McRee, Fort Pickens, and Fort Taylor. The Spanish-American War Battery is the

322. As discussed during the project start-up meeting for the CLR, we understand that the park has concluded through its research that the battery is significant at a state level; the concurrence letter from the Division of Historical Resources indicates that it is significant at a local level. The findings of this CLR support the park’s conclusion, in that the battery represents events that were significant beyond the local context. In addition, the battery is one of a series of coastal fortifications in Florida developed during the Endicott period that have significance on a statewide level.
only battery of this group not attached to a large coastal fort.

The Spanish-American War Battery on St. Johns Bluff was still under construction when the United States and Spain signed a cease fire on August 12, 1898; the Treaty of Paris ending the war was signed on December 10, 1898. Construction of the battery continued, although with modifications. The 8-inch guns were mounted in January 1899. However, within months the guns were removed to Fort McRee near Pensacola, and the battery was decommissioned.

The Preliminary Site Information Questionnaire concludes, “Though the battery never saw battle, it stands as a tribute to the late 19th century push for proactive coastal defenses, and to the citizens of Jacksonville for their commitment to protecting their city against perceived threat.”

A letter of concurrence was issued by the Florida Division of Historical Resources on March 4, 2019, and states:

. . . the property is eligible for listing in the National Register of Historic Places (NR) at the local level under Criterion A: Military for its significance in the fortification of Jacksonville during the Spanish-American War, and under Criterion C: Engineering as a locally significant examples of Endicott period coastal defenses.

Period of Significance

The findings of this Cultural Landscape Report regarding the period of significance are consistent with those of the Preliminary Site Information Questionnaire. The recommended period of significance for the Spanish-American War Battery is 1898–1899, consistent with its period of construction and its primary association the Spanish-American War and the Endicott period of coastal defenses.

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323. Ibid.
324. Ruben Acosta, Supervisor, Survey and Registration, Division of Historical Resources, Florida Department of State, letter to Morgan Baird, re: Spanish American War Battery (DU00124), March 4, 2019.
**Integrity Assessment**

According to the National Register of Historic Places, integrity is the ability of a property to convey its significance and the authenticity of its historic identity based on the survival of physical characteristics representative of conditions present during the period of significance. Historic integrity is the composite of seven qualities that include location, design, setting, materials, workmanship, feeling, and association. Historic properties either retain integrity or they do not. Retention of the qualities, also referred to as aspects, of integrity is necessary for a property to convey its significance. However, not all seven qualities need to be present for a property to retain integrity.

**Overall Integrity**

Based on review of the historic periods of development associated with the Spanish-American War Battery property and consideration of change over time within the landscape, the cultural landscape that is the focus of this CLR retains all aspects of integrity to the circa 1898–1899 period of significance, and it continues to convey its historic associations with important military coastal defense activities. Qualities for which integrity has been impacted by changes occurring after the period of significance include design and setting. Integrity of design has been affected by removal of the rifled artillery mounted in the battery during the period of significance, the rail line and position finder that were used in construction and operation of the battery, and the loss of an open or cleared field of fire that would have been established for the artillery between the battery and potential avenues of approach.

Integrity of setting is affected by views of adjacent twentieth-century residential development to the northwest and southeast. The lot to the northwest more intrusively affects the visual and physical integrity of the battery due to the way in which the dwelling, associated driveway, fence line, plantings, and a well house closely edge the concrete structure of the Spanish-American War Battery.

**Integrity by Quality**

**Location**

*Location is the place where the cultural landscape was constructed or the landscape where the historic event occurred.*

The Spanish-American War Battery retains integrity of location since it survives on its original site and continues to overlook the surrounding landscape of St. Johns River and St. Johns Creek to the north.

**Design**

*Design is the combination of elements that create form, plan, space, structure, and style of a cultural landscape.*

The Spanish-American War Battery also retains integrity of design as an intact example of an Endicott-era coastal defense battery built by the War Department based on standard plans and principles. The gun emplacements that illustrate the manner in which the rifles could be pivoted to direct fire, the concrete and earthen materials, and the way in which the emplacements are hidden from enemy view are all representative of these design principles. During the period of active use of the coastal defense emplacement on St. Johns Bluff, the battery was supported by mining of the river, also characteristic of the design of Endicott batteries.

**Setting**

*Setting is the physical environment of the cultural landscape.*

Overall, the Spanish-American War Battery possesses the integrity of setting to convey its historic associations due to the ongoing presence of expansive views from the bluff, and the relatively undeveloped nature of the parcel and its environs. Integrity of setting is, however, affected by views of adjacent residential development to either side of the concrete structure. At the time the battery was constructed, St. Johns Bluff was little developed and conveyed an isolated and
remote character. Few dwellings or other cultural features were visible from the property, or along the approach to the property from the land side. From the bluff, clear views were afforded to St. Johns River. These qualities contributed to the ability of the military to establish and operate coastal defense systems on the bluff during the late nineteenth and early twentieth centuries.

During the mid-twentieth century, the land was subdivided as St. Johns Bluff Estates. The formerly open landscape of the battery parcel became wooded, and residences were gradually built on parcels surrounding the fort. Now residences closely edge the battery to either side; both adjacent residences are visible from the Spanish-American War Battery parcel, as is Fort Caroline Road, also a later addition. These features postdate the period of significance. Despite these changes to the setting, the Spanish-American War Battery possesses integrity of setting due to the presence of and views afforded to St. Johns River, and the undeveloped character of the bluff below the battery structure to the north, and behind the structure to the south.

### Materials

*Materials are the physical elements that were combined or deposited in a recognizable pattern or configuration during the period of significance and help characterize the cultural landscape.*

The Spanish-American War Battery retains integrity of materials due to the ongoing presence of the original concrete and iron structure of the battery, tunnel, and magazine.

### Workmanship

*Workmanship is the physical evidence of the crafts of a specific culture or people during a given period in history or prehistory.*

The Spanish-American War Battery retains integrity of workmanship as a result of the surviving original concrete structure, which exhibits construction techniques from 1898, and it has not been disturbed.

### Feeling

*Feeling is a cultural landscape’s expression of the aesthetic or historic sense of place and time.*

The battery retains integrity of feeling as a result of the protected character of the late-nineteenth-century structure, and the connection of the structure to the bluff and the defensive and strategic views afforded of the river approach to Jacksonville, Florida. The battery continues to convey the feeling of a coastal defense battery of the Endicott era and the Spanish-American War.

### Association

*Association is the direct link between an important historic event or person and a cultural landscape.*

The battery remains in good condition for its age, helping to convey its association with the original structure as designed and constructed to defend the river approach to Jacksonville.

### Comparative Analysis of Historic and Existing Conditions

Refer to Figure 87, contributing resources.

### Landscape Characteristics

Historic landscapes are composed of tangible and intangible landscape characteristics that survive from the period of significance to individually or collectively aid in understanding the importance of the place. The individual landscape characteristics of the Spanish-American War Battery—the natural features and systems, patterns of spatial organization, land uses, circulation features, cultural vegetation, buildings and structures, views and vistas, and small-scale features—that contribute to its historic significance are essential to the development of appropriate preservation strategies.
The section that follows—a comparative analysis of historic and existing landscape conditions—identifies those features that survive with integrity from the period of significance and continue to convey their historic appearance and function. The comparative analysis addresses the same landscape characteristic categories used to structure the existing conditions chapter: natural systems and features, topography, spatial organization, land use, circulation, vegetation, buildings and structures, views and vistas, and small-scale features.

**Natural Systems and Features**

**Summary Analysis**

The Spanish-American War Battery was sited atop a high point associated with St. Johns Bluff, a sand dune that rises to nearly 90 feet above mean sea level (AMSL). With much of the land within the region ranging in elevation from between sea level and 5 feet AMSL, St. Johns Bluff is an unusual landform that affords opportunities for long views and a prospect overlooking St. Johns River. From the bluff, views are afforded of the river near its mouth along the Atlantic Coast. Since the colonial era, the bluff has served as an important position of coastal defense, including later protection of the city of Jacksonville and the associated shipping industry. The bluff was the site of a Confederate battery during the Civil War. Development of the Spanish-American War Battery between 1898 and 1899 occurred in phases across the bluff with materials brought up slope by wagon and later rail line from the river to the west.

Also associated with the property are St. Johns Creek, which forms the boundary to the north, and marshland along the level terrain at the base of the bluff. These features appear to have been present at the time the battery was constructed based on review of maps prepared at the time. Vegetation on the bluff is rendered to suggest scattered open-grown trees were present during the late nineteenth century (Figure 70). The vegetation is referred to generally in a map based on an 1898 survey as “oak, bay, etc. hammock” (refer to Figure 79).

![Figure 70. Map of St. Johns Bluff and vicinity developed for coastal defense planning purposes. The map shows St. Johns River, St. Johns Bluff, St. Johns Creek, marshland along the creek and river, and scattered woodlands on the bluff. (Source: NARA RG 77, File Drawer 191, Sheet 9, March 5, 1905; blue shaded circle added by the authors)](image-url)
Historic Conditions

The position selected for the construction of the Spanish-American War Battery is a high point associated with St. Johns Bluff. Both a temporary and a permanent battery were constructed in 1898–1899 on the elevated knoll south of the river to protect against enemy ships entering the river to reach the city of Jacksonville. The battery was sited on the military brow of the bluff. As such, it was designed to be set just below the top of the slope so that emplaced artillery would not be visible from the water. Construction of the gun platforms included a concrete retaining wall that helped to establish a level space where the guns could be mounted, and pivot to fire on an approaching craft within a broad cone. A rail line was built to convey construction materials to the top of the bluff from a dock along the river. Construction was preceded by removal of trees on the slope to the north of and topographically below the battery to ensure a clear field of fire. The tram was reportedly built through a “jungle.”

Two photographs looking towards St. Johns Bluff circa 1900 provide information about the character of the landscape around the time the guns were mounted at the Spanish-American War Battery (Figure 71 and Figure 72). One photograph taken from farther away indicates the bluff as generally denuded of woody vegetation but shows a dense stand of trees growing on the level terrain at the top of the bluff. Although the tree species cannot be determined from the photograph, the stand appears relatively well-established and mature. Most of the trees are in leaf, but some are not, suggesting that the photograph was taken in winter and that there were deciduous as well as evergreen trees present on the bluff. The second photograph, taken closer to the shoreline, similarly shows the bluff bank to be characterized by open-grown vegetation, primarily grasses and lower growing plant materials. At the top of the slope are numerous tall trees, some of which appear to be deciduous and not in leaf. The land to the east, which may include the slope overlooking St. Johns Creek where the battery was located, is more open, potentially reflecting where trees had been cleared to establish the field of fire for both the temporary and the permanent batteries.

Additional graphic evidence of the Spanish-American War Battery property is available during the 1930s and 1940s. In 1934, the battery was surveyed by the Historic American Buildings Survey. Photographs taken as part of the survey illustrate vegetative conditions at the time as more open around the battery than what is present today. Visible to the west of the magazine are what appear to be eastern red cedar trees (Figure 73 and Figure 74), as well as live oak and other species. The land to the south of battery appears to have been cleared, while the top of the bluff is overgrown.

Figure 71. Circa 1900 photograph of St. Johns Bluff and the military reservation associated with the Spanish-American War Battery from the river. Buildings erected to support the project are visible, along with riprap placed along the river shoreline to protect against erosion. (Source: State Library & Archives of Florida. Florida Memory. December 15, 2020, https://www.floridamemory.com/items/show/257569)

A 1943 aerial photograph taken just before the bluff was subdivided to establish the St. John Estates residential community indicates that the site was entirely wooded at the time (refer to Figure 80). Another archival aerial photograph from 1960 illustrates the development of several residential lots within St. John Estate (refer to Figure 81).

Existing Conditions

St. Johns Bluff rises approximately 90 feet above the shores of St. Johns River, just west of the mouth of the river at the Atlantic Ocean shoreline. Edging the bluff to the east is St. Johns Creek, a small stream that drains part of the bluff and land to the southeast. The margins of St. Johns Creek are characterized by salt marsh occupying relatively level mucky soil that is inundated twice daily by ocean tides that flow upstream into St. Johns River.

Much of the landscape around the Spanish-American War Battery is currently developed with large residences that sit atop the bluff to take advantage of views. The residential parcels are typically manicured and maintained in ornamental native and exotic plant materials with few undisturbed stands of native vegetation in evidence. The Spanish-American War Battery is of interest for the native woodland present that dates to the mid-twentieth century and earlier, based on
a 1943 aerial photograph that indicates the entire bluff as wooded.

The vegetative community associated with the bluff is representative of a hammock community in northeastern Florida. These communities tend to be dominated by temperate evergreen and mixed hardwood species. Trees present at the Spanish-American War Battery today—notably live oak, hackberry, Southern magnolia, and saw palmetto—are representative of a hammock community of mixed hardwood and evergreen temperate species found throughout northeastern Florida. Missing is the groundcover and herbaceous layer that might be found in native communities of the type where mowing had not been used to control growth. Epiphytes present include Spanish moss (Tillandsia usneoides).

Native ferns are often a component of hammock forests. A shrub and understory layer is often present when the canopy is not entirely closed.

**Evaluation**

The predominant natural systems and features associated with St. Johns Bluff, such as the soils, geology, marshland at the base, St. Johns Creek, and an associated drainageway appear to survive with integrity from the historic period of significance. Based on review of the 1899 McKinstry survey, oaks and other woody vegetation were located southwest of the battery at the time the structure was constructed. Little else is known about the character of the vegetation present to the south of the structure, although one account suggests that the tram that carried the guns to the battery was built through a “jungle.”

Based on documentation that suggests the bluff may have been used to pasture livestock, the woodland may have been savanna-like and open grown. A map prepared based on an 1898 survey indicates the vegetation in the vicinity of the battery as “Oak, bay, etc. hammock.” This suggests woodland cover composed of live oak, magnolia, and other temperate evergreen and hardwood species similar to the canopy trees present today.

While the slope to the north of the battery would have been cleared for the artillery field of fire, the hammock vegetation to the south would not necessarily have been altered unless individual trees were cut for wood to address construction and firewood needs. Thus, the hammock vegetation present today is likely representative of that present during the period of significance, with differences represented in the groundcover and herbaceous layer due to mowing and the introduction of invasive species such as air potato vine and sword fern.

