



Proposed Rehabilitation of the Breakwater at Fort Sumter National Monument

Environmental Assessment

April 2019

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US DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE FORT SUMTER NATIONAL MONUMENT

Proposed Rehabilitation of the Breakwater at Fort Sumter National Monument Environmental Assessment

The National Park Service (NPS) has prepared this environmental assessment (EA) to evaluate the impacts of rehabilitating the existing breakwater and developing a living shoreline surrounding Fort Sumter National Monument (NM).

This EA evaluates two alternatives for the rehabilitation of the breakwater at Fort Sumter NM located in the Charleston Harbor, South Carolina; describes the environment that would be impacted by the alternatives; and assesses the environmental consequences of implementing the alternatives. Under the no-action alternative, the current breakwater surrounding the fort would not be changed. Under the proposed action, which has been identified as the preferred alternative, existing stone riprap positioned along the exterior foundation walls of Fort Sumter would be moved approximately 60 feet out into the water to create a breakwater. In addition, a living shoreline would be created between the breakwater and the fort walls. Upon conclusion of the decision-making process, one of the alternatives would become the long-term management option for the breakwater at Fort Sumter NM.

This EA has been prepared in compliance with the National Environmental Policy Act to provide the decision-making framework that (1) analyzes a reasonable range of alternatives to meet objectives of the proposal, (2) evaluates potential issues and impacts on the national monument's resources and values, and (3) identifies mitigation measures to lessen the degree or extent of these impacts.

How to Comment

We invite you to comment on this EA during the 30-day public review period. The preferred method of providing comments is through the NPS's Planning, Environment, and Public Comment (PEPC) website for the national monument at: <http://parkplanning.nps.gov/fosubreakwater>. You may also submit written comments to:

Superintendent
Fort Sumter National Monument
1214 Middle Street
Sullivan's Island, SC 29482

Only written comments will be accepted. Please submit your comments within 30 days of the posting of the notice of availability on the PEPC website. Your entire comment will become part of the public record so if you wish to remain anonymous, please clearly state this request within your correspondence; however, NPS cannot guarantee that personal information, such as email address, phone number, etc., will be withheld.

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Acronyms and Abbreviations

BMPs	Best Management Practices
CFR	Code of Federal Regulations
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
EA	Environmental Assessment
EFH	Essential Fish Habitat
ESA	Endangered Species Act
NEPA	National Environmental Policy Act
NM	National Monument
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
PEPC	Planning, Environment, and Public Comment
SCDHEC-OCRM	South Carolina Department of Health and Environmental Control, Division of Ocean and Coastal Management
SC DNR	South Carolina Department of Natural Resources
USACE	US Army Corps of Engineers
USFWS	US Fish and Wildlife Service

CHAPTER 1: PURPOSE OF AND NEED FOR ACTION

The National Park Service (NPS) is proposing to rehabilitate the breakwater at Fort Sumter National Monument (NM) located in the Charleston Harbor, South Carolina (figure 1). Currently, riprap surrounds approximately three-quarters of the exterior fort walls. The current breakwater stone riprap is located directly against the fort foundation walls.

This environmental assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, and implementing regulations, 40 Code of Federal Regulations (CFR) Parts 1500–1508, NPS Director’s Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making* (NPS 2011) and the accompanying handbook (NPS 2015). Compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, is being conducted concurrently with the NEPA process per the Advisory Council on Historic Preservation’s procedures found at 36 Code of Federal Regulations 800.8. Public scoping efforts will accommodate both the NEPA and Section 106 process.

PURPOSE OF AND NEED FOR ACTION

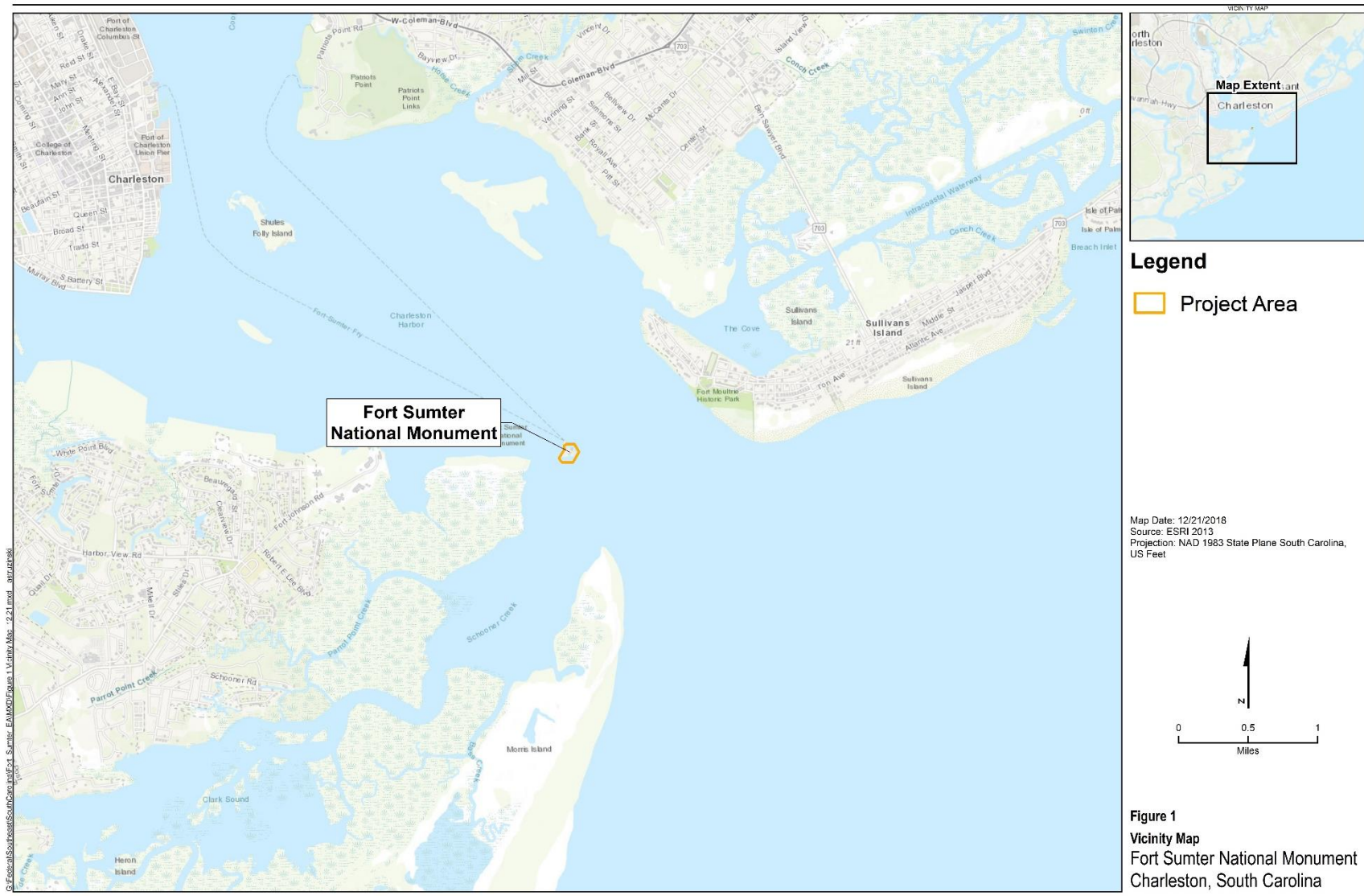
Fort Sumter NM is subject to high wave energy striking the fort walls and the existing riprap breakwater. The purpose of this proposed project is to further protect Fort Sumter NM from erosion and structural damage, and to preserve the structure for future generations. This project is needed for the following reasons:

- The historic fort foundation walls have been damaged by wave action and by changes in the riprap. Where the riprap touches the brick fort walls, it has eroded the brick, resulting in a wavy wall and damage to the brick and mortar. On the side of the fort facing Charleston, there is no riprap, and currently waves break against that side of the fort, resulting in failing brickwork.
- Forecasted sea level rise will pose a threat to the fort in years to come, which may intensify impacts on the fort walls resulting from high wave events.

PROJECT AREA

The proposed rehabilitation of the breakwater project is located at Fort Sumter NM, in the Charleston Harbor, South Carolina. Fort Sumter was built on a man-made island. The existing riprap surrounds approximately three-quarters of the fort along the northern, eastern, and part of the southern side of the fort. The project area, depicted in figure 2, includes the fort, a 100-foot boundary extending into the waters surrounding the fort walls, and a portion of the island to the southwest of the fort.

Chapter 1: Purpose of and Need for Action





SIGNIFICANCE OF THE PROJECT AREA

Fort Sumter was established as a National Monument in 1948. The fort is a five-sided, three-tiered masonry structure constructed starting in 1829 that was important both strategically and symbolically through the American Civil War. Fort Sumter preserves the site where the first shots of the American Civil War were fired on April 12, 1861, initiating one of the most crucial and defining periods in the nation's history. After the initial attack, Fort Sumter remained under Confederate control for a 20-month-long siege and Union Bombardment. As a result, Fort Sumter became the most heavily bombarded location of the American Civil War and was eventually reduced to ruins and modified into an impregnable earthen fortification.

Together, Fort Sumter and Fort Moultrie (located across the Charleston Harbor channel on Sullivan's Island), preserve elements of all major periods of American seacoast defense and were witness to a continuum of American history. Today the interior of the fort is dominated by Battery Huger, an Endicott-era concrete battery built in the fort parade ground after the Spanish American War in 1898 and used for coastal defense through World Wars I and II. In addition, the assemblage of cannons at Fort Sumter and Fort Moultrie comprise the most comprehensive collection of historic coastal artillery found in the United States. The museum collection at Fort Sumter NM also includes four historically-important flags: the 33-star Fort Sumter Storm and Garrison flags, the Palmetto Guard Flag of the Palmetto Guard (South Carolina militia unit), and the 35-star US "Colorado" flag (NPS 2016a).

ISSUES AND RESOURCE TOPICS RETAINED FOR DETAILED ANALYSIS

In the context of NEPA reviews, issue statements describe concerns associated with current conditions in the project area or from implementation of an alternative. Through the scoping process, the NPS identified several issues related to the proposed action that were retained for detailed analysis:

Construction activities associated with the project have the potential to impact special-status species and habitat.

The project area is within the waters of the Charleston Harbor, which provides habitat to listed species. The federally threatened West Indian manatee (*Trichechus manatus*) is found in estuaries and rivers in South Carolina and would have the potential to be present in the project area. Several species of sea turtles and two sturgeon species also use the estuarine habitat in the Charleston Harbor and could be found in the project area. The potential presence of these species in the project area could result in impacts on these species during project construction. The use of heavy equipment could disturb these species or result in injury. NPS would implement guidelines for the protection of manatees during construction activities, including time of year restrictions on in-water work. Measures to protect other listed species would also be employed based on consultation with the US Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) Fisheries.

Construction activities associated with the project have the potential to impact wetlands, the floodplain, and water quality.