**Historic natural systems and features contributing to the significance of the setting**

- St. Johns Creek
- Drainage emptying into St. Johns Creek
- Marshland along St. Johns Creek
- Hammock woodland vegetation

**Non-historic natural systems and features**

- Invasive plant species

**Topography**

**Summary Analysis**

As noted above, the Spanish-American War Battery was sited atop a high point associated with one of the most elevated landforms in the region—St. Johns Bluff. The location was chosen by the Naval Militia for the specific purpose of protecting the North Florida coastline from a possible military attack following the sinking of the USS Maine, a Navy ship docked in the harbor at Havana, Cuba—the act that led to the declaration of the Spanish-American War of 1898. The bluff was to be used to emplace modern siege guns, while a minefield was to be placed in the river as a further deterrent against enemy incursions into

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327. HABS documentation.
the region. The high point of the bluff, located 18 miles downriver from Jacksonville, was indicated by the citizens of the city as the most suitable location for a battery to protect their interests.

Following completion of a temporary battery and buildings to support the project (refer to Figure 71), the US Department of War initiated construction of the permanent battery known as the Spanish-American War Battery excavating the military brow of the hill, constructing a concrete retaining wall, and establishing two gun emplacements and a magazine to the rear of the landform, with both out of sight from the river. When completed, the elevation of the battery was 73.27 feet AMSL. Some of the materials used to construct the battery were brought to the site via a temporary rail line sited in a swale leading from the river to the top of the bluff (refer to Figure 72).

These topographic conditions remain evident today. Although the residential properties to either side of the battery have been developed with some topographic modification, the Spanish-American War Battery continues to exhibit the topographic conditions that were present during the period of significance. Few alterations to the site topography appear to have been made since 1899.

**Historic Conditions**

Five days after the sinking of the USS Maine on February 15, 1898, Florida governor William D. Bloxham requested that the Jacksonville Naval Militia make a reconnaissance of the Atlantic Coast to locate appropriate positions for establishing signal and other military defensive systems to help protect against a potential attack by the Spanish. Even as the Naval Militia conducted a survey of the area for coastal defense needs, a group of Jacksonville citizens sent representatives, including former Congressman Charles M. Cooper and W. W. Cummer, to Washington, DC, to convey to authorities their urgent need for defenses for the city. Later, on April 2, 1898, the citizens of Jacksonville received confirmation via telegraph from Gen. John M. Wilson, Chief of Engineers, that he had received orders from the Secretary of War for guns and mines to be emplaced to protect the city.

General Wilson instructed Lt. Col. William H. H. Benyaurd, the district engineer, to work with Jacksonville citizens to select a site for four modern siege guns. Benyaurd soon learned that the citizens had already settled on St. Johns Bluff as the site for a battery.328

Benyaurd quickly agreed with the land selection. At the time, the land associated with the bluff was owned by Florida Finance Corporation, Sarah F. Williams, and W. D. Browne.329 Following contacting of the owners, Benyaurd hired John M. Cook of Spartanburg, South Carolina, to oversee construction of a temporary battery on the bluff. The temporary battery was located in the vicinity of the present-day Ribault Monument. Work began on April 11, with the clearing of vegetation. Cook then ordered construction of a small railway track from a boat landing on the St. Johns River to the top of the bluff to haul construction materials using a stationary engine (Figure 75). Arriving on April 22, 1898, two 5-inch breech-loading rifles and two 7-inch breech-loading howitzers were mounted once the temporary battery neared completion. These guns were removed and shipped to Tampa on May 18, however, for use by the American Expeditionary Force preparing to invade Cuba.

328. Prettyman, Z.
329. Prettyman, Z.
In the meantime, General Wilson issued orders on April 27 to build a permanent battery emplacement on St. Johns Bluff for two 8-inch breech-loading rifles. The permanent battery was to be located 1,200 feet to the southeast along the bluff facing St. Johns Creek, where a broader field of fire was possible. As work was being carried out to construct the battery, a peace protocol was established between the United States and Spain on August 12, 1898, and the Treaty of Paris was signed in December 1898. Nonetheless, work on the permanent battery continued, and guns were finally emplaced in January 1899. The guns were later removed without ever being fired.

The concrete permanent battery built by the US War Department in 1898–1899 atop St. Johns Bluff survives today as built, with two gun emplacements and a magazine set below the military brow of the hill behind a concrete retaining wall (Figure 76).

The connection between the elevated position of the knoll, the views toward the St. Johns River, and the battery remain evident today.

**Evaluation**

The landform and topography associated with the Spanish-American War Battery property, and the direct connection between topography, the siting of the battery, and the views toward the St. Johns River survive with integrity today and contribute to the historic setting of the property. It appears that no topographic modifications have occurred since 1899.

**Existing Conditions**

The concrete permanent battery built by the US War Department in 1898–1899 atop St. Johns Bluff survives today as built, with two gun emplacements and a magazine set below the military brow of the hill behind a concrete retaining wall (Figure 76).

**Non-historic topography**

- None
Present-day spatial conditions associated with the Spanish-American War Battery itself—composed of the batteries edged on three sides by concrete retaining walls and set below the brow of the bluff—as well as the adjacent contained space of the magazine and tunnel-like passageway leading to the western entrance, remain consistent with historic conditions. The otherwise open undeveloped character of the bluff has been replaced by a series of linear residential properties with large dwellings occupying the bluff to the northwest and southeast. Expansive views from the brow of the bluff remain present. The character of the land to the southwest of the battery has likely become more wooded since the battery was abandoned during the early twentieth century although a survey from 1899 indicates that oak trees and other woody species were present during the period of significance.

**Historic Conditions**

On April 27, 1898, General Wilson issued orders to build a permanent battery emplacement on St. Johns Bluff for two 8-inch breech-loading rifles. The permanent battery was to be located 1,200 feet to the southeast along the bluff facing St. Johns Creek, where a broad field of fire was possible. Although a peace protocol was established between the United States and Spain on August 12, 1898, before the work was completed, work on the permanent battery continued, with guns emplaced in January 1899. During the process, however, the superintendent of the project, John Cook, indicated that he would need more money to finish the project. He was...
informed by Colonel Benyaurd that because the war was over, he could not increase the funding for the project. In response to the limited funding, Cook had to reduce the planned height of the concrete pit and did not install the heavy metal doors included in the plans. Historic maps of the late nineteenth and early twentieth centuries indicate that search lights and a position finder may have been located near the battery.

As built, the Spanish-American War Battery was composed of a retaining wall that formed a U-shape around the two gun emplacements, an extension to the east for stability, and a longer section to the west that framed a tunnel and entrance into a covered magazine (refer to the HABS drawing provided as Figure 22). The crest of the battery had an elevation of 73.27 feet taken from the top of the concrete wall in front the guns. 

The earthwork crest was 11 inches above the wall at that time. A position finding station was located to the south of the permanent battery and was marked by tack driven into a maple stake squared off roughly and driven within 10 inches of the surface of the ground.

After the battery was deaccessioned by the War Department in 1923, the property remained untended for many years, even as it passed to private ownership. Photographs of the site taken in 1940 indicate that the property was overgrown at that time (refer to Figuresm73 and 74), as it remains today.

**Existing Conditions**

The Spanish-American War Battery property today is a long, linear parcel edged on both sides by similarly shaped residential parcels developed with formal plantings, driveways, and boundary fences and hedges. The Spanish-American War Battery property slopes gently to the top of the bluff through a relatively open young forest. The battery is edged by concrete walls that form a U-shaped space set below the brow of the bluff. At the top of the bluff, expansive views north can be glimpsed through the tree cover. West of the battery is a concrete tunnel that leads to the western entrance into the structure and to a lower contained room built to serve as a protected ammunition magazine.

**Evaluation**

The landform and topography associated with the Spanish-American War Battery property, and the direct connection between topography, the siting of the battery, and the views toward the St. Johns River survive with integrity today and contribute to the historic setting of the property. It appears that no topographic modifications have occurred since 1899.

**Historic spatial organization contributing to the significance of the setting**

- Spanish-American War Battery gun emplacements, magazine, and tunnel
- Wooded character south of the battery

**Non-historic spatial organization**

- Long rectilinear property

**Land Use**

**Summary Analysis**

Two historic land uses are associated with the Spanish-American War Battery property during the period of significance. These include military and transportation. The military land use was associated with construction and arming of the Spanish-American War Battery in 1898–1899. Transportation uses were associated with the construction of a rail line, referred to as a tram on some historic maps, to convey building materials to the site from the river. Both uses ended in 1899, when the artillery was removed, and the battery was decommissioned. The property, however, remained a US Military Reservation until 1923, when the property was sold.

Current land uses include conservation of the historic battery structure, and the undeveloped open space that constitutes the remainder of the property. Anticipated future use includes

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331. Ibid.
interpretation of the historic significance and use of the battery to the public by the NPS.

**Historic Conditions**

The St. Johns River has been recognized for its strategic military and economic value for hundreds of years, first by American Indian groups, later by Europeans involved in colonization of the area, and finally by the United States.\(^{332}\) The river serves as a vital interior route into eastern Florida via its mouth in the Atlantic Ocean east of St. Johns Bluff.\(^{333}\) The river flows through the city of Jacksonville, which includes a port, as well as commercial, industrial, and military developments.

Located on the south side of the river, St. Johns Bluff has a steep and narrow bluff line set approximately 75 feet above the river. The high sand ridge has served as a strategic location for defensive works since the construction of Fort Caroline in 1564, and it was later used for defensive purposes by the Spanish. Confederate forces built a battery on the bluff during the mid-nineteenth century as well. The Spanish-American War Battery was the last coastal military defense structure built on St. Johns Bluff.

**Existing Conditions**

The Spanish-American War Battery stands as a well-preserved concrete reminder of the conflict anticipated to reach United States soil in 1898 during a conflict with Spain. Preservation and conservation of the structure has occurred through the efforts of various past owners, and acquisition of the property by North Florida Land Trust in the 2010s to prevent its destruction as part of proposed residential development. The National Park Service currently protects and maintains the structure as part of a conservation land use. No other active land uses are currently associated with the property. The rest of the parcel is characterized by undeveloped open space.

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\(^{332}\) Stowell, 121.

river than the present-day Spanish-American War Battery. Because the undeveloped bluff lacked transportation infrastructure, a wharf was built along the river below the northeast corner of the bluff. Following the clearing of brush, a landing wharf and four small temporary buildings were built to support the effort in early April 1898. By mid-April, workers had cleared a roadway from the riverbank to the bluff and work began on a railroad track from the boat landing up the bluff along a ravine. The track was used in conjunction with a stationary engine that hauled the materials to the top of the bluff. The rail was rented from a local merchant with the understanding the iron would be returned at the completion of the work, in roughly six or eight weeks.\textsuperscript{334}

On April 27, 1898, two days after the United States declared war against Spain, General Wilson issued an order to build a permanent emplacement for two 8-inch breech-loading rifles on St. Johns Bluff southeast of the temporary battery.\textsuperscript{335} Construction of the permanent battery entailed site preparation, charting the lines for a new gunpit, extending the railroad track 1,200 feet, drilling for water, and erecting a building to store the 700 barrels of cement that would be needed for construction.\textsuperscript{336} Shell for the concrete was also procured and piled near the new site. Crushed stone was supplied by Georgia Quincy Granite Company near Sparta, Georgia, and transported to Jacksonville on the FC&P Railroad.\textsuperscript{337} Once built, the railway extended southeast along the west side of the temporary battery and terminated west of the Spanish-American War Battery.\textsuperscript{338} There was also a footpath present at the time that crossed the bluff from a point on the US railway between the dock and the temporary battery southwest through a swamp and pond to a road identified as “Old Road to Cosmo.”

Although the Spanish-American War ended before the battery was completed, the War Department determined that it would be prudent to emplace the proposed 8-inch guns, and so work continued through 1898. Once emplacement of the guns was authorized, additional rail tracks were rented to extend the railway to the front of the Spanish-American War Battery so that the rifles could be unloaded directly in front of the battery (Figure 77). In November, Benyaurd received an invoice for $100 for the use of the rails until January 1, 1899.\textsuperscript{339} However, the 8-inch guns remained at the foot of the bluff on the rental tracks past the deadline because construction of the emplacement was still ongoing. Wilson ultimately approved an additional $400 for the purchase of the rails from the owner to complete the construction of the permanent battery.\textsuperscript{340} In January 1899, two 8-inch breech-loading rifles were mounted at the Spanish-American War Battery.\textsuperscript{341} Each gun weighed 32,480 pounds and could fire a 300-pound projectile capable of penetrating 10.6 inches of steel at 3,500 yards.\textsuperscript{342} Further work on St. Johns Bluff was suspended.\textsuperscript{343}

Additional development of the property after 1899 appears not to have occurred. A pair of masonry columns located near Fort Caroline Road may have marked the property as a parcel for residential development following subdivision of St. Johns Bluff Estates in 1945, although no road appears to have been built in association with the columns.


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As noted above, the only circulation features present on the Spanish-American War Battery property today is the concrete tunnel that connects the battery, the magazine, and a western entry into the structure, and a gate set within the perimeter property boundary at Fort Caroline Road.

Park personnel described a possible footpath that once traversed the area referred to as “Sam’s Trail.” The footpath was used by local residents to travel between their homes and a commercial area to the west.

**FIGURE 77.** US Corps of Engineers map showing the alignment of the rail line built to supply materials for construction of coastal defenses on St. Johns Bluff, and transport the guns emplaced at the Spanish-American War Battery, 1904. (Source: NARA RG 77, File Drawer 191, Sheet 4-4, February 25, 1904)

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**Existing Conditions**

As noted above, the only circulation features present on the Spanish-American War Battery property today is the concrete tunnel that connects the battery, the magazine, and a western entry into the structure, and a gate set within the perimeter property boundary at Fort Caroline Road.

Park personnel described a possible footpath that once traversed the area referred to as “Sam’s Trail.” The footpath was used by local residents to travel between their homes and a commercial area to the west.