The project area lies entirely within the 100-year floodplain of the Charleston Harbor, and wetlands are also present in the project area. Construction of the new breakwater and

development of the living shoreline would result in temporary and long-term impacts on wetlands and floodplains. The new stone wall would be placed in nearshore submerged habitat and the deepwater habitat would be converted to a native estuarine salt marsh. The proposed project would result in the loss of approximately 1.0 acres of wetland, but the creation of 2.8 acres of wetlands, for a net gain of 1.8 acres of wetland habitat, with no net loss of wetland habitat. In addition, water quality in the project area may be temporarily impacted during construction from increased turbidity. However, the NPS would implement appropriate best management practices (BMPs), as identified in NPS Procedural Manual 77-1: *Wetland Protection* (NPS 2016b) to minimize impacts.

It was determined that the potential wetland and floodplain impacts resulting from the proposed action are considered an excepted action under Director's Order 77-1, 4.2.1.7, *Maintenance, repair, or renovation*. As a result, an NPS Statement of Findings is not required for this project. However, impacts on floodplains, wetlands, and water quality are analyzed in Chapter 4, *Environmental Consequences*.

Construction activities and the breakwater have the potential to impact the cultural landscape and viewshed of Fort Sumter NM.

The development of a new breakwater and living shoreline would change the appearance of the waters surrounding the fort. A rock breakwater would be constructed using riprap that is currently placed at the foot of the fort walls and is a contributing resource to the historic viewshed of Fort Sumter. Sand would be placed in-between this new breakwater, and native coastal vegetation would be planted. These actions have the potential to change the character of the view and landscape of the fort both for those viewing the harbor from the fort, and those viewing the fort from surrounding areas. The existing riprap at the fort is considered a contributing resource; for this reason, potential impacts on the **viewshed are analyzed under the "Cultural Landscape" resource topic**.

ISSUES AND RESOURCE TOPICS DISMISSED FROM DETAILED ANALYSIS

The following issues were initially considered but were ultimately dismissed from detailed analysis in this EA. These issues are described below with the reason(s) that further analysis was not warranted.

Biological Resources – Vegetation

The proposed project would have some short-term impacts on vegetation in the project area during the construction period, but impacts would be minimal, and the new living shoreline would add marsh vegetation in the project area. This would result in long-term beneficial impacts. For this reason, vegetation has been dismissed from further analysis in this EA.

Biological Resources – Wildlife and Wildlife Habitat

The proposed project would have some short-term impacts on wildlife during the construction period, but ultimately the development of the living shoreline at Fort Sumter NM would provide improved habitat for both terrestrial and aquatic species. This habitat creation would result in long-term beneficial impacts. For this reason, wildlife and wildlife habitat have been dismissed from further analysis in this EA.

Cultural Resources – Archeological Resources

Archeological resources at Fort Sumter NM have been previously surveyed in the *Submerged Cultural Resources Survey of Proposed Breakwater Construction Project Area, Fort Sumter National Monument* (Russell 2004). No further documentation of archeological resources is needed, and precautions would be taken during construction to ensure that these resources would not be damaged. However, an Archeologist will be onsite during riprap relocation to monitor for possible objects of archeological/historical significance. For this reason, archeological resources were dismissed from analysis in this EA.

Cultural Resources – Museum Collections

The proposed project would result in the production of some museum records, which would have to be stored in archives. This could require additional space and entry time by staff. However, this would be a minimal impact on the museum collections and museum staff at Fort Sumter NM. For this reason, museum collections were dismissed from analysis in this EA.

Cultural Resources – Prehistoric and Historic Structures

The proposed project would have the potential to impact historic structures, most notably the fort walls, due to the removal of riprap. However, the removal of riprap would allow for much needed maintenance and repair that was previously not possible, resulting in beneficial impacts on the fort. The condition of the wall and soils underneath the riprap are unknown but it is likely that damage to the wall only occurs in limited sections. Any work for maintenance and repair would be analyzed in a separate action beyond this EA. For this reason, historic structures were dismissed from analysis in this EA.

Geological Resources – Geological Processes

The living shoreline to be created under the proposed project would result in the accretion of sediment between the breakwater and the fort. However, this would have a minimal impact on geological processes and shoreline change, as the design of the proposed project includes placement of fill material for the living shoreline. For this reason, geological processes were dismissed from analysis in this EA.

Human Health and Safety

Wave action and erosion may impact the stability of the fort walls over time. In addition, the current placement of riprap makes access to the fort walls difficult for staff undertaking maintenance and repair work. Stabilization of the fort walls and improved access to the foundation for maintenance would have beneficial impacts on the health and safety of fort staff. In addition, development of the living shoreline has the potential to reduce flooding inside the fort during high tides, which would benefit the safety of national monument visitors and staff. Because impacts of the proposed project to health and safety are beneficial, this topic was dismissed from analysis in this EA.

Viewsheds

The proposed project would alter the appearance of the fort from the water by creating a new shoreline. In some areas the new vegetated saltmarsh would change the viewshed but the change would be minimal. For this reason, viewsheds were dismissed from analysis in this EA.

Visitor Use and Experience

The proposed project would result in beneficial impacts on visitor use and experience at Fort Sumter NM. Protection of the fort foundation walls from erosion would allow for continued visitor access for future generations. The potential decrease in occasional flooding as a result of the new breakwater would improve visitor access and visitor experience. For this reason, visitor use and experience was dismissed from analysis in this EA.

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CHAPTER 2: ALTERNATIVES

Two alternatives were chosen for detailed evaluation in this EA: the no-action alternative and the proposed action/preferred alternative. This chapter also describes other alternatives that were initially considered but dismissed from detailed analysis.

DESCRIPTION OF THE ALTERNATIVES

No-Action Alternative

The no-action alternative is analyzed in the NEPA process for the review and comparison of feasible alternatives to the existing baseline conditions. Under the no-action alternative, the NPS would not rehabilitate the existing riprap located at the base of the fort foundation or develop a living shoreline at Fort Sumter NM. The riprap would remain in place at the base of the fort walls, allowing nature to take its natural course. The existing riprap would continue to deteriorate resulting in damage to the fort. Erosion of the bricks and mortar would continue, leading to the potential for failure of the fort walls over time.

With projected sea level rise, the existing riprap would be insufficient to protect the fort from wave action, particularly during storm events and hurricanes. In addition, the cost of continued maintenance activities could increase 10-20 times annually if the fort walls failed.

Proposed Action/NPS Preferred Alternative

The proposed project would consist of moving the existing 1,825 tons of armor stone riprap that is currently positioned against the exterior foundation walls of Fort Sumter approximately 60 feet out into the water and away from the brick walls of the fort to create a lower protective breakwater structure.

Additional stone would be placed if needed to complete the new breakwater. The breakwater would run along the left face, right face, and right flank of the fort to provide protection to the fort from wave action (figure 3). A living shoreline would be created between the breakwater and the fort's walls. This area would be backfilled with sand and planted with native vegetation, including smooth cordgrass (*Spartina alterniflora*) and saltmeadow cordgrass (*Spartina patens*). The living shoreline would create a natural habitat for both terrestrial and aquatic life. The construction of the breakwater and living shoreline would provide protection from wave action and allow for maintenance to be performed on the fort's exterior walls.

Breakwater

Under the proposed action, an approximately 992-foot-long breakwater would be constructed around the left face, right face, and right flank of the fort (figure 3). The design of the breakwater would allow for overtopping from wave action.



The breakwater would be designed to sit approximately 2 feet above mean higher high water, which includes consideration for sea level rise. Stone would be moved from the existing placement along the fort walls to be reused in the new breakwater location. Figure 4 shows the proposed design dimensions of the breakwater. The breakwater design would have a crest width of three armor stones, for a width of 5.8 feet. The breakwater would have a slope of 1/1.5 on the landward side of the breakwater, and a slope of 0.5 on the seaward side. This would allow wave energy to be dissipated over a greater area and allow for construction of the breakwater with smaller stone. The overall width of the proposed breakwater would be approximately 37.7 feet. The breakwater would be constructed 60 feet seaward from the fort walls and would have a height of approximately 9 feet. This design was determined based on the NPS Fort Sumter Preservation Report (US Naval Academy 2017), which analyzed plausible means to protect the fort from the environmental impacts of sea level rise and wave energy. The breakwater **would have natural voids and openings that would allow aquatic organisms to escape if trapped behind the breakwater.**

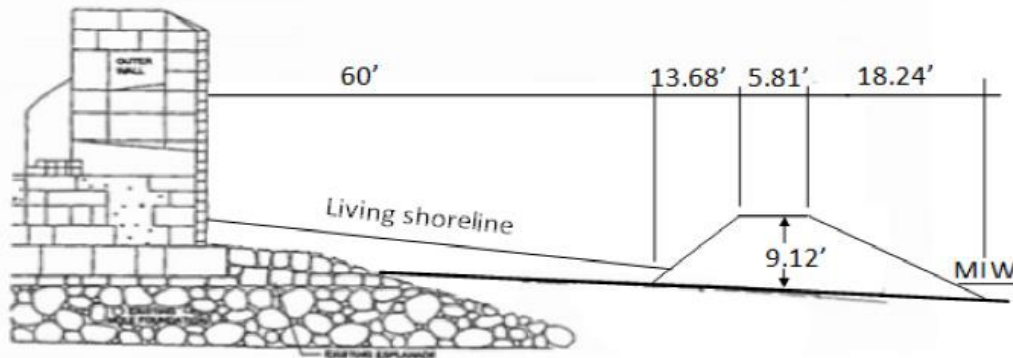


Figure 4. Breakwater-Living Shoreline Dimensions

Living Shoreline

The living shoreline would be constructed with fill material placed landward of the breakwater up to the fort foundation walls. Sand would be placed at a 1:10 slope from mean low water to mean high water, with a rise of 2-3 feet out of the water at the fort walls to allow access to the walls for maintenance and repair. The area would be filled with sand of a similar grain size to the sand found in the Charleston Harbor. Drier and less frequently submerged areas of the living shoreline would be planted with saltmeadow cordgrass. Smooth cordgrass would be planted in constantly submerged areas of the living shoreline. Grass plugs for both species would be planted with a 1.5-foot spacing between plugs.

Construction Activities Including Equipment, Timing, and Access

The construction plan for the proposed breakwater would include the USFWS mitigation measures for the West Indian manatee. West Indian manatees are found in South Carolina estuaries and rivers during times of warmer water temperatures, generally April through November. The USFWS guidelines to prevent construction-related impacts on manatees are detailed below in the mitigation measures.

ALTERNATIVES CONSIDERED BUT DISMISSED FROM DETAILED ANALYSIS

The following alternatives were considered for project implementation but were dismissed from further analysis, as described below. These alternatives were analyzed in the US Naval Academy NPS *Fort Sumter Preservation Report* (2017) based on wave reduction, cost, and other factors.