**Evaluation**

**Contributing circulation**

- Tunnel connecting the battery, magazine, and western entrance into the structure

**Non-contributing circulation**

- Gated entrance into the property from Fort Caroline Road

**Missing circulation**

- Railway leading to the western and northern edges of the Spanish-American War Battery
- Path referred to as Sam’s Trail
Present-day vegetation at the Spanish-American War Battery property is composed of native tree and shrub species, as well as invasive vines and herbaceous plants, representative of temperate mixed hardwood and evergreen hammock woodland. Existing vegetation likely arose from limited management of the property following the decommissioning of the battery in the early twentieth century. The land is described in period accounts as having been cleared ahead of construction of the battery both to facilitate construction and to establish a clear field of fire for the artillery to be emplaced at the site. It is unclear to what degree vegetation has been managed since the early twentieth century. Since circa 2013, the National Park Service has begun to manage the understory through mowing. Due to the steepness of the slopes of the bluff north of the battery, woody growth is difficult to manage; views toward the St. Johns River are becoming increasingly blocked by this growth.

Information regarding the composition of vegetation at the time of the construction of the Spanish-American War Battery is available in the form of period construction records and notes included on historic maps and plans prepared by the US Engineers Office. Period construction accounts suggest that work on the temporary battery began on April 11, 1898, when superintendent of construction John M. Cook ordered workers to begin to clear vegetation from the bluff. Tree cover would have been removed to facilitate construction as well as ensure a clear field of fire for the artillery to be emplaced in the batteries.

Although tree cover was likely removed in and around the site of the Spanish-American War Battery, a map dated December 1899 indicates the landscape to the south of the battery to be composed of “oak 5” to 12” 30’ high; Thick Brush, Scrub Oak, Myrtle, Holly.” To the northwest of the battery, the vegetation is indicated as “Oak, 8” to 24”, 40’ high. Underbrush, Scrub Oak and Bay.” Another map prepared around the same time indicates the vegetation on the bluff to be “oak, bay, etc. hammock” on the upland. Both maps indicate the presence of marsh along St. Johns Creek (Figure 78 and Figure 79).

Little else is known about vegetation on the bluff following abandonment of the battery. Aerial photographs dated 1943 and 1960 indicate that the bluff was wooded except where residences were built following subdivision of the land as the St. Johns Bluff Estates in 1945 (Figure 80 and Figure 81).

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FIGURE 78. Map dated December 28, 1899, of the St. Johns Bluff area and military reservation. (Source: NARA RG 77, File Drawer 191, Sheet 4, 2 of 2)

FIGURE 79. Sketch of a portion of St. Johns Bluff showing the relationship between St. Johns River, St. Johns Creek, the bluff, and the marshland, as well as the battery sites and rail line established in 1898–1899. (Source: NARA RG 77, File Drawer 191, Sheet 2, January 9, 1899)
FIGURE 80. Aerial photograph of St. Johns Bluff in 1943 indicating woodland over the area where the Spanish-American War Battery and other military features were developed in 1898–1899. (Source: National Park Service)

Currently, vegetation on the Spanish-American War Battery property is representative of a temperate mixed hardwood and evergreen hammock community. Species represented on the property include live oak, Southern magnolia, and Southern hackberry in the canopy layer, and saw palmetto and oak saplings in the understory and shrub layers. Yucca and several vines, including catbriar and grape, are present in the herbaceous layer. Grasses, ferns, and saplings are found growing in cracks and crevices in the battery structure.

The woodland is generally consistent in species composition throughout with live oak trees predominating. The vegetation is generally denser along the property margins and more open near the center where the National Park Service maintains a grassy ground cover layer through mowing. The property margins appear to be less maintained, and have dense stands of saw palmetto, saplings, and tangles of vines.

The trees near Fort Caroline Road are more diverse, with live oaks as well as Southern magnolia and hackberry trees. Upslope, most of the trees are live oak. Although the trees vary in size, several are large and appear mature. Several of the trees are not entirely upright.

Two invasive species—air potato vine and sword fern—are also present throughout. These plants are non-native exotics with the potential to disrupt native plant communities through their aggressive growth and ability to establish monocultures that exclude other species. Both are classified as Category 1 invasives, suggesting that they pose a threat to native plant communities and that the implementation of control mechanisms is warranted.

Vegetation associated with the slope leading to St. Johns Creek is also dense but lower growing. It appears to reflect past efforts, at least near the top of the bluff, to remove taller woody trees and shrubs to maintain the view to the river.

Marsh vegetation along St. Johns Creek was not surveyed on behalf of this project, but generally appears undisturbed and likely remains representative of native salt marshes in the area. St. Johns River is tidal. Brackish water flows into St. Johns Creek when the river is inundated during high tide periods.

[Note: Detailed information about the age of individual trees is not currently known. The NPS request for additional information about the diameter at breast height of individual trees cannot be provided until the team is able to access the property once it is safe to travel again due to COVID-19 restrictions. Alternately, if the park is available to collect this information, we will add it to the report for the next submittal.]

Several of the trees are large mature specimens that may survive from the period of significance, based on the evidence of aerial photographs that indicate that the site was entirely wooded in 1943 as well as in 1960. The bluff is identified in an 1898 survey as an “oak, laurel, etc. hammock” plant community, suggesting that the present-day woodland is similar in character to that which was present at the time the battery was constructed.

**Historic vegetation contributing to the significance of the setting**

- Temperate mixed hardwood and evergreen hammock woodland community with mature trees that may survive from the period of significance
- Woody vegetation on the bluff managed to maintain a view of St. Johns River
- Marsh vegetation along St. Johns Creek

**Non-historic vegetation**

- Invasive species

**Buildings and Structures**

**Summary Analysis**

The only built structures currently associated with the Spanish-American War Battery property are
those associated with the battery, magazine, and tunnel built between 1898 and 1899 on St. Johns Bluff. Missing are rail line tracks laid in support of conveying concrete and other construction materials to the bluff and supporting features such as a position finder. No other buildings or structures were present historically on the property or have been built since.

To the northwest, however, additional military coastal defense structures were built around the same time as the Spanish-American War Battery that supported the construction and operation of the emplacement. These included a dock along the St. Johns River, a road, rail line, cluster of buildings, and a temporary battery. Little or no evidence of these features survive today. Many were present within the Timucuan Historic and Ecological Park unit associated with the Ribault Monument.

**Historic Conditions**

As noted previously, construction of coastal defenses along the St. Johns River occurred in response to conflicts arising between the United States and Spain following the sinking of the USS Maine in Havana Harbor on February 15, 1898. Five days after the sinking of the Maine, Governor Bloxham directed the Jacksonville Naval Militia to conduct a detailed reconnaissance of the Atlantic coast to locate sites suitable for establishing signal stations and to identify other relevant information from a strategic military standpoint. The governor’s directive was one of the earliest set of military orders issued by any state before the Spanish-American War. The US Congress soon appropriated funds for the improvement of military coastal defenses on March 9, 1898, with the threat of Spanish naval attack on US coastal positions looming. On April 25, 1898, America declared war on Spain after learning of plans to attack Key West and blockade the American coast.

Based on the history of military activity within Jacksonville during the Civil War, the citizens requested assistance from the War Department in defending their city. By early April, military personnel were considering erecting a temporary battery on St. Johns River and providing mines that could be placed in the river. The temporary battery would be designed to emplace two modern rapid-fire 5-inch rifles, while a permanent battery might also be considered where larger guns might be emplaced.

Work began on fortifications on St. Johns Bluff in April 1898. The first structure to be constructed was a landing wharf that could be used to convey building materials to the remote and relatively inaccessible site. Along with the wharf, four small temporary buildings were erected nearby. Eventually, a total of six buildings were constructed on the bluff:

- a 22-foot–by-12-foot kitchen;
- a 50-foot-by-12-foot stable used to store wheel barrows, iron pipe, and batters;
- a 16-foot-by-12-foot dwelling;
- a 30-foot-by-12-foot watchman’s house;
- an 18-foot-by-12-foot storehouse; and,
- a cross-shaped torpedo storehouse composed of an 81-foot-by-17-foot main block and lesser wings designed to store river mining material.

Railroad track was laid between the wharf and the bluff. Work then began on a temporary battery, which eventually housed two 5-inch rifles and two 7-inch howitzers (Figure 82). The battery was built using 10-inch-by-10-inch timbers to establish the revetment and magazine, which were then covered with a sand embankment partly surfaced with “marsh muck.” Later that month, four guns were mounted in the temporary battery.

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346. Buker, 1989, 8; Davis, 208.
348. Ibid.
349. Ibid., 34–35.
350. Thompson, November 1898; Buker, 1989, 18.
An electrically controlled mine field, a key part of Endicott System defenses, was also planned for St. Johns River. Delays in mining the river occurred due to shortages of materials and funding. In May, work finally progressed. A temporary mine casemate, a wooden building measuring 16 feet by 25 feet, was built near the cluster of temporary structures on the bluff to hold the terminals of the submarine cables to the planted mines. On June 10, however, the temporary casemate was destroyed by an accidental explosion caused during the testing of mine plugs. The mine material was later removed following the signing of a peace protocol with Spain in August 1898.

Orders to begin work on the permanent battery were issued on April 27, 1898, two days after the United States declared war on Spain. Construction of the permanent battery entailed preparing the site, charting the lines for a new gunpit, constructing a 1,200-foot-long extension of the railroad track, drilling for water, and constructing a building to store cement. Seven hundred barrels of cement were shipped and stored on St. Johns Bluff. Shell for the concrete was also procured and piled near the new site. Crushed stone was supplied by Georgia Quincy Granite Company near Sparta, Georgia, and transported to Jacksonville on the F. C. & P. Railroad. The structure slowly rose to include a concrete

352. Ibid., 23.
353. Ibid., 24.
354. Ibid., 17.
355. Ibid.
356. Ibid., 26.
retaining wall along the northern edge, two gun emplacements, a covered magazine, and a tunnel connecting the features to an outer entrance along the western side (Figure 83).

By July 1898, around the same time that the American forces won victories at San Juan and El Caney, excavation for the Spanish-American War Battery’s 8-inch gun emplacements was complete, and the magazine nearly finished. Since crushed stone for the foundations proved difficult to obtain during the war, a rock crusher was rented in Jacksonville to increase the supply of crushed stones. Work continued even after the peace protocol was signed in August. In November, John Cook notified Colonel Benyaurd that additional funds were necessary to finish construction.

However, since the war had ended, Benyaurd could not supply additional funds for the project. To cut costs, Benyaurd suggested that the original height planned for the concrete pit should be reduced. He also indicated that installation of the doors shown in the plans for the battery would not be necessary. The concrete structure as it exists today was completed in early January, and the two 8-inch breech loading rifles were mounted at the battery. Each gun weighed 32,480 pounds and could fire a 300-pound projectile capable of penetrating 10.6 inches of steel at 3,500 yards. The concrete cover over the magazines was left unfinished and sand was not placed over the magazine as intended. Further work on St. Johns Bluff was suspended following emplacement of the rifles.

FIGURE 83. HABS measured drawing of the bomb proof magazine associated with the Spanish-American War Battery, 1934. (Source: Library of Congress)

358. Ibid., 29. 362. Ibid., 30.
359. Ibid. 363. Ibid.
360. Ibid. 364. Ibid.
The 8-inch guns were never serviced by troops or test fired by the Corps of Engineers. Benyaurd hired a watchman to live on the military reservation, to perform minor repairs to the buildings, and to clean and protect equipment as needed. The buildings were all demolished during the early 1900s, leaving only the permanent battery.

Existing Conditions

Today, the Spanish-American War Battery property contains all features of the original battery, tunnel, and magazine built by early January 1899. No other structures are present on the property.

Evaluation

The Spanish-American War Battery structure survives with integrity today and is the only built structure present.

Contributing buildings and structures

- Spanish-American War Battery (battery, tunnel, magazine)

Non-contributing buildings and structures

- None

Missing buildings and structures

- Position finder (possible)

Views and vistas

Summary Analysis

Views were an essential component in the siting of the Spanish-American War Battery. The US Board of Engineers constructed the battery on a high point of St. Johns Bluff to take advantage of the strategic views over St. Johns River, an important waterway for US coastal defense. As part of a broader plan for improving and enhancing military coastal defenses, the US Engineers Office analyzed regional landforms, topography, and waterways for their suitability for military emplacements during and after the Spanish-American War. Maps prepared at the time indicate the potential field of fire that could be achieved by placing batteries at certain locations along the St. Johns River (Figure 84 and Figure 85). The Spanish-American War Battery was built as part of a larger system of artillery emplacements that took advantage of views of the river to protect against enemy attack.

Although views from the battery are becoming blocked by woody vegetation today, the key visual relationship between the structure, the apex of the bluff, and the ability to see long distances due to the rapidly declining topography to the north remains apparent today.

Historic Conditions

Historic maps from the period during which the Spanish-American War Battery was constructed indicate the intention for the battery and the emplaced artillery to face the river with direct views of potential approaching enemy ships, and with the ability to fire upon them without impediments. To this end, vegetation would have been cleared to ensure a clear field of fire. The battery was sited below the military brow of the bluff behind a concrete retaining wall to screen it from view of enemy ships on the river below. Period maps also show that near the battery were a position finder station where approaching enemy ships could be spotted, and their positions calculated. These calculations were essential to aligning the guns to fire on an approaching ship.

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365. Ibid.
366. Ibid., 30-31.
367. Charles Sperry to McKinstry, RG 77, Entry 1170, ox 1, folder September 1899, Atlanta Federal Archives & Record Center, East Point, Georgia.
FIGURE 84. Map titled “General Project for Defense Proposed by the Board of Engineers,” 1900. (Source: NARA RG 77, File Drawer 191, Sheet 9-3, February 28, 1900)

FIGURE 85. Map titled “Defenses of St. Johns River, Fla.,” showing the intended field of fire for the Spanish-American War Battery, 1899. (Source: NARA RG 77, File Drawer 191, Sheet 3-2 1899)
From St. Johns Road, views are afforded into the parcel through breaks in the vegetation. Once within the gate, views are also afforded toward the battery except where blocked by vegetation, especially understory plants that obscure views at eye level. An important view is afforded through the tunnel during the descent from the gun platform toward the magazine. Once past the entrance to the magazine, the view is of the adjacent residential property, which closely abuts the tunnel structure.

Views are also afforded toward St. Johns River from the top of St. Johns Bluff. Tree cover has begun to block these views from the bluff in front of the battery. Residences are present to the east and west of the battery that are visible from some vantage points within the battery parcel.