- **US Army Corps of Engineers (USACE) Breakwater Design:** Under this alternative, the existing armor stone surrounding Fort Sumter NM would be removed, and a new breakwater would be constructed 20 feet from the fort foundation walls. This design was based on a proposal by the USACE in 1999. This alternative would create less of a reduction of wave impact on the fort walls and would provide less access to the fort walls than the preferred alternative. This alternative would not as fully meet the objectives of the project to reduce wave action on the fort walls. Easy access to the fort walls for ongoing monitoring, maintenance, and repair would not be provided under this alternative. Therefore, this alternative was dismissed.
- **Capstone Team Breakwater Design:** An engineering analysis of potential alternatives for the proposed breakwater included a design provided by the US Navy Capstone Team. This design included development of a breakwater 30 feet from the fort walls. This breakwater would be constructed out of a permeable core using armor stone. This alternative would have a similar reduction in wave impact on the walls to the USACE breakwater design described above, which would not provide as much reduction as the sill-living shoreline design proposed in this EA. In addition, this alternative would provide only limited access to the fort walls. Therefore, this alternative was dismissed.
- **Living Shoreline:** Construction of a living shoreline with no breakwater structure was considered. This would include the placement of sand extending approximately 60 feet from the wall and planting of salt marsh plant species. This alternative was dismissed because of concerns over the possible disruption of the shoreline by a major storm, which could disrupt establishment of plant species and prevent development of the shoreline. Although this alternative would provide better accessibility to the fort walls for maintenance and repair, this alternative would not as fully meet the objectives of the project to reduce wave action on the fort walls. Therefore, this alternative was dismissed.

CHAPTER 3: AFFECTED ENVIRONMENT

This chapter describes the resources that could be impacted from implementation of the alternatives. The descriptions of the resources provided in this chapter serve as the baseline conditions against which the potential impacts of the alternatives considered in this EA are compared.

SPECIAL-STATUS SPECIES

For the purposes of this EA, “special-status species” are defined as those species listed by the USFWS as endangered, threatened, candidate, or special concern; by NOAA National Marine Fisheries Services as endangered or threatened; or by the South Carolina Department of Natural Resources (SC DNR) as endangered, threatened, candidate, or a species of concern. The terms “threatened” and “endangered” generally describe the official federal status of vulnerable species, as defined by the Endangered Species Act (ESA) of 1973. The term “candidate” is used officially by the USFWS when describing those species for which sufficient information on biological vulnerability and threats is available to support issuance of a proposed rule to list, but rule issuance is precluded for some reason. The federal “species of concern” status is applied to those species for which listing may be warranted, but further biological research and field study are needed to clarify their conservation status.

Section 4.4.2.3 of NPS *Management Policies 2006* states that the NPS “will fully meet its obligations under the NPS Organic Act and the ESA to both proactively conserve listed species and prevent detrimental effects on these species” (NPS 2006). Under the consistency clause (Section 7[a]) of the ESA, NPS is required to consult with USFWS and NOAA Fisheries if federally protected special-status species may be present in the area affected by the proposed project. NOAA Fisheries and USFWS share authority over certain federally protected species and have total jurisdiction over others. Fort Sumter NM sits in the Charleston Harbor, an estuary that supports several marine and terrestrial species that are federally threatened or endangered. Consultation with the USFWS and NOAA Fisheries was initiated with letters sent on November 15, 2018 (appendix A). Responses were received on November 29, 2018 from the USFWS and on February 22, 2019 from NOAA Fisheries; these letters are included in Appendix A.

Table 1 provides the listed species with the potential to occur in the project area based on known species at Fort Sumter NM, an official species list from the USFWS, and species with potential habitat in the project area that are listed for Charleston County by the SC DNR. A full list of species identified as potentially occurring but not known to occur at Fort Sumter NM is provided in appendix B. The fort and associated shoal have little available habitat for listed species, particularly beach habitat. Some of these species could potentially be present but it is unlikely that the fort supports listed species. In addition, the project area has the potential to provide Essential Fish Habitat (EFH) in the subtidal waters.

Table 1. Federal and State Listed Species Present or Potentially Present at Fort Sumter National Monument

Scientific Name	Common Name	Federal Status	State Status
Reptiles			
<i>Caretta caretta</i>	Loggerhead sea turtle	Threatened	Threatened
<i>Dermochelys coriacea</i>	Leatherback sea turtle	Endangered	Endangered
Birds			
<i>Charadrius melodus</i>	Piping plover	Threatened	Endangered
<i>Sterna antillarum</i>	Least tern	--	Threatened
Mammals			
<i>Trichechus manatus</i>	West Indian manatee	Threatened	Endangered
Fish			
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	Endangered	Endangered
<i>Acipenser oxyrinchus oxyrinchus</i>	Atlantic sturgeon	Endangered	--

Sources: USFWS 2018, SC DNR 2018; NPS 2018.

Loggerhead Sea Turtle (*Caretta caretta*): Loggerhead sea turtles are a widely distributed species commonly found in open ocean as well as in bays and estuaries, salt marshes, and the mouths of large rivers. Weighing around 200 pounds with an average length of 3 feet, loggerheads are known for their distinctive large head and jaws. Loggerheads feed on mollusks, crustaceans, and fish, and nest in the United States on open beaches and bays (USFWS 2015a). Loggerhead sea turtles are occasionally observed at Fort Sumter NM (NPS 2018) and could be present in the waters of the project area.

Leatherback Sea Turtle (*Dermochelys coriacea*): The leatherback sea turtle is the largest, deep diving sea turtle, weighing up to 2,000 pounds. The leatherback is the most pelagic of the sea turtle species. Jellyfish are the main staple of the leatherback diet, and leatherbacks typically also eat other deep water soft-bodied organisms. Adult females require sandy nesting beaches backed with vegetation and sloped sufficiently so the crawl to dry sand is not too far. The preferred beaches have proximity to deep water and generally rough seas (USFWS 2015b). The leatherback sea turtle is a rare visitor to the Charleston Harbor (NPS 2018) and is unlikely to be present in the project area.

Piping Plover (*Charadrius melodus*): A small, sandy colored shorebird, piping plovers are found on coastal beaches and sandflats along the Atlantic seaboard (USFWS n.d.). In South Carolina, piping plovers occur as both migrants traveling from overwintering habitat to breeding grounds, as well as populations overwintering in South Carolina on barrier beaches (SC DNR 2015a). Plovers feed on invertebrates within the wet sand zone and intertidal habitats (USFWS n.d.). At Fort Sumter NM, plovers are considered occasional resident species (NPS 2018) but the sandy habitat preferred by this species is limited in the project area.

Least Tern (*Sterna antillarum*): Least terns are the smallest tern species in North America and are found in colonial nesting sites on pebbly or shell-covered beaches with little vegetation (SC DNR 2015b). Least terns forage above the water, and feed on prey near the surface of the water, including fish, crustaceans, and insects (Audubon 2018). At Fort Sumter least terns are considered abundant, and breeding is noted as occurring at the fort (NPS 2018). However, this beach habitat is not abundant within the project area.

West Indian Manatee (*Trichechus manatus*): West Indian manatees are large aquatic mammals and are relatively rare visitors to the estuaries of South Carolina. They can be found in the coastal waters during the warmer weather months. Manatees move from freshwater to brackish and salt water but are typically found in slow-moving river environments and shallow coastal bays. Manatees are herbivorous and must consume great quantities of plant material each day; manatees can spend 5-8 hours a day grazing (USFWS 2008). Major threats to manatees include collisions with boats and loss of habitat, particularly warm water habitat crucial to manatees during winter months (USFWS 2008). Manatees are occasional visitors to Fort Sumter NM (NPS 2018) and could occur in the shallow waters of the project area.

Shortnose Sturgeon (*Acipenser brevirostrum*): Shortnose sturgeon are a large and slow-growing species found commonly in rivers and coastal waters along the Atlantic coast (NOAA Fisheries n.d.a). They can reach up to 4.5 feet in length, and 30 years of age (NOAA Fisheries n.d.a). Unlike the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), shortnose sturgeon spend most of their lives in rivers and coastal waters, rather than in the ocean (NOAA Fisheries n.d.a). They prefer deep water with soft or vegetated bottom substrate, where they feed on crustaceans, worms, and mussels (SC DNR 2015c). This species is considered “probably present” at Fort Sumter NM (NPS 2018) but would be unlikely to occur in the shallow water habitat found in the project area.

Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*): Atlantic sturgeon are a large and slow-growing species found commonly in coastal waters along the Atlantic coast; they spend much of their lives out at sea (NOAA Fisheries n.d.b). Atlantic sturgeon can also reach a much larger size and age than the shortnose sturgeon, sometimes up to 16 feet in length and 60 years or age (NOAA Fisheries n.d.b). Atlantic sturgeon head out to sea as juveniles but return to rivers to spawn in the spring and early summer. Like shortnose sturgeon, Atlantic sturgeon are benthic feeders that consume primarily invertebrate species (McCord n.d.). In consultation with SC NDR, the Cooper River, which enters the Charleston Harbor, supports a population of adult sturgeon that is designated as critical habitat (appendix A). However, this species is not known at Fort Sumter NM (NPS 2018) and would be unlikely to occur in the shallow water habitat found in the project area.

CULTURAL RESOURCES

Fort Sumter NM was constructed starting in 1829, but the location was an important strategic location prior to the construction of the fort. As the site of the first battle of the Civil War and having a long military history, the site contains known cultural resources. Fort Sumter was established as a national monument on April 28, 1948 and was transferred from the USACE to the NPS in the months following the designation.

Cultural Landscape

The fort foundation walls and other elements of the fort, including the natural components of the man-made island, comprise the cultural landscape of Fort Sumter. Fort Sumter NM was constructed on a man-made island in the Charleston Harbor starting in 1829 as a “pentagonal, three-tiered, masonry fort with truncated angles” (Cultural Landscape Laboratory 2017). The mole foundation upon which the fort sits and much of the sand parade ground was completed in 1845, but the completion of a wharf in 1842 made the fort tall enough to shelter the interior of the fort. The brutal coastal environment, including strong winds, flooding, and subsidence, resulted in the need for adjustments to the fort elevation and other elements of the fort design by trial and error (Cultural

Landscape Laboratory 2017). Construction of the fort was not entirely complete by the start of the Civil War. At this time, the architectural style of Fort Sumter was characterized as “Greek Revival with influences of Federal architecture” (Cultural Landscape Laboratory 2017).

As the site of the first battle of the Civil War on April 12, 1861, Fort Sumter is symbolic of the 4-year conflict. Through the war, the fort sustained heavy damage, and was reduced to not much more than an earthen pit with ruins (Cultural Landscape Laboratory 2017). After the Civil War and through the 1870s Fort Sumter was repaired to make it operational, but funding for this work was limited, and the fort sustained damage from several hurricanes and an earthquake. The Endicott-era ushered in renewed interest and funding for restoring the coastal defense system, and improvements to the fort began again. During this time and through the start of the Spanish-American War in 1898, Battery Huger, a concrete structure in the interior of Fort Sumter, was constructed, and was completed in 1899 (Cultural Landscape Laboratory 2017). Modernization of Fort Sumter was completed during the first decade of the 20th century. With the outbreak of World War I, advanced weaponry and two new barracks were constructed in support of a garrison stationed at the fort.

As the nature of warfare and military technology quickly advanced, these barracks were demolished only a few years later. In World War II, Fort Sumter was used as a communications and navigation post, not as a military installation, and was ultimately decommissioned in 1947 (Cultural Landscape Laboratory 2017). Fort Sumter was established as a national monument on April 28, 1948 and was transferred from the USACE to the NPS in the months following the designation. A period of excavation and repair followed this transfer in which many of the Civil-War era features of the fort were restored.

The addition of riprap to form a breakwater against the foundation walls was first started in 1967, with the addition of more extensive riprap at points in the next several years (Cultural Landscape Laboratory 2017). The breakwater riprap was added in 1972 roughly 20 feet from the fort walls to address the impacts of wave action that moved existing boulders into the fort walls (Cultural Landscape Laboratory 2017). This riprap altered the cultural landscape, as the northern walls of the fort were originally unprotected. The area where the breakwater and living shoreline are proposed would have been open water habitat. The amount of shoaling around the fort has varied throughout the fort’s history (Cultural Landscape Laboratory 2017).

According to the *Fort Sumter National Monument Cultural Landscape Report* (Cultural Landscape Laboratory 2017), the riprap encircling the exterior of the fort is considered a contributing structure to the cultural landscape. The riprap protects the fort walls from excessive wave action. The riprap material is a combination of cut granite blocks, misshapen stone, and discarded pieces of historic and contemporary construction materials, such as brick, stone, and concrete. Currently riprap is visible along all edges of Fort Sumter, although the amount of riprap that can be seen changes depending on if the tide is in or out.

WETLANDS AND FLOODPLAINS

Fort Sumter was constructed on a man-made island on a natural shoal within the Charleston Harbor, and is within an identified estuarine wetland. Wetland data from the USFWS National Wetlands Inventory maps indicate that the proposed project area includes three wetland types. Wetlands are classified based on the Cowardin Classification System (Cowardin et al. 1979). The first is an estuarine, subtidal, unconsolidated bottom habitat (E1UBL) that surrounds the fort to the north, east, and south. The southwestern portion of the project area was characterized as an estuarine, intertidal, unconsolidated shore that is regularly flooded (E2USN). Northwest of this area was

characterized as estuarine, intertidal, unconsolidated shore that is irregularly flooded (E2US2P) (EA Engineering, Science, and Technology, Inc., PBC 2018).

A wetland survey was completed in October 2018 to determine the extent of wetlands present in the project area for the proposed breakwater (EAEST 2018). The wetland project area included nearly 5 acres of wetland habitat (figure 5). Wetland types found in the project area for the proposed breakwater and living shoreline were classified, and the following wetlands were noted:

- The existing riprap was categorized as a large estuarine, intertidal rocky shore rubble artificial wetland (E2RS2r) (figure 5). This area supports oyster beds within the riprap.
- The saltmarsh found along the southwestern side of the fort was characterized as an estuarine, intertidal, emergent wetland (E2EM1N) dominated by smooth cordgrass (*Spartina alternifolia*) (figure 5).
- A small sandy beach area on the southwestern side of the fort was characterized as an estuarine, intertidal, unconsolidated bottom wetland (E2US2N), with a sandy substrate and pockets of rubble (figure 5).

In addition, the subtidal waters surrounding Fort Sumter are considered deepwater habitat. This submerged habitat can be classified as estuarine, subtidal, unconsolidated bottom sand (E1UB2L) (figure 5). This type of submerged deepwater habitat is representative of much of the Charleston Harbor.

Fort Sumter NM is located entirely within the floodplain characterized as Zone VE, Coastal Flood with velocity hazard (wave action), according to Federal Emergency Management Act (2004) Federal Insurance Rate Maps, Map Numbers 45019C0519J and 45019C0538J.

WATER QUALITY

Fort Sumter is located in the Cooper River/Ashley River Basin, Ashley River subbasin (HUC 03050202). Surface water quality data are collected by the South Carolina Department of Health and Environmental Control at several points in the harbor close to Fort Sumter. Water quality data were compiled as part of a 2012 Natural Resource Condition Assessment at Fort Sumter NM. Generally, data indicated that waters around Fort Sumter NM did not exhibit water quality problems, although some single point data showed values below minimum standards for low dissolved oxygen levels (Dorr et al. 2012). Nitrogen levels in the water were assessed to be good, while the levels of phosphorous were assessed as fair. However, these values were not noted to be robust (Dorr et al. 2012). Fecal coliform levels did not appear to be problematic overall, though some single data points did exceed minimum standards (Dorr et al. 2012). Contaminant levels at Fort Sumter were not available, but the 2012 report noted that several subbasins of the watershed are listed as impaired due to the presence of contaminants (Dorr et al. 2012). For a full explanation of the water quality data see the 2012 *Natural Resource Condition Assessment: Fort Sumter National Monument and Charles Pickney National Historic Site, South Carolina* (Dorr et al. 2012).



Water quality data are collected in the harbor at Bell Buoy 28 (MD-048), which is in proximity to the project area. A 2012 Waterbody Report for this waterbody indicates that the estuary near the mouth of the harbor has a good status for aquatic life support and for primary contact recreation (US Environmental Protection Agency 2012). A baseline study of surface water quality at Fort Sumter NM was also completed in 2003 based on existing monitoring data in the region. Surface water resources in Fort Sumter include the Atlantic Ocean, Intercoastal Waterway, Charleston Harbor, and other waterbodies and tidal mud flats and estuarine wetlands (NPS 2003). Waters at Fort Sumter are a mix of saline and fresh waters in transition. Based on the baseline water quality assessment, water quality at Fort Sumter NM has been heavily impacted by human activities. Sources of potential water contaminants include industrial and municipal wastewater, stormwater runoff, marine traffic, commercial and residential development, recreational use, and atmospheric deposition (NPS 2003).

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CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

GENERAL METHODOLOGY

This chapter describes the potential environmental consequences of implementing the no-action alternative and the proposed action. It is organized by resource topic and provides a comparison between the two alternatives based on issues and topics discussed in chapter 1 and further described in chapter 3. In accordance with the Council on Environmental Quality regulations, direct, indirect, and cumulative impacts are described, and the impacts are assessed in terms of context and duration (40 CFR 1502.16). This analysis assumes that the mitigation measures, as defined in chapter 6, would be implemented for construction activities under the proposed action.

PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS

Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

To determine potential cumulative impacts, past, present, and foreseeable future actions and land uses were identified in or near the project area. Cumulative impacts are considered for the no-action alternative and the proposed action, by combining the impacts of the alternative being considered with other past, present, and reasonably foreseeable future actions. The results are presented at the end of each impact topic discussion. Table 2 shows the projects considered in the cumulative impact analysis for each resource.

Table 2. Past, Current, and Future Actions Used in the Analysis of Cumulative Impacts

Project	Project Description	Impact Topics
Charleston Harbor Channel Deepening Project	A project to deepen the Charleston Harbor Channel to accommodate new-Panamax ship drafts was started in Summer 2017. This project resulted in the deepening of the channel to a 54- to 60-foot depth, which allows for larger ship traffic in the channel adjacent to Fort Sumter and the breakwater. Maintenance dredging is completed approximately every 5 years.	<ul style="list-style-type: none">• Special-Status Species• Cultural Landscape• Wetlands and Floodplains• Water Quality
Fort Sumter NM Dock Decking Replacement	NPS is proposing a project to replace the decking on the main dock at Fort Sumter within the next 5 to 10 years. The current decking is deteriorating and will require replacement. Although no formal plans have been initiated for this project, the dock decking replacement would likely not result in any changes to the footprint of the dock but would involve the replacement of existing pilings.	<ul style="list-style-type: none">• Special-Status Species• Cultural Landscape• Wetlands and Floodplains• Water Quality
Fort Foundation Wall Maintenance	Repainting and maintenance activities of the fort foundation walls have been underway for several years and will continue. Fort wall maintenance activities are completed year-round and include repainting of brick and replacement of missing mortar.	<ul style="list-style-type: none">• Cultural Landscape

Project	Project Description	Impact Topics
Capping Archeological Resources	A project is proposed to place a clay cap in the sewer outfall field to protect existing archeological resources from damage due to erosion, saltwater intrusion, and visitor impacts. This would involve planting the cap with native vegetation that discourages visitor access to the area, such as prickly pear.	<ul style="list-style-type: none"> • Cultural Landscape
Tour-Boat Diesel Electric Retrofit	As part of a new concession contract, tour boats used to bring visitors to Fort Sumter NM would be retrofitted to diesel electric engines. As part of this effort, an electric charging station would be constructed at Fort Sumter. The proposed work would include the construction of a charging station on the dock and upgrades to the existing transformers in the fort to support the charging station. This work would be completed on the existing dock and at the existing transformer.	<ul style="list-style-type: none"> • Cultural Landscape • Water Quality
Local Regional Projects	Several local projects in the Charleston Harbor would not be in close proximity to Fort Sumter NM but could have cumulative impacts. These include the development of a reef structure in the Charleston Harbor using a decommissioned submarine, restoration of the Battery seawall in Charleston, construction of a new African-American Museum on the wharf in Charleston, and recent USACE approval of a project to extend and develop Riverfront Park in North Charleston.	<ul style="list-style-type: none"> • Special-Status Species • Cultural Landscape • Wetlands and Floodplains • Water Quality

SPECIAL-STATUS SPECIES

Impacts on federally and state listed species are analyzed in this section. Construction of the breakwater and living shoreline would occur in the habitat of some listed species, which could cause direct and indirect impacts on these species. The project for the analysis consists of the limits of construction for the areas proposed for the breakwater and living shoreline placement. Consultation with the USFWS and NOAA Fisheries was initiated with letters sent on November 15, 2018 (appendix A). A response was received from USFWS on November 29, 2018, from SC DNR on December 17, 2018, and from NOAA Fisheries on February 22, 2019.

Methodology

This section considers impacts on those species that were provided in the response from the USFWS and other agencies as having a potential to occur in the project area, as well as species with habitat that is found within the project area. A list of species with the potential to occur in the project area is provided in chapter 3. The alternatives were evaluated to determine the impacts that each alternative would have on these species both during construction and from the implementation of the breakwater and living shoreline.

No-Action Alternative

There would be no construction under the no-action alternative and the existing breakwater would not be relocated away from the fort walls. Under this alternative, no impacts on special-status species would occur, as no actions with the potential to disturb these species would be undertaken.

Overall, this alternative would result in no new impacts on listed species or special-status species in the project area. Overall, the no-action alternative would have no effect on listed species.

Cumulative Impacts

There is one past action, the deepening of the Charleston Harbor Channel, and one reasonably foreseeable future action, the replacement of dock decking at Fort Sumter, that would have potential adverse impacts on listed species, including turtle, sturgeon, and manatees. In-water construction work has the potential to disturb special-status species, but these impacts would be expected to be short term. Projects would implement measures to prevent any take of listed species during construction. Under the no-action alternative there would be no impact on special-status species. As a result, this alternative would not contribute to cumulative impacts when considered with past, present, and reasonably foreseeable future projects occurring in the vicinity of Fort Sumter NM.

Conclusion

Special-status species with the potential to occur in the project area would not be impacted under the no-action alternative. No construction work would be undertaken, and listed species could continue to use the project area in a transitory manner. The no-action alternative would also not contribute to cumulative impacts on special-status species.