**Evaluation**

The historic strategic view from the battery survives today but is obscured by tree cover. No evidence of the station for a position finder indicated on historic maps survives today. As part of the descent into the tunnel associated with the battery, there is a view out to the northwest of the adjoining property. A view in this direction would have been present as well during the period of significance, but without the residential development added during the late twentieth century. Overall, where views are afforded of adjacent residential development, these postdate the period of significance and are non-contributing.

**Historic views and vistas contributing to the significance of the setting**

- View from the battery to the St. Johns River to the north
- View from the tunnel to the northwest
- View toward the battery from the property beginning near Fort Caroline Road

**Non-historic views and vistas**

- Woody growth on the bluff that blocks historic field of fire views
- Residential development on the adjacent parcel to the northwest that is visible from inside the tunnel past the entrance into the magazine
- Views of adjacent residential developments to the east and west from inside the property

**Small-scale features**

**Summary Analysis**

The only small-scale features associated with the Spanish-American War Battery site are two masonry columns, a fence and gate, and signage located along the property margin that abuts Fort Caroline Road. The date of origin of the columns is not currently known, although they likely were built to support development of the parcel following subdivision in 1945. Similarly, the date of origin of the boundary fence and gate and signage is not known, but they are contemporary additions to the property (Figure 86).

Little is known about small-scale features present during the period of significance. A position finder is indicated on historic maps to the northeast of the battery. Within the area to the northwest of the Spanish-American War Battery were buildings and a temporary battery were constructed, the War
Department raised an American flag that is no longer extant.\textsuperscript{368}

**Evaluation**

**Contributing small-scale features**
- None

**Non-contributing small-scale features**
- Masonry columns (2)
- Boundary fence and gate along Fort Caroline Road
- Signage

**Resilience to Natural Hazards**

Emerging trends in the severity of weather events, rising temperatures, and increasing rainfall totals are currently affecting ecosystem processes such as forest and marshland structure, composition, and function along the eastern seaboard of the United States. Increased temperatures, pollution, non-native insect pests, disease, and invasive plants are all contributing to the altered ecosystem processes observed by scientists and others. An analysis of environmental conditions and ecological processes at Timucuan Historic and Ecological Preserve conducted during the 2010s indicate that climatic conditions are shifting faster than anticipated.\textsuperscript{369} The environmental changes are affecting all aspects of preserve management, including natural and cultural resources and the visitor experience.\textsuperscript{370}

Annual temperatures predicted for the preserve are forecast to increase from 1.9 to 6.5 degrees Celsius by sometime between 2070 and 2099 compared to the baseline established in 1990.\textsuperscript{371} Precipitation is predicted to increase from 6.2 to 11.9 percent within the same time frame from a baseline of 52.1 inches of annual precipitation.\textsuperscript{372} However, it is important to note that predicting climate change and sea-level rise is not an exact science; various future scenarios have been developed and modeled in an attempt to quantify future climate change.\textsuperscript{373}

Based on some of these models, the National Park Service has considered how park resources may be impacted by the predicted change of temperature and precipitation in the future. The models address the vegetation changes, and the complex and uncertain interactions among climate change, non-native biotic stressors, and plants, anticipated to occur based on current information available for anticipated climate change. For example, with changes in forest structure, composition, and function, there is likely to be an associated impact on habitat and its suitability, availability, and quality to support the habitat of species now present within the preserve. An anticipated increase in temperature could correlate to a drier landscape, decreased availability of both surface

\textsuperscript{368} HABS, Photographs and Written and Descriptive Data, 1934, 4.


\textsuperscript{370} The NPS has defined resilience as the ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and functions. In addition, the NPS has defined mitigation as the lessening of the potential adverse impacts of natural hazards through actions that reduce hazard, exposure, and vulnerability. Correspondence with NPS SERO, August 2018.

\textsuperscript{371} Monahan and Fischelli, 2014.

\textsuperscript{372} Monahan and Fischelli, 2014.

and groundwater, and resulting impacts on aquatic and wetland environments.

Plant community changes can also be anticipated using the models, such as the loss of some species due to increased temperature, higher or lower precipitation levels, increased carbon dioxide levels, and changing patterns of inter-specific competition.\textsuperscript{374} The influence of non-native plant species on native communities could be increased as a result of climate changes, particularly in areas where native plant species are unable to adapt to changing conditions.\textsuperscript{375} In the preserve, potential forest change in tree species was projected to be 45 to 55 percent by 2100, with much uncertainty in forest change projections.\textsuperscript{376}

Sea-level rise is another result of climate change that is already impacting the preserve and is anticipated to play an increasing role in ecosystem process adaptation. In the vicinity of the preserve, sea level has risen more than 8 inches over the past 80 years. Sea level is likely to rise substantially over the course of the current century, with projected increases of 1.8 to 5 feet by 2100. Storm intensity and storm-surge heights are also likely to increase. Sea-level rise and coastal inundation will impact natural resources in several ways, including a reduction in habitat for juvenile estuarine finfish and crustacean shellfish and a related decrease in fisheries production. Changes in temperature, ocean pH, local acidification, sea level rise, and saltwater intrusion could impact molluscan shellfish and change their distribution. Warmer water may result in an increase in harmful algal blooms and in pathogens that affect shellfish and subsequently humans when consumed. The combination of sea-level rise and increased storm surge will also likely exacerbate shoreline erosion at the preserve.\textsuperscript{377}


\textsuperscript{376} Monahan and Fischetti, 2014.

\textsuperscript{377} National Park Service, 2016.
Analysis and Evaluation

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Figure 86. Contributing Resources

Legend
- Parcel boundary
- Waterway
- 10-foot contours
- 2-foot contours
- Roads
- Buildings
- Fence
- Tree locations
- Dead trees

Notes:
1. Dimensions and locations are approximate, based on field observations, NPS-provided GIS data, and GIS data from the Florida Geographic Data Library.
Treatment Plan

Introduction

Treatment is a preservation strategy for long-term management of a historic property, intended to direct physical work on the landscape so that the distinguishing characteristics and features that contribute to the significance of the property are preserved. This treatment plan has been prepared to provide the National Park Service with an overall vision for the cultural landscape of the Spanish-American War Battery at Timucuan Ecological and Historic Preserve. The plan is intended to guide and support long-term management and interpretation of the property and its significant historic resources. The plan is composed of treatment guidelines and recommendations, suggestions for future implementation projects, and planning level cost estimates related to the work proposed in the implementation projects.

The treatment plan addresses stewardship of historic natural and cultural resources associated with the Spanish-American War Battery in accordance with federal guidelines. The treatment plan has also been developed based on the assumption that both natural and cultural resources merit careful stewardship and conservation strategies, which may at times suggest the need for research and archeological investigation.

The treatment plan also responds to the specific management issues, concerns, and objectives conveyed to the CLR/EA team in the project statement of work and by park and regional National Park Service personnel during a start-up meeting conducted on behalf of this project and a teleconference conducted at the kick-off to the 95 percent draft document preparation phase.

1. Park Management Goals, Issues, and Concerns describes the desired conditions identified in the project statement of work, during the project start-up meeting, and during consultation to kick-off the 95 percent draft CLR.

2. Recommended Treatment Approach presents the four approaches recognized by the Secretary of the Interior for treating historic properties, and identifies the approach recommended for the Spanish-American War Battery as part of this CLR.

3. General Management and Design Guidelines for Treatment provides an overarching set of guidelines that applies to all resource management activities conducted within the property.

4. Treatment Concept conveys the overarching vision or concept for landscape treatment within the park to meet the National Park Service issues, goals, and concerns identified as part of this project.

5. Treatment Recommendations provides cultural landscape treatment recommendations that identify the individual actions required to address the park’s management goals, issues, and concerns.

6. Implementation Projects identifies projects that could be used in the future to effect implementation of the CLR treatment recommendations, once additional recommended research, investigation, documentation, and planning efforts are
completed. The implementation projects are supported by planning level estimates of probable cost.

**Park Management Goals, Issues, and Concerns**

The management goals, issues, and concerns to be addressed by this treatment plan were identified in two ways: in the project statement of work prepared by the National Park Service in June 2018, and during a project start-up meeting held on July 9, 2019, at the park. The meeting was attended by National Park Service park and regional personnel and members of the Panamerican/WJE/LSHLA CLR team both in person and by teleconference. Additional management goals, issues, and concerns were gleaned from field investigations and review of previously prepared planning and inventory documents. The primary issues to be addressed by the treatment plan include the following:

- Facilitate development of an appropriate treatment alternative to guide future battery restoration and visitor use
- Address preservation of historic resources, particularly the battery, which is experiencing condition issues with the concrete
- Identify and protect/restore significant views and vistas
- Consider ways to make the site accessible to the public
- Address pedestrian and vehicular circulation system needs to accommodate visitor and park use
- Consider how to accommodate parking for cars and oversized vehicles
- Consider the need for, location of, and size of orientation areas, raised overlooks, landings, and walkways
- Consider options for providing interpretive information to the public
- Address visual separation of the property from the neighboring properties
- Consider access control
- Consider how to address visitor safety
- Consider management and maintenance needs
- Discuss opportunities for potential connections to city and regional trail systems

**Treatment Approach**

The four treatment approaches recognized by the Secretary of the Interior for historic properties were considered in conjunction with the park’s objectives in developing this CLR to determine the approach most suitable for the Spanish-American War Battery.

The four treatment approaches include: preservation, rehabilitation, restoration, and reconstruction. Described in *The Secretary of the Interior’s Standards for Historic Properties* as forming “the philosophical basis for responsible preservation practice and enable long-term preservation of a landscape’s historic features, qualities, and materials,” the approaches are defined as follows:

- **Preservation**: the act or process of applying measures necessary to sustain the existing form, integrity, and material of a historic property. Includes stabilization work, where necessary, as well as ongoing preservation maintenance and repair of historic materials and features.

- **Rehabilitation**: the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving
those portions or features which convey its historical, cultural, or architectural values.

Restoration: the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by removing features from other periods in its history and reconstructing missing features from the restoration period.

Reconstruction: the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.

**Recommended Treatment Approach for the Spanish-American War Battery**

Based upon the park’s need to meet current and projected future interpretive, functional, and management goals, rehabilitation is recommended as the most appropriate overarching treatment approach for the Spanish-American War Battery cultural landscape. Because rehabilitation is defined as the act or process of making possible a compatible use for a property, this approach allows for protection of the site’s historic character and resources while carefully addressing the need for limited enhancement of interpretive opportunities and circulation routes, ecological maintenance and restoration, and the improvement of visitor amenities.

As part of rehabilitation, stabilization, protection, and preservation of historic and natural resources are assumed even when new uses are accommodated. Areas of the landscape that are particularly sensitive to change and disturbance, such as sites of known and potential archeological resources, should be treated with great care. In general, the CLR recommends preservation of archeological resources unless a compelling research question or informational need justifies disturbance or excavation, or mitigation to accommodate unavoidable change as necessary.

In considering the other treatment alternatives recognized by the Secretary of the Interior for the Spanish-American War Battery cultural landscape, the CLR found them inappropriate for the following reasons:

Preservation is overly restrictive because it does not allow for the changes to the landscape to accommodate contemporary needs, such as universal accessibility enhancements.

Restoration and reconstruction are not practical because they assume, as a prerequisite, that sufficient documentation exists to accurately portray a lost historic condition. At this time, it does not appear that there are documentary sources detailed enough to support comprehensive restoration or reconstruction of the associated features present at the Spanish-American War Battery during the period of significance because insufficient documentation is available to accurately portray missing conditions.

**Secretary of the Interior’s Standards for Rehabilitation**

The following section summarizes the standards for rehabilitation espoused by the Secretary of the Interior for historic properties. The ten basic principles that comprise the standards are intended to help preserve the distinctive character of a site while allowing for reasonable change to meet new needs. The standards (36 CFR Part 67) apply to historic properties of all periods, locations, sizes, conditions, and uses. These standards create a baseline of guidance to which intended changes to the historic landscape must be compared. These standards are neither technical nor prescriptive but promote responsible preservation practices. They include:

- A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
- The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
Treatment Plan

- Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.

- Changes to a property that have acquired historic significance in their own right will be retained and preserved.

- Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

- Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

- Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

- Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

- New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

- New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

General Management and Design Guidelines for Treatment

The following section provides general guidelines for the treatment of the Spanish-American War Battery that are intended to support the rehabilitation approach and the treatment recommendations provided later in the chapter. They are to be used in conjunction with the Secretary of the Interior’s Standards for Rehabilitation cited above and in connection with each of the proposed landscape treatments included in this report. These guidelines relate to a philosophy of cultural landscape treatment based on The Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes, and a comprehensive view of the property. The guidelines should be used when planning for any and all landscape change.

Role of Preservation Specialists

- Undertake all treatment projects under the direction of appropriate specialists, including historical landscape architects, historical architects, archeologists, natural resource management specialists, and qualified technicians and artisans.

- Evaluate all proposed new uses in consultation with a historical landscape architect and other appropriate professionals.
**Documentation**

- Document, through drawings, photographs, and notes, all changes and treatments made to the historic landscape. Consider the use of the most current cartographic technology in documentation efforts, including digital scanning, which might also be used to support interpretation as well.

- Maintain records of treatments and preserve documentation according to professional archival standards.

**Sustainability**

- Institute cultural and natural resource treatment and maintenance methods that are environmentally and culturally sensitive and sustainable over the long term.

- Minimize areas of disturbance, earth grading and compaction, and drainage pattern alteration.

- When introducing any new intervention, consider limiting the extent of grading involving cut and fill, particularly cut which has the potential to disturb belowground archeological resources and information potential.

- Implement the least-intrusive measures and those involving stabilization first, and subsequently proceed to the more invasive as necessary.

- Limit major new interventions to areas that have previously been disturbed.

- Take into consideration life-cycle costing of materials to assess their long-term wearing capacity and maintenance costs.

- Consider materials that are non-toxic, durable, long lived, and low maintenance.

**New Design and Construction**

- Avoid adding new features or altering existing features in ways that adversely affect the landscape’s historic character. New construction should be limited to the least impactful alterations and additions necessary to accommodate visitor access, interpretation, and management of the property. This might include pedestrian and interpretive systems such as trails and paths, and unobtrusive and minimal wayside, informational, identity, and regulatory sign systems.

- Ensure that new or altered features are as unobtrusive as possible while allowing for accessibility and meeting safety codes and regulations.

- Consider the potential to utilize off-site facilities to accommodate contemporary uses.

- Undertake sufficient study and recordation of landscape features requiring modification, repair, or replacement before work is performed to protect research and interpretive values.

- Retain and maintain historic materials, features, finishes, construction techniques, spaces, and spatial relationships when changes to the cultural landscape are considered.

- Design and site new additions or alterations to the landscape in such a way that they do not destroy historic materials, features, and spatial relationships that characterize the cultural landscape. Design all new additions and alterations to be a product of their time, and compatible with the historic resources in materials, size, scale and proportion, and massing. Differentiate new work from existing historic resources.

- Design and site new additions and alterations to the landscape in such a way that, if removed in the future, the essential form and integrity of the cultural landscape would be unimpaired.

- Retain and maintain changes to the cultural landscape that have acquired historic significance in their own right.
Repair, rather than replace, deteriorated historic features. When replacement is recommended due to severely deteriorated conditions, the replacement feature should be designed based on all available archeological, documentary, and/or physical evidence. New replacement features should match the old in design, color, texture, and, where possible, materials.

Avoid, when possible, landscape changes that create a false sense of historical development, including the addition of conjectural, typical, or representative features. Consider interpretation of typical features in cases where restoration is not possible but the provision of information is important to the visitor experience.

Design new features, systems, and programs to be as accessible as possible for the widest audience.

Minimize the visual and physical impacts of visitor access facilities on cultural resources and natural systems. Develop the least-intrusive visitor access improvements possible.

Avoid the use of chemical or physical treatments that cause damage to cultural resources and natural systems. Undertake the surface cleaning of structures using the gentlest means possible.

Minimize disturbance associated with the installation of visitor access facilities.

Interpretation

Develop an interpretive program that addresses cultural resources, natural systems, and their interrelationships, as well as layers of landscape history.

Establish new waysides in the least intrusive manner possible to fulfill proposed new interpretive goals.

Provide an alternative means for interpretation, such as a visitor center exhibit, for those features located in areas that cannot be made universally accessible or where new interpretive features would be a visual intrusion.

Minimize the visual and physical impacts of interpretive facilities on cultural resources and natural systems. Develop the least-intrusive interpretive improvements possible.

Develop interpretive programs and media to be as accessible as possible for the widest range of visitors.

Natural Systems and Features

Encourage best management practices (BMPs), integrated pest management (IPM), and soil and erosion-control measures in all maintenance and management practices in order to minimize water pollution and degradation of natural systems.

Promote the health and viability of native vegetative cover in all management and maintenance practices, and ensure that any plants installed on site are suited to local soil and moisture conditions.

Evaluate the potential impact to wildlife habitat prior to undertaking any construction or removal project.

Avoid altering the habitats of rare, threatened, or endangered species or species of special concern.

Land Use

Monitor and regulate use of the landscape to minimize immediate and long-term damage to natural and cultural resources.

Avoid land use activities, permanent or temporary, which threaten or impair known or potential archeological resources.

Limit, monitor, and control access to areas that are vulnerable to damage from human access or use.
Consider equally both natural and cultural features in treatment and land use decisions.

**Buildings and Structures**

- Avoid conjectural reconstruction of historic buildings and structures.
- Repair and maintain historic buildings and structures in accordance with the Secretary of the Interior’s Standards for the Treatment of Historic Properties.
- Protect historic buildings and structures during work on adjacent landscape features.

**Circulation**

- Consider carefully the impact of proposed new circulation systems on natural and cultural resources.
- Minimize the visual impacts of any proposed pedestrian access systems.
- Construct new circulation systems in as minimal a fashion as possible to access points of interest.

**Small-scale Features**

- Keep the number of contemporary small-scale features to the minimum required for visitor and staff comfort and safety.
- Erect the minimal number of signs possible for identity, directional, interpretive, and regulatory needs.
- Incorporate site furnishings within the site that are compatible with the character of the property in terms of concept as well as materials and finishes.
- Ensure that the style of site furnishings is uniform throughout the property.
- Develop a plan for site furnishings that identifies the style and products appropriate for use within the property.

**Archeological Resources**

- Protect and preserve archeological resources in place. If such resources must be disturbed, undertake mitigation measures such as recovery, curation, documentation, and interpretation.
- Limit the use of destructive techniques, such as archeological excavation, for situations where information is anticipated to support critical research, interpretation, and management goals.

**Treatment Concept**

The section that follows is intended to convey the overarching vision or concept for landscape treatment at the Spanish-American War Battery.

The Spanish-American War Battery protected as part of Timucuan Ecological and Historic Preserve is significant at the statewide level as one of a series of coastal fortifications in Florida developed during the Endicott period. These fortifications represent advances in military engineering and improvements made by the federal government to address coastal defense needs in response to the threat posed by the Spanish-American War. The battery also occupies terrain that has served military defense purposes for centuries due to its visual command of the St. Johns River and its relationship to the important port at Jacksonville, Florida. The battery is a significant historic resource that merits careful protection and preservation. As the steward of the property, the National Park Service intends to balance protection of the battery with the provision of public access and interpretation.

The battery and an associated magazine are the only surviving evidence of a military reservation designed on St. Johns Bluff in the late nineteenth century. The structure is in relatively good condition and possesses integrity to convey its historic associations with military defenses of the period. Key visual relationships with the St. Johns River that were essential to the siting and operation of the battery also survive. The primary goal of treatment of the cultural landscape at the
Spanish-American War Battery is long-term preservation and protection of these resources, which contribute to the historic character and significance of the property.

The treatment plan provides recommendations for appropriate care of concrete and metal components of the battery, as well as vegetation, some of which contributes to the significance of the property and some of which threatens the condition or integrity of historic resources. The recommendations provided herein are considered with long-term ecological and economic sustainability in mind, and with the understanding that treatment of the cultural landscape balances natural and cultural resource management within a broader framework of sustainable land management practices. Efforts conducted by the National Park Service to address landscape management with ecological principles should be considered for inclusion in interpretive programming at the park.

The native woodland that currently occupies the site would be retained to the extent possible, with existing trees maintained for the safety of visitors and protection of the battery structure. The existing woodland composed of temperate evergreen and deciduous hammock species contributes to the significance of the property. Perpetuating this woodland by retaining all extant healthy trees, managing or eradicating invasive species, and either planting or allowing the growth of understory and replacement canopy species associated with the hammock plant community are recommended. Trees would be evaluated regularly by a certified arborist to determine whether they pose a hazard to the battery or visitors, with appropriate pruning or removal to follow. Replacement in kind would be considered where trees are removed.

At the top of the bluff, the treatment plan recommends that the view to the St. Johns River be maintained as open and clear of woody trees and shrubs at eye level. This objective might be achieved through removal of all woody vegetation within view of the top of the bluff, or through removal of woody growth through limbing up existing trees and pruning other vegetation to a maximum height of 4 feet above grade. At the same time, a protective barrier is recommended at the top of the bluff to protect visitors from accessing the steep and dangerous slope. The intended character proposed for the barrier would have a limited visual impact on the historic property.

Although the structure and its relationship to St. Johns Bluff survive today, residential properties abut the property to either side. To limit the impact of the views of adjacent residences, the treatment plan provides guidance regarding the establishment and maintenance of a screen buffer along the eastern and western boundaries of the property. Additional plantings of native evergreen trees and shrubs are recommended to supplement the existing woodland where the screen planting does not entirely buffer views of adjacent properties, or where care of existing plantings, including removal of invasive, diseased, or hazard species results in gaps in the buffer.

Finally, the treatment plan provides a conceptual plan for the provision of visitor access to the property and an understanding of the history and significance of the battery, including the context within which it was built. The conceptual plan identifies the appropriate means for visitors to enter the property, circulate through the site, and gain an understanding of the historical events and associations through the provision of interpretive information. The conceptual plan carefully addresses these needs in such a way as to limit the impacts on significant cultural and natural resources.

Several of the recommendations suggest a series of action items to be pursued by the National Park Service. These are described in detail in the Implementation Projects section that follows the recommendations below.
Treatment Recommendations

Refer to Figure 99, Preservation Treatment Plan.

General Recommendations

- Prepare a National Register of Historic Places nomination for the Spanish-American War Battery.
- Protect and maintain all contributing cultural landscape features in good condition. These include:
  - Spanish-American War Battery
  - Views to the St. Johns River
  - Sloped topography
  - Temperate deciduous and evergreen hammock woodland vegetation south of the battery structure
- Initiate an annual monitoring program to evaluate the condition of historic features, such as the battery and the trees on site. Record the results and use them to plan for necessary corrective actions.

Archeological Recommendations

- Complete an archeological survey of the Spanish-American War Battery property to determine the presence of any belowground resources and information potential associated with the property. Consider conducting archeological excavation to locate the buildings and tram associated with the battery shown on maps prepared in 1898 and 1899, including an 1899 sketch prepared by Chares Sperry entitled “Relative Positions of Buildings at St. Johns Bluff.” Use this information to identify areas sensitive to change, and to guide the design of any proposed changes to the landscape, including visitor access and interpretation improvements.
- Use non-invasive techniques to locate potential subsurface resources. These techniques might include ground penetrating radar (GPR), gradiometer survey, landscape archeology, LiDAR (light detection and ranging), and metal detector survey.
- Utilize the findings of non-invasive methods to identify areas of possible interest for conducting subsurface investigations. Prior to conducting any subsurface investigations, develop research questions to be addressed by the endeavor. Shovel test the entire property at 20 meter intervals in coordination with geophysical remote sensing of the grounds to locate buried archeological sites. Conduct further Phase II testing of any anomalies based on Phase I results.
- Determine integrity and potential National Register eligibility of archeological sites identified through the survey.
- Ensure that all archeological investigations are fully documented, and that the findings as well as the artifacts are archived at the park. Utilize information gained through archeological investigations to guide interpretation of the historic landscape and the siting of proposed new park features.
- Assess the structural stability of the bluff terrain associated with the battery. As part of this assessment, evaluate whether the condition of the bluff presents a threat to the battery, and how removal of existing trees to protect the battery or to reestablish the historic viewshed would affect the stability of the bluff.
- Protect and maintain the native vegetation associated with the bluff and the marshland at the northeastern end of the property.
- Manage stormwater by allowing it to sheet flow across the open green space of the slope to the southwest of the battery. Where erosion becomes evident, correct any channelization that might be occurring to encourage broad
spread of the water and its infiltration into the
ground. Consider the establishment of a
raingarden at the parking lot which is located
downhill from the sloping topography of the
site. The raingarden would help to both
capture and cleanse stormwater before it
infiltrates into the ground. (See Implementation
Project 3: best management practices.)

Spatial Organization
Recommendations

- Protect and maintain the spatial organization
  of the property composed of the linear space
  edged by property fencing and shrubs, a
  central sloped area shaded beneath the canopy
  of mature hardwood trees, the architectonic
  form of the battery set near the brow of the
  hill, and the apex of the hill that historically
  afforded sweeping views toward the St. Johns
  River.

- Avoid altering the spatial organization of the
  Spanish-American War Battery, composed of
  the large concrete platform that features two
  gun emplacements, an L-shaped retaining
  wall, a tunnel, and a magazine set into the
  military brow of the slope near the top of St.
  Johns Bluff. From the top of the structure,
  expansive views are afforded to the St. Johns
  River suggesting the rationale for its original
  siting.

Vegetation Recommendations

- Complete an inventory of the vegetation
  present on the property, including identifying
  trees and shrubs by location and by genus and
  species, and the size of trees measured by the
diameter of their trunk at breast height and the
size of shrub masses.

- Maintain the battery free of vegetative growth.
  (See Implementation Project 1: vegetation
  management plan and 3: best management
  practices.)

- Engage a certified arborist to evaluate the
  health of the trees and address any pruning or
  removal needs relate to hazards to the public,
park personnel, and the battery. (See
Implementation Project 1: vegetation
management plan.)

- Prepare a vegetation management plan for the
  property that identifies protocols for tree and
  shrub care, invasive plant control, replacement
  of existing plants, and the approach to using
  plants to support the design of new visitor
  access and interpretive improvements. (See
  Implementation Project 1: vegetation
  management plan.)

- Initiate an invasive plant-control program.
  Considering working with a volunteer group
to address recommended invasive plant-
control measures. (See Implementation Projects
1: vegetation management plan and 3: best
management practices.)

- Establish and maintain screen plantings along
  the east and west property boundaries to
  protect the feeling and character of the
  historic property and to protect the privacy of
  adjacent property owners. (See Implementation
  Project 3: best management practices.)

Buildings and Structures
Recommendations

- Complete a Historic Structure Report for the
  Spanish-American War Battery. Assess the
  condition of the battery and develop
treatment recommendations as part of this
project suitable to guide repair and long-term
management and maintenance of the
structure.

  As needed, prepare a stabilization and repair
  plan to address any immediate measures
  recommended as part of the Historic Structure
  Report.

- Prepare a preservation protocol guide for the
  battery that addresses appropriate treatment,
  including both repair and maintenance, of
  concrete and metal materials associated with
  the structure. (See Implementation Project 2:
preservation protocol guide.)
Conduct appropriate care of the battery based on condition issues of concern and using the guidance afforded in the protocol guide. Maintain the battery free of vegetation. Remove all vegetation growing and within cracks and crevices associated with the structure. Address instances of vandalism, including graffiti, as outlined in the preservation protocol guide prepared based on the recommendations included herein. (See Implementation Project 2: preservation protocol guide.)

Address the need to prune or remove trees and other vegetation that poses a threat to the Spanish-American War Battery either through the potential to fall on or dislodge the structure. Follow best management practices in tree care and removal. (See Implementation Projects 1: vegetation management plan; 2: preservation protocol guide; and 3: best management practices.)

**Small-scale Features Recommendations**

- Erect boundary fencing along the property perimeter and mark the property as administered by the National Park Service.

- Install protective barriers at the top of the bluff to protect visitors from accessing or falling down the steep northeastern slope.

- Document the stone planters located on the property near Fort Caroline Road. These features, while not historic, are part of the history of the property and should be documented even if removed to accommodate visitor access.

**Views Recommendations**

- Ensure a clear site line exists between the property near Fort Caroline Road and the battery structure for the benefit of visitors.

- Clear and maintain a view to the St. Johns River from the top of the bluff. (See Implementation Project 1: vegetation management plan.)

- Ensure that views of neighboring properties are screened using a combination of perimeter fencing and vegetation.