Proposed Action/Preferred Alternative

Impacts on special-status species with the potential to occur in the project area were assessed. While several listed species are known to occur in the vicinity, not all of these species would be found in the project area. Construction activities have the potential to impact listed species found in the project area directly and indirectly. The overall relocation of the riprap and placement of fill material for the living shoreline would require large equipment and would result in a high disturbance to the project area. No listed species are known to use the project area in more than a transitory manner. Listed species are not known to nest or reside in the project area or at Fort Sumter NM. Potential impacts on species are discussed more specifically below. NOAA fisheries noted the presence of EFH in the project area. The primary impact to EFH from construction of the breakwater would be the loss of subtidal non-vegetated flats by fill, or conversion to emergent wetlands. The breakwater would **have natural voids and openings that would allow aquatic organisms to escape if trapped behind the breakwater. In addition, the breakwater would not encompass the entire fort.**

Sea Turtles: Sea turtle species are not common in the project area but have the potential to occur in the shallow waters surrounding the fort. Leatherback sea turtles could be present in the coastal waters during spring and fall migratory periods, while loggerheads could be present during the nesting season from mid-May to mid-August. No nesting habitat for loggerhead sea turtles is present in the project area, but foraging habitat for both species is present. Construction activities could disturb turtle species, including underwater noise disturbance, or potential for incidental harm should a turtle occur in the project area during construction. However, measures would be taken to minimize the potential for impacts during construction, such as time-of-year restrictions and measures to minimize noise and turbidity. Long-term impacts as a result of conversion of subtidal habitat to intertidal habitat would be negligible given the amount of subtidal habitat provided in the vicinity of the project area. With these measures in place, it is anticipated that the proposed project *is not likely to adversely affect* either the loggerhead or leatherback sea turtle.

Shorebirds: Both the piping plover and least tern have been known to use shoreline habitat at Fort Sumter NM in the past and are present in the geographic region. Plovers, which forage on wet sand, would likely not be present in the habitat within the project area, but could be adversely affected by disturbance from construction activities in proximity to this habitat. Least terns forage in open shallow water and have the potential to be present in the project area. Measures to prevent impacts on shorebird species during construction would minimize the potential for impacts on shorebird species. The creation of intertidal saltmarsh in areas formerly consisting of subtidal deepwater habitat would have long-term beneficial impacts on shorebirds from the creation of foraging habitat. Overall, the proposed action *is not likely to adversely affect* the least tern or piping plover.

West Indian Manatee: Manatees may be present in the project area during the warmer months of the year and could be potentially impacted by construction activities. Disturbance from noise impacts, increased turbidity, or the potential for strikes with large equipment would have adverse impacts on manatees. However, the mitigation measures outlined in chapter 6, including using boats at idle speeds and observing for manatees in the project area would minimize the potential for these impacts to occur. Long-term impacts from the loss of subtidal habitat would have only negligible impacts on manatees. Overall, the proposed action *is not likely to adversely affect* West Indian manatees.

Sturgeon: The Atlantic and shortnose sturgeon occur in the coastal waters of the Charleston Harbor, and could be present in the project area. However, sturgeon have not been observed in the project area, and it is anticipated that few, if any sturgeon would be present. If sturgeon were present during construction activities they could be disturbed by increased turbidity during movement and placement of the riprap, and from noise impacts. Measures to reduce impacts on water quality and noise would help to mitigate these impacts. The loss of subtidal habitat in the project area would have a negligible impact on sturgeon. Overall, it is anticipated that the project *is not likely to adversely affect* sturgeon species.

Cumulative Impacts

The projects contributing to cumulative impacts described under the no-action alternative have had or would have both adverse and beneficial effects on special-status species, as described under the no-action alternative. The proposed action would have only minimal short-term impacts on listed species with the implementation of measures to reduce potential impacts. The proposed action is not anticipated to add to the cumulative impacts on these species when considered with other projects.

Conclusion

The proposed action would result in construction activities that could cause disturbance to listed species, including increased turbidity, noise impacts, and the potential for harm from the use of heavy equipment in the project area. BMPs and measures would be taken to ensure that impacts on listed species were minimized; as a result, the proposed action would may affect but are not likely to adversely affect listed species. Loss of subtidal habitat in the project area would be negligible when considered with the overall amount of subtidal habitat present in the vicinity of the site. Overall, the proposed action would not add to the beneficial and adverse cumulative impacts on listed species.

CULTURAL LANDSCAPE

For the purposes of NEPA, this analysis focuses on the potential impacts of the project to the cultural landscape and the historic features in the project area of Fort Sumter NM. The study area includes

the entirety of the Fort Sumter National Monument, as well as the surrounding waters within the Charleston Harbor.

Methodology

This analysis considers whether the proposed action would result in changes to the integrity, spatial relationship, and character-defining features of contributing elements of the Fort Sumter NM cultural landscape. These changes could be considered beneficial or adverse, depending on whether they enhance or detract from the cultural landscape or its associated features.

No-Action Alternative

Under the no-action alternative, the NPS would keep the existing breakwater at the base of the fort foundation walls in place and would continue to perform limited repairs of the foundation walls. However, over time, flooding and erosion of the foundation walls would continue, and would deteriorate the foundation walls to a point of failure, impacting the cultural landscape that represents Fort Sumter's military history and role in the American Civil War. Riprap currently piled up against the fort foundation walls rises above the water by as much as 12 feet in some areas, partially obscuring the fort foundation. The no-action alternative would result in a deterioration and eventual loss of sections of the fort foundation wall critical to Fort Sumter NM from both a structural and aesthetic perspective. The result would be long-term adverse effects on the workmanship, materials, and feeling of the cultural landscape.

Cumulative Impacts

Other past, present, and reasonably foreseeable future actions have had or would have both adverse and beneficial effects on the historic character of the cultural landscape. The Charleston Harbor Channel deepening project increased the depth of the channel, allowing larger ships to enter the harbor, adversely affecting the historic views from Fort Sumter NM. The dock decking replacement and diesel-electric tour boats would also have adverse impacts on the cultural viewshed of the fort, but these would be minor, as these resources already exist at Fort Sumter. Capping of archeological resources and continued maintenance of the fort foundation walls would protect the resources that contribute to the cultural landscape of the fort, resulting in beneficial impacts. The no-action alternative would add a long-term adverse increment to the adverse cumulative impacts on the cultural landscape.

Conclusion

In the long term, the no-action alternative would result in adverse effects to the cultural landscape as the breakwater and foundation walls fail. When combined with the effects of past, present, and foreseeable projects, the overall cumulative effects to Fort Sumter NM would be adverse, as the fort foundation walls that contribute to the cultural landscape would be degraded or lost under the no-action alternative.

Proposed Action/Preferred Alternative

The proposed action would involve moving 1,825 tons of armor stone riprap currently positioned against the exterior foundation walls of Fort Sumter by approximately 60 feet to create a breakwater structure. This would result in an effect to this contributing structure. The cultural landscape comprises numerous contributing structures, buildings, and features, of which the riprap is one.

Maritime resources typically undergo modification and improvements due to the harsh climatic conditions. As stated previously, the riprap has continually been supplemented to address erosion and the shoreline has been altered over the years. Currently, the riprap may be under water and visibly obscured during high tides. Protection of the fort foundation walls from further deterioration would protect this important resource, resulting in a beneficial impact on the cultural landscape. In addition, the removal of the riprap and development of a living shoreline would allow easier access to the fort walls for maintenance. This would allow the walls to be repaired more regularly, protecting this important feature and resulting in beneficial impacts.

The addition of the breakwater and living shoreline would change the characteristic of the cultural landscape of Fort Sumter NM. The historic viewshed both of the fort from the water and looking out from the fort would be altered. However, the living shoreline would not impair the viewshed to Fort Moultrie, as the living shoreline would not be largely visible from the top of the Fort or would not restrict the view. In addition, views from Fort Moultrie to Fort Sumter would not be impacted, as the breakwater and living shoreline would have the same visibility as the existing riprap. In addition, the new breakwater would reuse the historic materials for the same purpose as they were originally used. Therefore, the moving of riprap would have an effect on the cultural landscape, but not result in an adverse effect.

Since the fort has become a national monument, signs, benches, and other site furnishings have been installed in the landscape. Other changes are related to the accommodation of universal accessibility and associated improvements to circulation systems and buildings. Additionally, features have been established to support visitor needs and comfort. For the most part, the contemporary additions that postdate the periods of significance have had a minimal impact on the historic landscape. Some of these additions are reversible while others support an understanding and appreciation for the site's history. Most of the landscape features intended for coastal defense, civil war, commemoration, memorialization, or interpretation were in place by their respective periods of significance. Most of the existing landscape features survive from the periods of significance with a fair to good degree of integrity, and the extant contributing landscape features convey not only a sense of connection to place but various historic periods (Cultural Landscape Laboratory 2017).

The removal of the riprap and construction of a breakwater would not affect the location, setting, material, feeling, or workmanship of the landscape structure or the overall cultural landscape. There would be a slight modification to the overall design and form of the man-made island and riprap. However, the overall integrity of the cultural landscape would remain fair to good.

Cumulative Impacts

Other past, present, and reasonably foreseeable future actions have had or would have both adverse and beneficial effects on the cultural landscape, as described under the no-action alternative. The proposed action would have long-term adverse incremental effects to specific elements and features of the cultural landscape, but beneficial increment to other features. Overall, the proposed action would add to the beneficial and adverse cumulative impacts on the cultural landscape.

Conclusion

The proposed action would have both adverse and beneficial impacts on elements of the cultural landscape. The changes to the riprap would adversely impact a contributing resource, but this resource would still be present at the site in a function similar to the original purpose. In addition, the protection of the fort walls and increased maintenance accessibility would have a beneficial impact. Development of the living shoreline and movement of the breakwater is not expected to

impact the historic viewshed from the fort or looking towards Fort Sumter from Fort Moultrie. When the proposed action is combined with the effects of past, present, and foreseeable projects, the overall cumulative effects to the cultural landscape of Fort Sumter NM would be beneficial and adverse.

WETLANDS AND FLOODPLAINS

In this section, the impacts on wetlands and floodplains as a result of the proposed action are analyzed. Construction activities would occur in the floodplain and could cause direct and indirect impacts on the existing wetlands through temporary disturbance and permanent alteration of wetland types and functions. The project area for the analysis consists of the limits of construction for the areas proposed for the breakwater and living shoreline placement.

Methodology

A description of the baseline conditions of the wetlands within the project area is provided in Chapter 3: Affected Environment. Alternatives were evaluated against this baseline to determine the changes that would occur under each alternative. Potential impacts on wetlands were identified by reviewing the wetland delineation memorandum, existing data sources and literature, and quantifying the extent to which the project could impact wetlands and waters of the United States. To determine impacts to floodplains, the scope of the proposed actions within the floodplain was considered and the area of proposed disturbance in the floodplain was determined.