**Interpretation Recommendations**

- Assume that the property will accommodate self-guided tours. It is unlikely that park staff will be stationed at the property. However, the park may offer guided tours from the Fort Caroline Visitor Center to supplement self-guided tour opportunities.

- Provide interpretive information for visitors. Consider a range of options for providing the information, including on the park web site, in the Fort Caroline Visitor Center, using QR codes on small signs, through other virtual means, through audio tours, and/or using wayside exhibits and information panels installed at the site.

**Treatment Concept for Providing Visitor Access and Interpretation**

Refer to Figure 100, Concept Plan and Figure 101, Concept Section.

Accommodating visitors to the Spanish-American War Battery can occur in a variety of ways and using a range of approaches with the potential to impact the property in different ways. The concept presented below is based on a range of options provided by the CLR team to the park and regional NPS personnel for consideration. During several conference calls held to review and consider the options, the proposed treatment concept plan emerged as the most suitable solution to meet all of the goals provided to the team by the park. The concept was also presented during a civic engagement meeting held during the development of the 95 percent draft CLR. Comments provided by the public during the civic engagement meeting were generally positive and supportive of the concept.
The treatment concept assumes that the public will be allowed to enter the property during prescribed hours to experience the character of the site and to learn about the history of the Spanish-American War Battery. The property will be fenced and gated to limit access when the park is closed. A one-way road leads into the property from Fort Caroline Road and a small parking area composed of eight parking spaces, two of which will be accessible. The parking area is maintained under a canopy of trees to provide shade for visitors and their cars and to diminish the visual impact of the road pavement.

A paved walk also leads into the property from Fort Caroline Road and connects to a sidewalk located to the north of the parking spaces. The sidewalk, which meets accessibility standards, provides access to an accessible orientation space edged by interpretive panels and benches that also affords views to the battery structure.

From the orientation space, visitors can choose to follow an accessible, elevated boardwalk that winds its way through the existing trees up the slope toward the battery structure. At the base of the structure, the walk turns and follows the southwestern edge of the battery to a platform where views are afforded of the structure and wayside exhibits help to interpret the features. The platform is contained by barrier fencing to prevent visitors from accessing the structure.

Also located at the base of the structure is a second walk that leads to the top of the bluff. Due to the steep nature of the slope, this walk includes several stairs and does not meet accessibility standards. At the top of the bluff, the walkway ends in a platform that serves as an overlook for the battery to the southwest and the expansive view of the St. Johns River to the north, northeast, and northwest. This platform is similarly edged by barrier fencing to protect the structure as well as the safety of visitors and will have integral interpretive panels.

Those visiting the site for self-guided tours will not be permitted to access the battery structure itself. It is possible that the park will provide limited guided tours that may include access to the battery, but that decision will be based on park administration policy.

Boundary fencing will edge the property to the southeast and northwest. Closer to Fort Caroline Road, this fencing will potentially have an open form such as chain link. Where the Spanish-American War Battery property closely edges neighboring properties and dwellings, a privacy style fence will be used. Screen plantings of trees and shrubs will further help to limit views between the battery and neighboring properties.

In addition to the canopy of existing hammock trees, the property will include native grasses to augment or replace the existing turf grass. Native forbs or wildflowers and ornamental bunchgrasses may be included as part of a meadow planting within the open space southwest of the battery. The grasses and forbs, in combination with shrub plantings ranging in height from 18 to 36 inches, are intended to help hide the posts and the elevated nature of the accessible walk. The elevated walk will be designed to limit the impact of the structure on the historic topography of the site and any ground disturbance that might impact archeological resources and natural systems.

The materials proposed for the new features are illustrated as Figure 88 through Figure 98 below.
FIGURE 88. Parking area to be shady and set within a grove of trees. (Source: to be added) [Note to NPS: We are reviewing the images in this section and may replace some of them for the next submittal.]

FIGURE 89. Road and parking surface to be warm colored concrete with exposed aggregate or similarly colored pervious paving. (Source: to be added)

FIGURE 90. Parking wheelstops to convey a park-like but relatively informal character, such as wooden barriers. (Source: to be added)
FIGURE 91. Bike racks will be provided for visitors in addition to parking. (Source: to be added)

FIGURE 92. Property boundary fencing to be dark in color and metal to have little visual impact. (Source: to be added)

FIGURE 93. Dark colored privacy fencing to be used where adjacent residences are visible. A trellis with vines may be considered in addition to fencing and planting to create an effective screen. (Source: to be added)
FIGURE 94. The elevated walk is proposed to be a durable wood such as Ipe or a sustainable wood such as black locust that has a high slip resistance, is naturally rot resistant and does not become hot in the sun. (Source: to be added)

FIGURE 95. The elevated walk and platforms will be edged by barrier fencing composed either of wood or wood and metal cable. (Source: to be added)
FIGURE 96. Dark colored privacy fencing to be used
the walk leading to the top of the knoll will include
wooden stairs and a platform also potentially edged
by wood or wood and cable barrier fencing. (Source:
to be added)

FIGURE 97. Signage will provide for orientation,
wayfinding, and interpretation but will be kept
minimal and unobtrusive. Provisions will be made for
self-guided tours with features such as QR codes.
(Source: to be added)
FIGURE 98. Site furnishings such as benches and trash receptacles will be simple and contemporary in design and character. (Source: to be added)
Treatment Plan

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Protect and maintain all contributing cultural landscape features in good condition, including the Spanish American War Battery, views to the St. Johns River, sloped topography, and the temperate deciduous and evergreen hammock woodland vegetation south of the battery structure.

Protect and maintain the spatial organization of the property composed of the linear space edged by property fencing and shrubs, a central sloped area shaded beneath the canopy of mature trees, the architectural form of the battery set near the brow of the hill, and the apex of the hill that historically afforded sweeping views toward the St. Johns River.

Initiate an annual monitoring program to evaluate the condition of historic features.

Record the results to plan for necessary corrective actions.

Complete an inventory of the vegetation present on the property.

Engage an arborist to evaluate the health of the trees and address pruning or removal needs.

Initiate an invasive plant control program.

Provide interpretive information for visitors. Consider a range of options for providing the information, including on the park web site, in the Fort Caroline Visitor Center, using QR codes on small signs, through other virtual means, through audio tours, and/or using wayside exhibits and information panels installed at the site.

Manage stormwater by allowing it to sheet flow across the slope to the southwest of the battery. Correct any channelling that might be occurring and encourage its infiltration.

Ensure a clear site line exists between the property entrance near Fort Caroline Road and the battery structure.

Document the stone planters located on the property near Fort Caroline Road.

Erect boundary fencing along the property perimeter and mark the property as administered by the National Park Service.

Maintain the battery free of vegetation growth. Remove all vegetation growing within cracks and crevices associated with the structure.

Address the need to prune or remove trees and other vegetation that poses a threat to the Spanish American War Battery or to the battery structure.

Avoid altering the spatial organization of the Spanish American War Battery, composed of the large concrete platform with two gun emplacements, an L-shaped retaining wall, a tunnel, and a magazine set into the military brow of the slope near the top of St. Johns Bluff.

Establish and maintain screen plantings along the east and west property boundaries to protect the feeling and character of the historic property and to protect the privacy of adjacent property owners.

Ensure views of neighboring properties are screened using perimeter fencing and vegetation.

Assess the structural stability of the bluff and evaluate whether it presents a threat to the battery, and also how removal of existing trees to protect the battery or to reestablish the historic viewshed would affect the stability of the bluff.

Clear and maintain a view to the St. Johns River from the top of the bluff.

Install protective barriers at the top of the bluff to protect visitors from accessing or falling down the steep northeastern slope.

Protect and maintain the native vegetation associated with the bluff and the marshland at the northeastern end of the property.

Prepare a National Register of Historic Places nomination for the Spanish American War Battery.


Prepare a preservation protocol guide for the battery that addresses appropriate treatment, including both repair and maintenance, of concrete, masonry, and metal materials associated with the structure. Conduct appropriate care of the battery based on condition issues of concern and using the guidance afforded in the protocol guide.

Address instances of vandalism, including graffiti, as outlined in the preservation protocol guide prepared based on the recommendations included herein.

Complete an archaeological overview and assessment of the property to determine the presence of any belowground resources and information potential associated with the property.

Prepare a vegetation management plan that identifies protocols for plant care, invasives plant control, replacement of existing plants, and the approach to using plants to support the design of new visitor access and interpretive improvements.
FIGURE 100. Concept Plan.
FIGURE 101. Concept Section.
Treatment Plan
Implementation Projects

This section provides guidance for the implementation of specific treatment recommendations indicated above. The section outlines a series of projects designed to guide implementation of recommendations relating to resource protection, care, and rehabilitation, as well as life safety, visitor accessibility and interpretation.

The projects are presented in a consistent format of seven sections: 1) description; 2) location; 3) considerations; 4) additional studies recommended; 5) related implementation projects; 6) project implementation process; and 7) estimates of probable cost. The information presented is consistent with the National Park Service Project Management Information System (PMIS) and Facility Management Software System (FMSS) data recordation forms.

The three implementation projects conveyed over the pages that follow include:

1. Prepare a vegetation management plan for the property.

2. Prepare a preservation protocol guide for the concrete and metal components of the battery.

Prepare a vegetation management plan for the property that

- establishes vegetation inventory guidelines
- establishes management zones for the various types of vegetation cover at the site
- identifies protocols for the various management zones
- provides guidance on establishing native grasses along the ground plane southwest of the battery
- provides protocols to manage invasive and aggressive plants, particularly species that have the potential to impact the battery structure
- provides protocols for the removal and replacement of hazard trees
- identifies appropriate species and strategies for the establishment of a screen planting to serve as a buffer along the property boundary between the site and its residential neighbors
- proposes a clearing strategy to open up the viewshed from the bluff to the St. Johns River
- provides operational guidelines for grounds maintenance to supplement the management protocols

A vegetation management plan is currently needed to identify short- and long-term vegetation management goals and appropriate maintenance procedures for vegetation at the Spanish-American War Battery at Timucuan Ecological and Historic Preserve. Specific goals for vegetation management include perpetuation of the hammock woodland, clearing woody plant material from the viewshed toward the St. Johns River from the top of the bluff on the property, managing plant communities for ecological health on the bluff hillside, and control of invasive plant species. Such a plan would specifically address:

- The need for baseline inventory data
- Strategies for maintaining specific conditions such as native woodland communities, screen plantings, native grassland and meadow plantings, and bluff and marsh vegetation
- Methods for enhancing the integrity of the key viewshed toward the river by clearing non-historic woody vegetation
- Invasive species control

Location

The vegetation management plan would pertain to plants and plant communities located on the Spanish-American War Battery property.

Considerations

A vegetation management plan would serve a crucial role in implementing the recommendations included in this CLR. Such a plan would address the inherent needs of the species present in the most sustainable manner, while also establishing processes and methods for maintenance and care that support historic landscape preservation and interpretation. See also Implementation Project 3 that includes best management practices related to several of these topics.

Vegetation inventory. As a first step in developing a vegetation management plan, the park would inventory, document, and evaluate existing vegetation communities. Inventory protocols developed for the project would include species identification in terms of location, genus and species, an approximation of age, the size by diameter at breast height (dbh) for trees, and condition issues of concern. If in-house expertise is not available, a certified arborist would be engaged to assist in this process. The presence and location of invasive species would also be recorded as part of the inventory.
Establishment of management zones. Based on the findings of the vegetation inventory, the park may decide to establish management zones for the property documented in the vegetation management plan. Each management zone encompasses a specific vegetation type that may require specific management protocols and maintenance schedules. For each zone, the vegetation management plan would identify associated maintenance tasks and protocols, and the timing or frequency of each action. Potential zones may include a tree management zone, a groundcover management zone, a bluff management zone, and a viewshed management zone.

Suggested management zone protocols

Tree management

The CLR recommends maintaining open views from the visitor parking and orientation area to the Spanish-American War Battery. To establish this viewshed, it may be necessary to remove the lower limbs of some trees located within the central portion of the space between the battery and the orientation area, and to avoid replacing any trees removed from within this zone that are identified as hazardous.

Additionally, the CLR recommends maintaining a thickened screen of canopy and sub-canopy trees along the northwestern and southeastern property boundaries to maintain privacy for adjacent landowners, suggesting that any replacement trees be added here, along with shrubs intended to support screening needs. The vegetation management plan would address appropriate techniques for conducting tree pruning and limbing, removal of hazard trees, and replanting, along with a schedule for regular evaluation of tree health and monitoring for hazardous conditions. The vegetation management plan would also provide a list of appropriate native tree and shrub species to be used in replanting and new plantings.

Groundcover management

The CLR recommends maintaining the ground plane in native grasses and forbs, or meadow, within the sloped expanse southwest of the battery. Augmenting, or removing and replacing the existing turf grass with native grasses and forbs would enhance biodiversity, reduce soil erosion and sedimentation, improve water quality, and enhance the appearance of the space. The vegetation management plan would identify an appropriate approach for removing the existing turf grass and establishing native grasses and forbs, including site preparation designed to control or reduce competition from other vegetation present, particularly invasive species. The vegetation management plan would identify the appropriate equipment to be used on site, as well as a schedule for maintenance procedures and monitoring activities. A list of appropriate native grass and forb species would be provided in the vegetation management plan.

Bluff and viewshed management

The CLR recommends clearing woody vegetation that obscures the view toward the St. Johns River from the top of the bluff and maintaining the viewshed over time. The vegetation management plan would address procedures for removing woody vegetation within the viewshed, and either establishing lower growing species, or procedures for regularly removing woody growth as needed to protect the view. The vegetation management plan would identify the appropriate equipment to be used on site, as well as a schedule for maintenance procedures and monitoring activities. In addition, the vegetation management plan would address structural stabilization of the bluff through the identification of shrub and fibrous rooted grass species that could be planted to control erosion.

Invasive management. The CLR recommends controlling invasive plant species. The vegetation management plan would provide guidance for the process of control. While eradication of invasives is a desirable goal, this can be difficult to accomplish given the constant influx of germ material through transport by wind, water, and animal dispersal. The vegetation management plan would also provide monitoring protocols to guide follow-up management and maintenance. Monitoring is an essential part of the process since once initial efforts of removal are undertaken,
early detection and treatment will be far easier to address than well-established plants or extensive infestations.

Methods for invasive plant management may include mechanical, chemical, and/or biological treatments that comply with National Park Service practices.

In addition to treatment of existing stands, invasive management also entails the establishment of an appropriate native plant cover to help prevent the invasive from becoming reestablished. The species selected for new native plant cover would be able to outcompete invasives while helping to stabilize and protect the soil from erosion. Appropriate control measures, follow-up monitoring, early detection and treatment, and the establishment of native plant cover following invasive control are all critical components of successful invasive management.

Over time, it may be necessary to remove trees located on the property should they pose a threat to visitors and/or the concrete battery structure. Trees are also proposed for removal where they block the key viewshed from the top of the bluff.

The vegetation management plan, in combination with guidance from a certified arborist, would identify protocols to determine when a tree poses a risk of falling or dropping limbs due to damage, age, and/or its morphology. In addition, the plan would identify an approach for conducting tree removal that includes appropriate equipment, procedures such as sectioning and lowering limbs and trunks to the ground rather than dropping them, and how to address the stumps (such as promoting decay, grinding, or extracting).

Tree planting or replacement would also be addressed in the vegetation management plan.

Tree planting may be proposed for screening purposes, to shade the parking area, or to replace hazard trees removed to perpetuate the canopy of the live oak hammock community. Generally, it is desirable to plant younger trees where possible since they can become adapted to a site more quickly than more mature trees. The vegetation management plan would provide guidance on best practices for planting trees as well as treating them during the establishment period that typically lasts a year following planting. Suggested tree and shrub species may also be included in the vegetation management plan.

**Viewshed management and clearing strategy.** Currently, views from the bluff east of the battery to the St. Johns River are obscured by woody growth that is not consistent with historic conditions during the period of significance. The CLR recommends clearing the overgrowth atop the bluff and maintaining the area in lower growing species that provide for open site lines toward the river. The vegetation management plan would consider the appropriate extent of clearing and pruning as well as a strategy for plant removal that considers the existing limited access to the bluff. It would also balance the need for vegetation to maintain the structural stability of the elevated bluff. The plan would also include a proposed schedule for occasional and regular routine maintenance.

**Screen planting.** Due to proximity of the Spanish-American War Battery to adjacent residential properties, the CLR recommends screening along the property boundary. The CLR recommends the use of privacy fencing where the property closely abuts residences to either side, as well as shrub plantings and/or vine plantings trained on trellis structures appropriately sited along the southeastern and northwestern property lines.
The vegetation management plan would provide strategies for screen plantings as well as a list of appropriate plants to provide variation in terms of texture, height, and color and avoid the establishment of a monoculture. Utilizing a varied canopy height that includes shrubs, understory trees and canopy trees, both deciduous and evergreen, would provide a natural screen and support biodiversity. Due to the limited area for planting along the northwest side of the battery and the need for higher screening, this area might be appropriate for the use of trellises or climbing structures for vines.

**Operational guidelines.** Maintaining vegetation at the Spanish-American War Battery is anticipated to require ongoing maintenance on the part of park staff. Establishing operational guidelines for park personnel would be useful to include in the vegetation management plan. Operational guidelines would provide a clear outline of tasks for park maintenance staff based on articulated objectives and benchmarks for meeting the objectives. The vegetation management plan would identify the specific maintenance equipment that will be required to manage the property as well as equipment maintenance procedures. It would also provide a schedule with annual, seasonal, monthly, and weekly tasks aimed at meeting the objectives for the property. The operational guidelines would also identify procedures for record keeping anticipated to support long-term management of the property.

**Additional Studies Recommended**

- Soil testing
- Documenting, using Global Positioning System (GPS) equipment, the locations of existing vegetation species and communities, including invasive species

**Related Implementation Projects**

- Implementation Project 2. Prepare a preservation protocol guide for the concrete and metal components of the battery.

**Project Implementation Process**

- Develop the vegetation management plan following the steps indicated below:
  - Inventory, document, and evaluate existing species and vegetation communities found at the Spanish-American War Battery site. Engage an arborist as needed.
  - Establish management zones related to the different plant communities with appropriate maintenance protocols that identify the vegetation maintenance strategies, routines and schedules that are necessary to maintain the natural and cultural resources of the Spanish-American War Battery site.
  - Establish a strategy for the removal invasive plant species, particularly species that threaten the resources of the Spanish-American War Battery.
  - Remove non-historic trees and branches to provide clear site lines to the battery from the arrival area and toward the marsh from the bluff east of the battery.
  - Plant vegetation to establish appropriate screening between the Spanish-American War Battery and adjacent residential property.
  - Establish a strategy to maintain open views from the bluff to the marsh.
  - Follow operational guidelines for vegetation management at the site that is identified in the vegetation management plan in coordination with existing park maintenance staff.
Prepare a preservation protocol guide for the concrete and metal components of the battery

- establishes guidelines for assessment, preservation, repair, and maintenance of the battery
- identifies best management practices for preservation of the battery and its materials

Description

A preservation protocol guide is currently needed to identify short- and long-term management goals and appropriate preservation, repair, and maintenance procedures for the battery. Specific goals for preservation include removing vegetation and organic growth, repairing materials, and providing for future maintenance. Such a guide would be developed in concert with planning for and preparation of a Historic Structure Report, which would provide baseline inventory data about the battery as well as specific treatment recommendations. The preservation protocol guide would specifically address:

- Strategies for assessment, maintenance, and repair of the history battery

Location

The preservation protocol guide would pertain to the Spanish-American War Battery.

Considerations

The Spanish-American War Battery exhibits deterioration including cracking and spalling of the concrete walls, cracking and spalling of the cementitious parging coat covering the concrete; corrosion of iron and steel elements; and deterioration of the paving. In addition, the battery is affected by vegetation growing adjacent the structure, as well as organic growth on the concrete surfaces.

A preservation protocol guide would serve a guide to development and implementation of the treatment recommendations to be prepared as part of a future Historic Structure Report for the battery. The guide would address key short-term and long-term preservation, repair, and maintenance needs of the battery in accordance with preservation precepts and technical best practices for care of the historic structure.

Additional Studies Recommended

- Prepare a Historic Structure Report, including detailed documentation and assessment of the battery and development of specific treatment recommendations. As part of the Historic Structure Report, conduct materials analysis to characterize and document historic materials and past repairs.

Related Implementation Projects

- Implementation Project 1. Prepare a vegetation management plan for the property.

Project Implementation Process

- Develop the preservation protocol guide, in coordination with preparation of a Historic Structure Report, to establish guidelines for assessment, preservation and repair and maintenance of the battery.
- Develop guidance for all work on the structure in compliance with the Secretary of the Interior’s Standards for Preservation.
- Identify best management practices for preservation, repair, and maintenance of the battery and its materials. Establish protocols for care of the structure, as well as for reporting any problems and documenting existing conditions. Take into consideration information available based on the experience...
of others conducting similar efforts, including guidance afforded by NPS publications.


- National Park Service National Center for Preservation Technology and Training (NCPTT), www.ncptt.nps.gov.

- Coordinate protocols with guidance developed for the cultural landscape, for example, management of vegetation affecting the battery and measures to address safety of visitors and protection of the historic resource.

- Establish guidelines for preservation, repair, and maintenance, including the following:

  - Preserve the historic fabric and character of the battery, including all repairs necessary to stabilize and preserve the battery for continued interpretation by the park.

  - Incorporate sustainable design principles that respect preservation goals in all projects.

  - Assess all proposed work for its potential to affect archeological resources, and conduct archeological investigations as necessary.

  - Prioritize treatments to the battery to address stabilization and more significant distress issues first, following by minor repairs.

  - Develop preservation protocols to address cleaning of the concrete; repair of cracks and spalls in the concrete; repair of corroded iron and steel elements; repair of the deteriorated cementitious parge coating; and repair of deteriorated of paving materials. Identify conditions that do not require repair (e.g., hairline cracks in the concrete).

- Conduct trial repairs and mock-ups prior to implementation of repairs to historic materials.

- Ensure that repairs to historic features are performed only by those with proven experience in the preservation of historic materials.

- Identify recommended maintenance tasks such as inspection, monitoring of cracks, cleaning of concrete, and coating of exposed steel, as well as vegetation management tasks (see Implementation Project 2: Prepare a vegetation management plan for the property). Determine appropriate maintenance cycles to reduce the need for large-scale repair projects in the future.

- Document all work performed on the battery through notes, photographs, and measured drawings and/or sketches, or with as-built annotations to construction documents at project completion. Retain documentation in park archives as part of the permanent record of the battery, and to provide information for future repairs and ongoing maintenance.
**Landscape maintenance and management**
techniques can serve to enhance environmental quality or contribute to its degradation. Practices aimed at enhancing and protecting the environment can be consistent with the management of historic landscapes. Green and sustainable practices should be applied in specific ways and locations within the Spanish-American War Battery property to support environmental quality without diminishing the integrity of the historic landscape.

The CLR treatment plan recommends that the park adopt Best Management Practices (BMPs) to guide many of the actions and long-term management protocols for resources associated with the Spanish-American War Battery property, particularly those involving environmental features such as wetlands, soils, and vegetation. It is recommended herein that the park develop BMP information relating to five topics that relate to the treatment plan recommendations, including:

- removal of vegetation potentially impacting the battery structure (see also Implementation Project 2 regarding preservation protocols for the battery)
- stormwater management
- tree removal
- new landcover establishment
- invasive plant control

**Description**

Landscape maintenance and management techniques can serve to enhance environmental quality or contribute to its degradation. Practices aimed at enhancing and protecting the environment can be consistent with the management of historic landscapes. Green and sustainable practices should be applied in specific ways and locations within the Spanish-American War Battery property to support environmental quality without diminishing the integrity of the historic landscape.

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- removal of vegetation potentially impacting the battery structure (see also Implementation Project 2 regarding preservation protocols for the battery)
- stormwater management
- tree removal
- new landcover establishment
- invasive plant control

**Location**

The BMPs would pertain to wetlands, soils, and vegetation located on the Spanish-American War Battery reservation.

**Stormwater Management BMPs.** One of the critical factors affecting environmental quality is the way in which stormwater is handled. Within park boundaries, the National Park Service has the ability to apply engineering and landscape architectural solutions to managing stormwater runoff quantity and quality and to enhance water quality through various means.

Stormwater management BMPs are measures used to minimize on-site and off-site hydrologic and water quality impacts due to runoff by attempting to work with natural hydrologic processes, incorporate them into the built environment, and continually consider ways to promote infiltration of stormwater into the ground to avoid contributing to closed systems. These measures can be designed and implemented in new developments as well as retrofitted into existing development in cost-efficient ways. Stormwater BMPs have the capability of significantly improving the quality of stormwater runoff.

As a good steward of the land, the National Park Service can serve as a model for nearby landowners, broadening local understanding of sustainable land management practices and potentially contributing to additional benefits. Land uses that contribute to the degradation of water resources include paved roads, walks, and parking areas as well as ditches, lawns, buildings, and agricultural land. The park has the option of adopting a range of BMPs that will serve to enhance water quality without affecting the integrity of the historic landscape, including:

**Green parking area design.** Several features can be used in conjunction with parking area design to promote sustainable stormwater management and other green principles. Porous pavements can enhance stormwater infiltration, as can filter strips and naturalized detention structures such as rain gardens. Planting trees around paved areas helps to reduce the heat island effect caused by solar absorption and reflection. A rain garden, or planted bioretention area, integrated into the parking lot which is located downhill from the sloping topography of the
site would help to both capture and cleanse stormwater before it infiltrates into the ground.

**Naturalized detention.** Planting a gently sloping area with native grasses and forbs can help to slow, collect, and capture rainwater that would otherwise quickly sheet flow off site into the roadway. This sort of naturalized detention allows stormwater to infiltrate into the ground rather than flow directly into streams, ponds, and drainageways. This approach could be used within the open expanse southwest of the battery structure, coupled with the existing trees that also serve to capture water and recharge underground groundwater resources.

**Porous pavement.** Porous, pervious, or permeable pavement is composed of a permeable or perforated surfacing material, or pavers set with spaces between them, that allow transmission of water to an aggregate or subsoil base beneath. Runoff is temporarily stored in the base for infiltration into subsoils or for slow release into a storm drain system or catchment. Pervious pavements can also filter some pollutants from stormwater. Porous pavements could be used for the new parking facilities associated with the property.

**Rain gardens.** Rain gardens are landscaped areas designed to retain and detain stormwater runoff from paved surfaces, roofs, and planted surfaces that may be subject to erosion. Rain gardens are ornamental features that serve a sustainable function by helping infiltrate stormwater into the ground. By minimizing the amount of stormwater going into local storm drains, streams, and rivers, rain gardens help to reduce the potential for local flooding, as well as bank and shoreline erosion. Rain gardens are not recommended for use in association with historic features, but they could be used in conjunction with the proposed parking area and/or visitor orientation space.

**Vegetated swales and filter strips.** Vegetated swales and filter strips are planted stormwater management features that convey, retain, infiltrate, and cleanse overland flow. Vegetated swales serve to remove sediment, nutrients, and other contaminants, increase infiltration, and enhance aesthetics. Vegetated swales could be used wherever swales surfaced with grass already exist by altering the composition of the plant material. Vegetated swales could be used instead of rain gardens along the margins of the proposed paved road and walk features.

**Use of native plants for landscaping.** Native landscaping, as a BMP, recognizes the importance of vegetation in biodiversity, aesthetics, habitat, cooling of ambient air, and storm water management. Native landscapes benefit stormwater management through the infiltration and cleansing of run-off. Consideration should be paid to only using native species when adding new plantings on site either in association with the parking area, screen plantings, and treatment of the ground plane south of the battery.

**Tree Removal BMPs**

- Manage tree removal operations to protect environmental resources.
- Avoid clearing woodland in areas with slopes that are steeper than 15 percent, and on soils that are classified as highly erodible, although removal of invasive species should be undertaken as possible.
- Avoid vegetation clearing or thinning in sensitive ecological areas and plant communities. Wetlands should be delineated before field clearing begins.
- When engaging a tree removal service to conduct the clearing ensure that the company can demonstrate successful experience working at historically significant sites. Regularly inspect tree removal operations conducted by a service to monitor compliance with the terms of the contract and applicable
laws. A National Park Service archeologist should participate in these inspections.