No-Action Alternative

Under the no-action alternative, there would be no construction activities, and the breakwater would remain where it is currently located along the fort foundation walls. The breakwater is classified as intertidal wetland habitat, and the waters of the Charleston Harbor surrounding Fort Sumter NM are also characterized as subtidal deepwater habitat. Estuarine wetland habitat is present on the western side of Fort Sumter, but estuarine saltmarsh is limited at the site. This habitat has developed as a result of shoaling due to placement of sediments on Spyder Island to the west of the fort (Cultural Landscape Laboratory 2017).

Under this alternative, no work would be completed in the floodplain or wetlands of Fort Sumter NM and wetlands would continue to be shaped by natural processes. A 2012 vegetation survey of Fort Sumter NM noted concerns that the saltmarsh wetland dominated by smooth cordgrass (*Spartina alterniflora*) would likely not be able to withstand the increased inundation that may result from natural coastal processes and sea level rise (McManamay, Curtis, and Corbett 2012).

Overall, this alternative would result in new adverse impacts on wetlands in the project area. The amount of estuarine wetland saltmarsh habitat available at Fort Sumter could decrease over time due to natural coastal processes and sea-level rise. No new wetland habitat would be developed at Fort Sumter NM under this alternative.

Cumulative Impacts

There is one reasonably foreseeable future action, the replacement of dock decking at Fort Sumter, that would have potential short-term adverse impacts on wetlands during the replacement of the existing pilings. Under the no-action alternative, wetlands would be adversely impacted within the project area; therefore, the no-action alternative would contribute to cumulative adverse impacts

when considered with past, present, and reasonably foreseeable future projects occurring at Fort Sumter NM.

Conclusion

Under the no-action alternative, wetlands and floodplains at Fort Sumter NM would remain subject to the same conditions currently found at the site. Projected sea-level rise, coupled with natural coastal processes, could result in the loss of saltmarsh wetlands due to increased inundation. Overall, wetlands within the project area would be impacted, and the no-action alternative would contribute to cumulative adverse impacts on wetlands.

Proposed Action/Preferred Alternative

Impacts on wetlands and floodplains were analyzed for the proposed project area, which includes intertidal estuarine wetlands. Portions of the existing riprap are classified as rocky intertidal wetlands. Approximately 0.9 acre of rocky intertidal wetlands, 0.1 acre of emergent salt marsh, and less than 0.1 acre of a sandy intertidal wetland with an unconsolidated bottom (sandy beach) would be permanently impacted by the removal of the rock next to the fort and placement of the rock into open water and construction of the living shoreline. Overall, approximately 1 acre of wetlands would be permanently altered by the proposed action. However, the breakwater construction would create approximately 1.2 acres of rocky intertidal wetland habitat, and construction of the living shoreline would create approximately 1.6 acres of saltmarsh habitat. The development of saltmarsh in the project area would create approximately 1.64 acres of saltmarsh wetland habitat at Fort Sumter NM, providing long-term beneficial impacts. This would increase overall wetland acreage in the project area by 1.8 acres, or a 56 percent increase in wetlands and provide additional native vegetation and habitat. Current saltmarsh habitat at Fort Sumter could be lost in the future to natural coastal processes and sea-level rise; so increasing this habitat availability at Fort Sumter would ensure that this wetland type is not lost from the site.

In addition, the development of the breakwater and living shoreline would convert approximately 1.7 acres of subtidal habitat in the project area into estuarine intertidal salt marsh. The placement of fill material and planting of native saltmarsh vegetation would permanently alter this submerged habitat, converting this area from deepwater habitat to intertidal estuarine saltmarsh, as noted above. Wetlands in and surrounding the project area would also be subject to temporary adverse impacts due to construction, which could increase turbidity, but the NPS would implement appropriate BMPs, as identified in NPS Procedural Manual 77-1: *Wetland Protection* (NPS 2016b). Impacts would be anticipated to be negligible and temporary.

The national monument consulted with the NPS Water Resources Division on the potential wetland and floodplain impacts and determined that the proposed action is considered an excepted action under Director's Order 77-1, 4.2.1.7, *Maintenance, repair, or renovation* (Kevin Noon, personal communication). The new riprap wall would be placed in nearshore submerged habitat, and creation of the living shoreline would result in the development of a native salt marsh. This provides beneficial habitat for marine and estuarine life, such as fish, birds, and small mammal populations. In addition, the creation of a living shoreline would provide protection of the fort walls from wave action, and filter nutrients from the water among other benefits. The proposed project would result in the addition of approximately 1.8 acres of new wetland habitat, with no net loss of wetland habitat. Overall, impacts on wetlands and floodplains in the project area would be long-term beneficial, but short-term impacts would occur to wetlands and the floodplain during the construction period.

Cumulative Impacts

There is one past action (channel harbor deepening project) and one reasonably foreseeable future action (dock decking replacement) that have the potential to impact wetlands in the project area. The channel harbor deepening project had the potential for temporary impacts on wetlands as a result of decreased water quality during dredging operations. The potential replacement of dock decking at Fort Sumter would have short-term adverse impacts on wetlands during the replacement of the existing pilings. Construction could result in increased turbidity during piling installation. The preferred alternative would have long-term beneficial impacts on wetlands from the creation of wetland habitat within the living shoreline. Therefore, the preferred alternative would not contribute to potential adverse cumulative impacts when considered with past, present, and reasonably foreseeable future projects.

Conclusion

The proposed action would result in the conversion of subtidal habitat and intertidal wetland habitat to intertidal saltmarsh wetlands and rocky intertidal wetlands within the project area. The existing riprap wall at the base of the fort foundation walls would be moved into open water, impacting rocky shoreline habitat. The addition of a living shoreline would increase saltmarsh wetlands and provide habitat for both marine and estuarine species. Although approximately 1 acre of wetlands would be permanently lost, approximately 2.8 acres of wetland would be created by the project, resulting in a net gain of wetland habitat and long-term beneficial impacts. Construction would temporarily increase turbidity in the project area which could impact wetland habitat, but an effort would be made to minimize these impacts using BMPs outlined in Procedural Manual 77-1: *Wetland Protection* (NPS 2016b). Overall, wetlands within the project area would increase by 1.8 acres, and the proposed action would not contribute to the adverse impacts on cumulative impacts on wetlands.

WATER RESOURCES

To identify the potential impacts of the no-action alternative and the proposed action on water quality at Fort Sumter NM, current water quality conditions in the project area and surrounding the fort were considered. Construction activities have the potential to cause direct and indirect impacts on water quality in the project area.

Methodology

The potential for changes in water quality were assessed by evaluating the potential for changes in water quality parameters under the no-action alternative and proposed action. The analysis also considered the effect of the existing conditions and the construction and implementation of the proposed action on the water quality.

No-Action Alternative

Under the no-action alternative, no construction activities would be undertaken associated with the breakwater. Water quality parameters at Fort Sumter would remain the same. Currently, water quality impacts in the vicinity of the fort are negligible and temporary in nature.

Cumulative Impacts

There is one past project and one current cumulative project that have the potential to impact water quality. The Charleston Harbor Channel deepening project would have increased turbidity during dredging operations, which could have impacted water quality. However, these impacts would have been temporary and would have been reduced by the use of BMPs. The conversion of the tour boats that visit Fort Sumter NM to diesel electric motors could reduce the diesel emissions into the water, providing a long-term benefit to water quality. Water quality would remain unchanged under the no-action alternative; therefore, it would not contribute to cumulative impacts when considered with past, present, and reasonably foreseeable future projects occurring at Fort Sumter NM.

Conclusion

The no-action alternative would not impact water quality in the proposed project area and current conditions would continue at Fort Sumter NM. Water quality at the fort is currently impacted by larger regional sources, and these sources would continue. The no-action alternative would not contribute to cumulative impacts on water quality.

Proposed Action/Preferred Alternative

The proposed breakwater rehabilitation and construction of a living shoreline would have both short- and long-term impacts on water quality in the project area. Construction activities associated with the proposed action would result in short-term adverse impacts on water quality. The process of moving the existing riprap into the open water would disturb sediments and increase turbidity. BMPs would be used to minimize impacts on water quality from construction, but short-term adverse impacts would still occur.

Wetlands function as a natural filter, decreasing sedimentation and nutrients from the water and improving water quality (Dorr et al. 2012). Once the living shoreline is established it would result in long-term benefits to water quality through the reduction in sedimentation and removal of contaminants and nutrients. Wetlands provide critical ecosystem services; it has been shown that wetlands can reduce nitrogen and phosphorus levels by up to 60 percent (Yarrow 2009). Native wetland vegetation helps to retain sediments and other particulates (Dorr et al. 2012). This would have a long-term beneficial impact on water quality.

Cumulative Impacts

The proposed action would result in short-term adverse impacts on water quality during construction but long-term beneficial impacts through the creation of a living shoreline. Past, present, and reasonably foreseeable future actions would have the potential to impact water quality at Fort Sumter NM. The Charleston Harbor Channel deepening project would have increased turbidity during dredging operations, which could have impacted water quality. However, these impacts would have been temporary and would have been reduced by the use of BMPs. The conversion of the tour boats that visit Fort Sumter NM to diesel electric motors could reduce the diesel emissions into the water, providing a long-term benefit to water quality. The proposed action would result in long-term benefits to water quality and would contribute to cumulative impacts when considered with past, present, and reasonably foreseeable future projects occurring at Fort Sumter NM.

Conclusion

Short-term adverse impacts on water quality would occur during construction activities due to increased turbidity from movement of the riprap. These impacts would be minimized through the use of BMPs to reduce sediment disturbance. In the long term, the development of the living shoreline would retain sediments and other particulates, improving water quality at Fort Sumter. The beneficial impacts of the proposed action would contribute to the cumulative impacts on water quality.

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CHAPTER 5: CONSULTATION AND COORDINATION

This chapter summarizes the process undertaken by the NPS to contact individuals, agencies, and organizations for information to assist in identifying important issues, analyzing impacts, and for review and comment on the Proposed Rehabilitation of the Breakwater Environmental Assessment. Throughout the planning process, Fort Sumter NM staff encouraged elected officials, culturally associated American Indian tribes and groups, partners in other agencies, national monument visitors, and private citizens to participate in this planning effort, as summarized below.

THE SCOPING PROCESS

Scoping is the process of determining the scope of issues to be addressed in an environmental document. It includes internal scoping with NPS staff, consultation with all interested parties and any agency with jurisdiction by law or with special expertise, and the general public.

Internal Scoping

Internal scoping discussions for the proposed breakwater rehabilitation at Fort Sumter NM started in October 2018 among staff from Fort Sumter NM and the NPS Southeast Regional Office. Internal scoping included determining the purpose and need for the project and developing alternatives.

Public Scoping

The public was notified of the Proposed Breakwater Rehabilitation Project through a news release on November 16, 2018 posted in the *Charleston Post and Courier*, and a newsletter distributed via mail. The press release was also posted on Fort Sumter NM's website and on social media. The press release notified all interested parties of the availability of the scoping newsletter in the Fort Moultrie and Fort Sumter Visitor Centers and on the NPS Planning, Environment, and Public Comment (PEPC) website. The news release also announced the beginning of the 30-day scoping comment period. A copy of the newsletter is provided in appendix A.