- Minimize the use of heavy vehicles and equipment, use low tire-pressure vehicles, protect the ground from compaction using plywood or other protective material, and avoid accessing the site when the soil is wet to reduce the potential for ruts and compaction. Employ measures to stabilize soil and minimize erosion.

- Employ silvicultural methods that minimize the impacts and threats to cultural and natural resources and known and potential archeological resources.

- Remove felled trees without dragging, which gouges the ground surface.

- Ensure that the tree removal process is monitored by a historical landscape architect and archeologist. An archeologist should be present during any clearing operation.

- Cut stumps to the ground; do not uproot or grind them.

- Consider treating stumps and sprouts with a systemic herbicide, such as glyphosate, to discourage and control woody regeneration. Chemical control of woody plant regeneration should be conducted by a certified herbicide applicator—either qualified park staff, or a landscape contractor.

New Landcover BMPs

- All disturbed soils should be re-vegetated in a manner that optimizes plant establishment for the specific site, unless ongoing disturbance at the site will prevent establishment of invasive species.

- Only local seed and appropriate mixes of native species for the environmental conditions of the site should be used in establishing new landcover, such as meadow south of the battery.

- Soil disturbance should always be minimized when planting new cover.

- All revegetation efforts should be regularly monitored and evaluated to determine the need for additional intervention in terms of seeding, planting, fertilization, and/or mulching.

- When re-vegetating areas that were previously dominated by invasive plants, try to achieve at least 90 percent control of the invasive before attempting restoration.

- The CLR recommends clearing non-historic woodland from the viewshed afforded atop the bluff to the north of the battery structure and maintaining the area in lower growing species, or regularly cutting woody growth that impacts the view. The vegetation management plan would identify an appropriate approach for conducting clearing efforts, and any recommended thinning and vista establishment.

Invasive Plant Control BMPs

- Before starting any ground-disturbing activities, inventory invasive plant infestations both on-site and in the adjacent area.

- Begin activities in uninfested areas before operating in infested areas.

- Use uninfested areas for staging, parking, and cleaning equipment. Avoid or minimize all types of travel through infested areas or restrict to those periods when spread of seed or propagules are least likely.

- When possible, to suppress growth of invasive plants and prevent their establishment, retain relatively closed canopies.

- Minimize soil disturbance and retain desirable vegetation in and around the area to the maximum extent possible.

- Plant desirable species after removing invasives.
Monitor infested areas for at least three growing seasons following completion of activities. Provide for follow-up treatments based on inspection results.

Quarantine soil from infested areas to prevent off-site spread.

Invasive plants can be introduced and spread by moving infested equipment, sand, gravel, borrow, fill, and other off-site material. Inspect material sources at site of origin to ensure that they are free of invasive plant material before use and transport.


Additional Studies Recommended

By law, any landscape management activity that moves, breaks, or disturbs soil is subject to review under Federal Section 106 and National Environmental Policy Act (NEPA) compliance.

Consider applying green building principles to any new construction projects.

Before conducting any ground-disturbing activities, undertake appropriate investigations relating to cultural and archeological resources.

Examine current site conditions to determine appropriate plant species selections and planting seasons for features such as filter strips, naturalized detention areas, rain gardens, and vegetated swales by evaluating the following elements:

- soil type
- slope
- stability of the soil organic layer

- nearby vegetation types and communities
- hydrology
- land use history

Related Implementation Projects

- Implementation Project 1. Prepare a vegetation management plan for the property.
- Implementation Project 2. Prepare a preservation protocol guide for the concrete and metal components of the battery.

Project Implementation Process

1. Develop BMPs for the topics indicated herein as they relate to proposed treatment recommendations and implementation projects.

2. For stormwater management, consider implementing the various BMPs discussed herein:

- Green parking area design
- Naturalized detention
- Porous pavement
- Rain gardens
- Vegetated swales and filter strips
- Use of native plants for landscaping

3. Prepare the site for stormwater management BMP features by protecting sensitive natural and cultural resources.

4. Engage an archeologist to monitor BMP installation.

5. Implement vegetation-related BMPs, removing existing vegetation, grading, and adding new plantings, or constructed features to include permeable pavements. Follow proper installation methods, including erosion control, and mulching and watering techniques to ensure survival of vegetation and protection of the environment.
6. Monitor post-installation site conditions. Evaluate plant health and monitor for the presence of invasive plants. Replace failed vegetation immediately and remove any invasive species observed.
Estimate of Probable Costs

Following is an estimate of probable costs for planning studies and preservation maintenance efforts, and for implementation of the proposed concept plan described above.

Note: Costs are based on average costs for products and materials installed, not taking into consideration current elevated construction costs based on Covid 19 pandemic conditions. Local conditions may result in the cost of certain products to deviate as a result of unforeseen factors. Some costs may be lower where work can be conducted in house by NPS personnel. Costs are prepared for planning purposes and should be escalated by a factor of between 3 and 6 percent per year.

Planning Studies and Preservation Maintenance Efforts

<table>
<thead>
<tr>
<th>Project</th>
<th>Basis of costs</th>
<th>Anticipated costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Engage an arborist to document and evaluate trees on the property</td>
<td>Assume two days on site; report with recommendations, annotated map, and photographs</td>
</tr>
<tr>
<td>2</td>
<td>Prepare a Vegetation Management Plan</td>
<td>Assume preparation of a report that specifies a process and identifies species for establishing screen plantings, meadow establishment, view clearing, and maintaining site vegetation, including invasives control</td>
</tr>
<tr>
<td>3</td>
<td>Prepare a Historic Structure Report</td>
<td>Assume preparation of a report to guide repair and maintenance of the battery structure</td>
</tr>
<tr>
<td>4</td>
<td>Undertake an archeological survey</td>
<td>Assume report that summarizes known and potential archeological resources based on research, documentation, non-invasive investigation, and potential Phase I and Phase II investigations</td>
</tr>
<tr>
<td><strong>Total of Additional Studies</strong></td>
<td></td>
<td><strong>$150,000</strong></td>
</tr>
</tbody>
</table>

Implementation of Proposed Concept Plan – Preliminary Cost Estimate for Planning Purposes Only

<table>
<thead>
<tr>
<th>Project</th>
<th>Quantity</th>
<th>Unit Measure</th>
<th>Unit Price</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Site Clearing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Remove hazard trees and those in road/parking lots/pedestrian paving areas</td>
<td>8</td>
<td>EA</td>
<td>$2,000</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$16,000</strong></td>
</tr>
<tr>
<td>Project</td>
<td>Quantity</td>
<td>Unit Measure</td>
<td>Unit Price</td>
<td>Cost</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------</td>
<td>--------------</td>
<td>------------</td>
<td>--------</td>
</tr>
<tr>
<td><strong>2 Site Demolition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demolish (salvage?) existing fence</td>
<td>100</td>
<td>LF</td>
<td>$50</td>
<td>$5,000</td>
</tr>
<tr>
<td>Demolish (salvage?) existing gate</td>
<td>1</td>
<td>EA</td>
<td>$500</td>
<td>$500</td>
</tr>
<tr>
<td>Relocate and store stone planters</td>
<td>2</td>
<td>EA</td>
<td>$250</td>
<td>$500</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>$6,000</td>
</tr>
<tr>
<td><strong>3 Site Earthwork</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade proposed road/parking lots/pedestrian paving areas</td>
<td>2000</td>
<td>CF</td>
<td>$4</td>
<td>$8,000</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>$8,000</td>
</tr>
<tr>
<td><strong>4 Site Preparation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Erosion controls</td>
<td>1</td>
<td>LS</td>
<td>$5,000</td>
<td>$5,000</td>
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<tr>
<td>Site clearing at improved areas</td>
<td>20000</td>
<td>SF</td>
<td>$0.21</td>
<td>$4,200</td>
</tr>
<tr>
<td>Tree protecting fencing</td>
<td>500</td>
<td>LF</td>
<td>$2</td>
<td>$1,000</td>
</tr>
<tr>
<td>Site preparation for meadow grass establishment</td>
<td>37500</td>
<td>SF</td>
<td>$0.21</td>
<td>$7,875</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>$18,075</td>
</tr>
<tr>
<td><strong>5 Roadways</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Install compacted gravel at a depth of 6 inches</td>
<td>2400</td>
<td>SF</td>
<td>$4</td>
<td>$9,600</td>
</tr>
<tr>
<td>Install concrete paving with welded wire reinforcing</td>
<td>2400</td>
<td>SF</td>
<td>$15</td>
<td>$36,000</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>$45,600</td>
</tr>
<tr>
<td><strong>6 Parking Lots</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Install compacted gravel at a depth of 6 inches</td>
<td>2240</td>
<td>SF</td>
<td>$4</td>
<td>$8,960</td>
</tr>
<tr>
<td>Install concrete paving with welded wire reinforcing</td>
<td>2240</td>
<td>SF</td>
<td>$20</td>
<td>$44,800</td>
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<tr>
<td><strong>Subtotal</strong></td>
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<td></td>
<td></td>
<td>$53,760</td>
</tr>
<tr>
<td><strong>7 Pedestrian Paving</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Install compacted gravel at a depth of 6 inches</td>
<td>2580</td>
<td>SF</td>
<td>$4</td>
<td>$10,320</td>
</tr>
<tr>
<td>Install concrete paving for sidewalks with welded wire reinforcing</td>
<td>1500</td>
<td>SF</td>
<td>$15</td>
<td>$22,500</td>
</tr>
<tr>
<td>Project</td>
<td>Quantity</td>
<td>Unit Measure</td>
<td>Unit Price</td>
<td>Cost</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>----------</td>
<td>--------------</td>
<td>------------</td>
<td>---------</td>
</tr>
<tr>
<td>Install concrete paving for orientation space with welded wire reinforcing</td>
<td>1080</td>
<td>SF</td>
<td>$15</td>
<td>$16,200</td>
</tr>
<tr>
<td>Install concrete paving for bus drop off area with welded wire reinforcing</td>
<td>650</td>
<td>SF</td>
<td>$15</td>
<td>$9,750</td>
</tr>
<tr>
<td>Install sealed expansion joint where road meets sidewalks, orientation space, bus drop off</td>
<td>165</td>
<td>LF</td>
<td>$12</td>
<td>$1,980</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>$60,750</td>
</tr>
</tbody>
</table>

| **8 Site Development**                                                 |          |              |            |         |
| Elevated wood boardwalk on framing                                     | 3725     | SF           | $30        | $111,750|
| Overlook Platform 1                                                     | 240      | SF           | $30        | $7,200  |
| Overlook Platform 2                                                     | 240      | SF           | $30        | $7,200  |
| Elevated walk with stairs                                              | 660      | SF           | $35        | $23,100 |
| Railings for elevated boardwalk                                         | 850      | LF           | $200       | $170,000|
| Railings at steps                                                       | 220      | LF           | $200       | $44,000 |
| Railings at Overlook Platforms                                          | 124      | LF           | $200       | $24,800 |
| New boundary fencing                                                    | 800      | LF           | $45        | $36,000 |
| New privacy fencing                                                     | 200      | LF           | $55        | $11,000 |
| Gates-automatic exit                                                    | 2        | EA           | $7,000     | $14,000 |
| **Subtotal**                                                            |          |              |            | $449,050|

| **9 Landscaping**                                                       |          |              |            |         |
| Top soil                                                                | 2075     | CY           | $30        | $62,250 |
| Meadow seeding                                                          | 37500    | SF           | 1          | $37,500 |
| Trees                                                                   | 5        | EA           | $1,000     | $5,000  |
| Shrubs                                                                  | 20       | EA           | $400       | $8,000  |
| **Subtotal**                                                            |          |              |            | $112,750|

<p>| <strong>10 Site Furnishings</strong>                                                 |          |              |            |         |
| Identity signs                                                          | 2        | EA           | $5,000     | $10,000 |
| Benches                                                                 | 5        | EA           | $1,500     | $7,500  |
| Trash receptacles                                                       | 2        | EA           | $2,500     | $5,000  |
| ADA signage at parking area                                             | 2        | EA           | $500       | $1,000  |
| Upright informational panels at orientation space                       | 4        | EA           | $5,000     | $20,000 |</p>
<table>
<thead>
<tr>
<th>Project</th>
<th>Quantity</th>
<th>Unit Measure</th>
<th>Unit Price</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wayside exhibits along elevated walk and at overlook platforms</td>
<td>4</td>
<td>EA</td>
<td>$3,500</td>
<td>$14,000</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
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<td><strong>$57,500</strong></td>
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<tr>
<td><strong>Estimated Base Construction Cost</strong></td>
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<td><strong>$827,485</strong></td>
</tr>
<tr>
<td>Design and Development Fees (10%)</td>
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<td></td>
<td></td>
<td>$82,748</td>
</tr>
<tr>
<td>Profit and Overhead (10%)</td>
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<td></td>
<td></td>
<td>$82,748</td>
</tr>
<tr>
<td>Project Management Fees (10%)</td>
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<td></td>
<td></td>
<td>$82,748</td>
</tr>
<tr>
<td><strong>Total Construction Cost</strong></td>
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<td></td>
<td></td>
<td><strong>$1,075,730</strong></td>
</tr>
<tr>
<td>Construction Contingency (20%)</td>
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<td></td>
<td>$215,146</td>
</tr>
<tr>
<td><strong>Total Estimated Construction Cost</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$1,290,876</strong></td>
</tr>
</tbody>
</table>
Acosta, Ruben, Supervisor, Survey and Registration, Division of Historical Resources, Florida Department of State. Letter to Morgan Baird, Timucuan Ecological & Historic Preserve, re: Spanish American War Battery (DU00124), March 4, 2019.


DeVivo et al., 2008.


Goggin, John M. *Space and Time Perspective in Northern St. John’s Archaeology*. New Haven: Yale University Publications in Anthropology No. 47. (1972)


Bibliography


______. US Military Reservation St. Johns Bluff, Florida, US Engineer Office, St. Augustine, Fla., February 25, 1904, to accompany letter of this date to the Chief of Engineers. Chief of Engineers Series (NARA RG 77), Fortifications Map File, Drawer 191, Sheet 4-4.

Solomon et al., 2007


Sperry, Charles, to McKinstry, RG 77 Entry 1170, ox 1, folder September 1899, Atlanta Federal Archives and Record Center, East Point, Georgia. [Note: NPS, we would appreciate receiving a copy of the building sketch entitled “Relative Positions of Buildings at St. Johns Bluff, Fla.” by Sperry, if available.]


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