The public was encouraged to submit their comments on the Breakwater Rehabilitation Project electronically through the NPS PEPC website and by mailing comments to the national monument. The national monument received one correspondence from an individual in support of the project.

Agency Scoping

Agency scoping was held in an effort to obtain early input on the scope of issues to be addressed in this EA. Scoping letters were sent to SC DNR, NOAA Fisheries, USFWS, USACE Charleston District, and the US Coast Guard and the South Carolina Department of Health and Environmental Control, Division of Ocean and Coastal Management (SCDHEC-OCRM). Agency scoping consultation letters are provided in appendix A.

Endangered Species Act Section 7 Consultation

In accordance with federal and state requirements for special-status species, scoping letters were mailed to state and federal agencies on November 15, 2018. These letters provided information on the proposed project and requested information on any federally or state-listed species that could be impacted by the proposed project. A response to the scoping letter was received from the USFWS on

November 29, 2018 indicating that the USFWS has no objections to the construction of the breakwater if proper time-of-year restrictions are observed for construction to protect the West Indian manatee. A letter from SC DNR was received on December 17, 2018 indicating the occurrences of listed species in the vicinity of the project area, including the West Indian manatee, shortnose sturgeon, Atlantic sturgeon, and loggerhead sea turtle. An email from NOAA Fisheries was received on February 21, 2019 indicating that the project would have an impact on EFH due to the loss of sub-tidal non-vegetated flats by either fill or conversion to marine emergent wetlands. NOAA Fisheries also encouraged the use of living shorelines and recognized that this would result in habitat tradeoffs. Copies of the agency scoping letters and the USFWS and SC DNR responses are provided in appendix A.

Section 106 of the National Historic Preservation Act Consultation

Section 106 of the National Historic Preservation Act requires that federal agencies take into account the effect of any proposed undertakings on properties that are listed or eligible for listing in the National Register.

The NPS sent a letter to the State Historic Preservation Office on November 15, 2018, initiating consultation under Section 106 and requesting any information available on the area potentially affected by the proposed project. Letters were also sent to the Advisory Council on Historic Preservation and Tribal Historic Preservation Officers of the Catawba Indian Nation, Eastern Band of Cherokee Indians, and Seminole Tribe of Florida. A response was received from the Catawba Indian Nation on December 6, 2018 noting no concerns with regard to traditional cultural properties, sacred sites, or Native American archeological sites within the boundary of the proposed project area. A letter was received from the South Carolina State Historic Preservation Office on December 18, 2018 providing comments and questions on the 2004 *Submerged Cultural Resources Study* (Russell 2004). The letter also recommended continued consultation as plans for the proposed project were developed. Copies of agency letters and responses are provided in appendix A. Any changes identified for the project as a result of the consultation will be incorporated into the project as necessary.

Coastal Zone Management Act Consultation

The Coastal Zone Management Act (CZMA) of 1972 was enacted by Congress to balance the competing demands of growth and development with the need to protect coastal resources (16 USC 1451 et seq.). The act encourages states to conduct self-evaluations of their coastal management programs every five years to assess significant changes in their coastal resources, management practices, critical needs, and priorities for enhancement. The SCDHEC-OCRM administers the Federal CZMA and the South Carolina Coastal Management Act (S.C. Code Ann. Section 48-39-10 et seq.).

The NPS initiated consultation with the SCDHEC-OCRM on March 1, 2019. The letter provided information on the proposed project and requested comments on the proposed project. Consultation with SCDHEC-OCRM is ongoing, and NPS is in the process of preparing the draft Federal Consistency Assessment for consistency review by the South Carolina Coastal Zone Management Program.

CHAPTER 6: MITIGATION MEASURES AND PERMIT REQUIREMENTS

This chapter outlines the potential permit requirements for the proposed action alternative, as well as the mitigation measures that would be put in place to reduce impacts to resources as a result of the project implementation.

PERMIT REQUIREMENTS

Construction of the proposed breakwater and living shoreline would require permits from federal and state agencies. It is anticipated that the following permits may be required as part of the project implementation:

- Section 404 of the Clean Water Act (CWA)
- Section 20 of the Rivers and Harbors Act
- Water Quality Certificate under Section 401 of the CWA
- Critical Area Permit

Permits would be obtained following design of the proposed breakwater and living shoreline but prior to the start of any construction activities.

MITIGATION MEASURES

Mitigation measures would be put into place to minimize impacts to natural and cultural resources. Permit conditions associated with the above listed permits as well as agency consultation would provide a basis for mitigation measures.

West Indian Manatee: In order to reduce potential impacts on the West Indian manatee, the following measures would be employed as recommended by the USFWS:

- Instruct personnel associated with the project of the potential presence of manatees and the need to avoid collisions with manatees. Construction personnel must monitor water-related activities for the presence of manatees during May 15 – October 15.
- Advise construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973.
- Any siltation barriers used during the project should be made of material in which manatees cannot become entangled, must be properly secured, and regularly monitored to avoid manatee entrapment.
- Vessels associated with the project shall operate at “no wake/idle” speeds at all times while in the construction area and while in water where the draft of the vessel provides less than a 4-foot clearance from the bottom. Vessels will follow routes of deep water whenever possible.
- If manatee(s) are seen within 100 yards of the active construction area appropriate precautions would be implemented to ensure protection of the manatee. These precautions would include operation of all moving equipment no closer than 50 feet to a manatee. Operation of any equipment closer than 50 feet to a manatee would necessitate immediate

shutdown of that equipment. Activities will not resume until the manatee(s) has departed the project area of its own volition.

- Any collision with and/or injury to a manatee should be reported immediately to Mr. Jim Valade of the USFWS, North Florida Field Office, at (904) 731-3116.

Essential Fish Habitat: In their February 22, 2019 response letter, NOAA Fisheries noted that they encourage the use of living shorelines for shoreline stabilization but suggested incorporating breaks in the breakwater to avoid escape routes for any aquatic organisms trapped behind the breakwater. Natural voids in the breakwater would allow for escape of trapped organisms.

Cultural Resources: Comments and recommendations from the State Underwater Archaeologist, James Spirek were provided in the December 18, 2018 response letter received from the South Carolina State Historic Preservation Office. These comments included the following recommendations based on the 2004 *Submerged Cultural Resources Study* (Russell 2004):

- Inspect areas around Anomalies A and J for objects of archaeological/historical significance during removal of riprap.
- Take care around remnants of the wharf, tower, and walkway foundation, including Anomalies B, C, E, and F.
- Avoid damage to Anomalies G and H (purported cannon carriage components) and the marine boiler.

LIST OF PREPARERS AND CONSULTANTS

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Southeast Region

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Paula Ogden-Muse, Acting PIO, Chief of Interpretation

EA Engineering, Science, and Technology, Inc., PBC

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Tracy Layfield, Senior Scientist
Sarah Koser, Senior Scientist
Jayne Aaron, Architectural Historian
Kathryn Cerny-Chipman, Environmental Scientist

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APPENDIX A

AGENCY CONSULTATION AND SCOPING

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United States Department of the Interior

NATIONAL PARK SERVICE

Fort Sumter National Monument
1214 Middle Street
Sullivan's Island, South Carolina 29482
(843) 883-3123



Fort Moultrie
1214 Middle Street
Sullivan's Island, South Carolina

Charles Pinckney National Historic Site
1254 Long Point Road
Mt. Pleasant, South Carolina

November 15, 2018

Mr. Reid Nelson
Director
Office of Federal Agency Programs
Advisory Council on Historic Preservation
401 F Street NW, Suite 308
Washington, DC 20001

RE: Proposed Project to Rehabilitate the Breakwater at Fort Sumter National Monument

Dear Mr. Nelson:

The National Park Service (NPS) has initiated consultation with the South Carolina Department of Archives and History on the rehabilitation of the breakwater at Fort Sumter National Monument, an undertaking which may have an effect upon historic properties under Section 106 of the National Historic Preservation Act (NHPA).

Fort Sumter is currently subject to high wave energy striking the brick walls of the fort, causing erosion to the structure and mortar on the wall. In addition, there is also a forecasted sea level rise that will pose a threat to the fort in years to come.

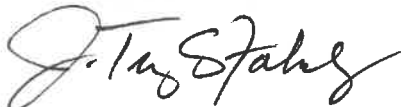
The proposed project would consist of moving the existing 1,825 tons of armor stone riprap that are currently positioned against the exterior foundation walls of Fort Sumter approximately 60 feet out into the water and away from the brick walls to create a lower protective breakwater structure. Additional stone would be placed if needed to complete the breakwater. The breakwater would run along the left face, right face, and right flank of the fort to provide protection from wave action. A living shoreline would be established between the breakwater and the fort's walls (Figure 2). This area would be backfilled with sand and planted with native vegetation including *Spartina patens* and *S. alterniflora*. The living shoreline would create a natural habitat for both terrestrial and aquatic life. The construction of the breakwater and living shoreline would provide protection from wave action and allow for maintenance to be performed

on the forts exterior walls. A submerged cultural resources survey of the proposed breakwater construction project area was completed by the NPS Submerged Resources Center in 2004. It is anticipated that no further archeological survey work will be required for this project.

The NPS is now preparing an Environmental Assessment (EA) to evaluate impacts specific to this project, in accordance with the National Environmental Policy Act of 1969 (NEPA). The NPS intends to coordinate the Section 106 process with the NEPA per the Advisory Council on Historic Preservation's procedures found at 36 Code of Federal Regulations 800.8. The NPS plans to consult the public per 36 CFR 800.3(e) during a public scoping period through our Planning, Environment, and Public Comment website – <http://parkplanning.nps.gov>. It is anticipated that these outreach efforts will accommodate both the NEPA and Section 106 process.

We are happy to invite the active participation of the Council in the section 106 process. Please indicate whether you wish to do so or have any questions about the undertaking by contacting me at the address listed above. Thank you for your assistance with this project. If you have any questions, please contact me at 843-732-5014 or Tracy_Stakely@nps.gov.

Sincerely,

A handwritten signature in black ink, reading "J. Tracy Stakely". The signature is fluid and cursive, with the first name "J." and last name "Stakely" clearly legible.

J. Tracy Stakely
Superintendent



United States Department of the Interior

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Fort Moultrie
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Charles Pinckney National Historic Site
1254 Long Point Road
Mt. Pleasant, South Carolina

November 15, 2018

Ms. Caitlin Rogers
Tribal Historic Preservation Officer
Catawba Indian Nation
1536 Tom Steven Road
Rock Hill, SC 29730

RE: Proposed Project to Rehabilitate the Breakwater at Fort Sumter National Monument

Dear Ms. Rogers:

The National Park Service (NPS) is proposing to rehabilitate the breakwater at Fort Sumter National Monument located in the Charleston Harbor, South Carolina (Figure 1). The National Park Service is preparing an Environmental Assessment (EA), in accordance with the National Environmental Policy Act (NEPA), to identify and evaluate potential impacts to park resources and to incorporate public comment. In accordance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR Part 800, we are providing information for your review regarding the above-referenced project. In addition, the process and documentation required for the preparation of the EA will be used to comply with Section 106 of the NHPA.

Fort Sumter is currently subject to high wave energy striking the brick walls of the fort, causing erosion to the structure and mortar on the wall. In addition, there is also a forecasted sea level rise that will pose a threat to the fort in years to come.

The proposed project would consist of moving the existing 1,825 tons of armor stone riprap that are currently positioned against the exterior foundation walls of Fort Sumter approximately 60 feet out into the water and away from the brick walls to create a lower protective breakwater structure. Additional stone would be placed if needed to complete the breakwater. The breakwater would run along the left face, right face, and right flank of the fort to provide

protection from wave action. A living shoreline would be established between the breakwater and the fort's walls (Figure 2). This area would be backfilled with sand and planted with native vegetation including *Spartina patens* and *S. alterniflora*. The living shoreline would create a natural habitat for both terrestrial and aquatic life. The construction of the breakwater and living shoreline would provide protection from wave action and allow for maintenance to be performed on the forts exterior walls.

Federal regulations for the implementation of Section 106 of the NHPA of 1966, as amended, require consultation with federally recognized Native American tribes (36 CFR 800.2) on a government-to-government basis, as specified in Executive Order 13175. NPS administrators are committed to honoring in good faith its full obligations and responsibilities toward the sovereign, federally recognized Indian tribes under all United States laws, regulations, and policies. As part of government to government relations and my responsibility to "make a reasonable and good faith effort to identify Indian tribes...that shall be consulted in the 106 process," I invite you to consult with the park regarding the proposed breakwater rehabilitation project.

We are happy to invite the active participation of the Catawba Indian Nation in the section 106 process. Please indicate whether you wish to do so or have any questions about the undertaking by contacting me at the address listed above. Thank you for your assistance with this project. If you have any questions, please contact me at 843-732-5014 or Tracy_Stakely@nps.gov.

Sincerely,

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J. Tracy Stakely
Superintendent



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Mt. Pleasant, South Carolina

November 15, 2018

Mr. Russell Townsend
Tribal Historic Preservation Officer
Eastern Band of Cherokee Indians
Qualla Boundary Reservation
P.O. Box 455
Cherokee, NC 28719

RE: Proposed Project to Rehabilitate the Breakwater at Fort Sumter National Monument

Dear Mr. Townsend:

The National Park Service (NPS) is proposing to rehabilitate the breakwater at Fort Sumter National Monument located in the Charleston Harbor, South Carolina (Figure 1). The National Park Service is preparing an Environmental Assessment (EA), in accordance with the National Environmental Policy Act (NEPA), to identify and evaluate potential impacts to park resources and to incorporate public comment. In accordance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR Part 800, we are providing information for your review regarding the above-referenced project. In addition, the process and documentation required for the preparation of the EA will be used to comply with Section 106 of the NHPA.

Fort Sumter is currently subject to high wave energy striking the brick walls of the fort, causing erosion to the structure and mortar on the wall. In addition, there is also a forecasted sea level rise that will pose a threat to the fort in years to come.

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We are happy to invite the active participation of the Eastern Band of Cherokee Indians in the section 106 process. Please indicate whether you wish to do so or have any questions about the undertaking by contacting me at the address listed above. Thank you for your assistance with this project. If you have any questions, please contact me at 843-732-5014 or Tracy_Stakely@nps.gov.

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J. Tracy Stakely
Superintendent



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November 15, 2018

David Bernhart
Assistant Regional Administrator
NOAA Fisheries
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

RE: Proposed Project to Rehabilitate the Breakwater at Fort Sumter National Monument

Dear Mr. Bernhart:

The National Park Service (NPS) is proposing to rehabilitate the breakwater at Fort Sumter National Monument located in the Charleston Harbor, South Carolina (Figure 1). The National Park Service is preparing an Environmental Assessment, in accordance with the National Environmental Policy Act (NEPA), to identify and evaluate potential impacts to park resources and to incorporate public comment.

Fort Sumter is currently subject to high wave energy striking the brick walls of the fort, causing erosion to the structure and mortar on the wall. In addition, there is also a forecasted sea level rise that will pose a threat to the fort in years to come.

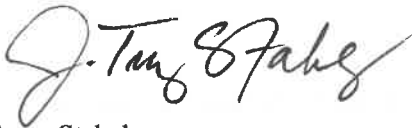
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natural habitat for both terrestrial and aquatic life. The construction of the breakwater and living shoreline would provide protection from wave action and allow for maintenance to be performed on the forts exterior walls.

In accordance with Section 7 of the Endangered Species Act and the Magnuson-Stevens Fishery Conservation and Management Act, we are informing you of this proposed project to request consultation on data you have on the proposed or listed species and/or their critical habitat and essential fish habitat that could potentially be affected by this project and request your comments on the proposed action.

Your response within 30 days from the date of receipt of this letter would be greatly appreciated. Please forward written comments to me at the address listed above. Thank you for your assistance with this project. If you have any questions, please contact me at 843-732-5014 or Tracy_Stakely@nps.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Tracy Stakely", written in a cursive style.

J. Tracy Stakely
Superintendent



United States Department of the Interior

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November 15, 2018

Stacie Crowe
South Carolina Department of Natural Resources
Coastal Environmental Coordinator
Region 4 Office of Environmental Programs
PO Box 12559
Charleston, SC 29422

RE: Proposed Project to Rehabilitate the Breakwater at Fort Sumter National Monument

Dear Ms. Crowe:

The National Park Service (NPS) is proposing to rehabilitate the breakwater at Fort Sumter National Monument located in the Charleston Harbor, South Carolina (Figure 1). The National Park Service is preparing an Environmental Assessment, in accordance with the National Environmental Policy Act (NEPA), to identify and evaluate potential impacts to park resources and to incorporate public comment.

Fort Sumter is currently subject to high wave energy striking the brick walls of the fort, causing erosion to the structure and mortar on the wall. In addition, there is also a forecasted sea level rise that will pose a threat to the fort in years to come.

The proposed project would consist of moving the existing 1,825 tons of armor stone riprap that are currently positioned against the exterior foundation walls of Fort Sumter approximately 60 feet out into the water and away from the brick walls to create a lower protective breakwater structure. Additional stone would be placed if needed to complete the breakwater. The breakwater would run along the left face, right face, and right flank of the fort to provide protection from wave action. A living shoreline would be established between the breakwater and the fort's walls (Figure 2). This area would be backfilled with sand and planted with native vegetation including *Spartina patens* and *S. alterniflora*. The living shoreline would create a

natural habitat for both terrestrial and aquatic life. The construction of the breakwater and living shoreline would provide protection from wave action and allow for maintenance to be performed on the forts exterior walls.

With this letter, we are requesting consultation on State Rare, Threatened, and Endangered Species that could potentially be affected by this project and request your comments on the proposed action. We are also contacting the U.S. Fish and Wildlife Service and National Marine Fisheries Service for federally listed species.

Your response within 30 days from the date of receipt of this letter would be greatly appreciated. Please forward written comments to me at the address listed above. Thank you for your assistance with this project. If you have any questions, please contact me at 843-732-5014 or Tracy_Stakely@nps.gov.

Sincerely,

A handwritten signature in black ink, reading "J. Tracy Stakely". The signature is fluid and cursive, with the first name "J." and last name "Stakely" clearly legible.

J. Tracy Stakely
Superintendent



United States Department of the Interior

NATIONAL PARK SERVICE

Fort Sumter National Monument
1214 Middle Street
Sullivan's Island, South Carolina 29482
(843) 883-3123



Fort Moultrie
1214 Middle Street
Sullivan's Island, South Carolina

Charles Pinckney National Historic Site
1254 Long Point Road
Mt. Pleasant, South Carolina

November 15, 2018

Dr. Paul Backhouse
Tribal Historic Preservation Officer
Seminole Tribe of Florida
30290 Josie Billie Highway, PMB 1004
Clewiston, FL 33440

RE: Proposed Project to Rehabilitate the Breakwater at Fort Sumter National Monument

Dear Dr. Backhouse:

The National Park Service (NPS) is proposing to rehabilitate the breakwater at Fort Sumter National Monument located in the Charleston Harbor, South Carolina (Figure 1). The National Park Service is preparing an Environmental Assessment (EA), in accordance with the National Environmental Policy Act (NEPA), to identify and evaluate potential impacts to park resources and to incorporate public comment. In accordance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR Part 800, we are providing information for your review regarding the above-referenced project. In addition, the process and documentation required for the preparation of the EA will be used to comply with Section 106 of the NHPA.

Fort Sumter is currently subject to high wave energy striking the brick walls of the fort, causing erosion to the structure and mortar on the wall. In addition, there is also a forecasted sea level rise that will pose a threat to the fort in years to come.

The proposed project would consist of moving the existing 1,825 tons of armor stone riprap that are currently positioned against the exterior foundation walls of Fort Sumter approximately 60 feet out into the water and away from the brick walls to create a lower protective breakwater structure. Additional stone would be placed if needed to complete the breakwater. The breakwater would run along the left face, right face, and right flank of the fort to provide

protection from wave action. A living shoreline would be established between the breakwater and the fort's walls (Figure 2). This area would be backfilled with sand and planted with native vegetation including *Spartina patens* and *S. alterniflora*. The living shoreline would create a natural habitat for both terrestrial and aquatic life. The construction of the breakwater and living shoreline would provide protection from wave action and allow for maintenance to be performed on the forts exterior walls.

Federal regulations for the implementation of Section 106 of the NHPA of 1966, as amended, require consultation with federally recognized Native American tribes (36 CFR 800.2) on a government-to-government basis, as specified in Executive Order 13175. NPS administrators are committed to honoring in good faith its full obligations and responsibilities toward the sovereign, federally recognized Indian tribes under all United States laws, regulations, and policies. As part of government to government relations and my responsibility to "make a reasonable and good faith effort to identify Indian tribes...that shall be consulted in the 106 process," I invite you to consult with the park regarding the proposed breakwater rehabilitation project.

We are happy to invite the active participation of the Seminole Tribe of Florida in the section 106 process. Please indicate whether you wish to do so or have any questions about the undertaking by contacting me at the address listed above. Thank you for your assistance with this project. If you have any questions, please contact me at 843-732-5014 or Tracy_Stakely@nps.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Tracy Stakely". The signature is fluid and cursive, with the first name "J. Tracy" and last name "Stakely" clearly distinguishable.

J. Tracy Stakely
Superintendent



United States Department of the Interior

NATIONAL PARK SERVICE
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Fort Moultrie
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Charles Pinckney National Historic Site
1254 Long Point Road
Mt. Pleasant, South Carolina

November 15, 2018

Dr. Eric Emerson
State Historic Preservation Office
South Carolina Department of Archives & History
8301 Parklane Road
Columbia, SC 29223-4905

RE: Proposed Project to Rehabilitate the Breakwater at Fort Sumter National Monument

Dear Dr. Emerson:

The National Park Service (NPS) is proposing to rehabilitate the breakwater at Fort Sumter National Monument located in the Charleston Harbor, South Carolina (Figure 1). The National Park Service is preparing an Environmental Assessment, in accordance with the National Environmental Policy Act (NEPA), to identify and evaluate potential impacts to park resources and to incorporate public comment.

Fort Sumter is currently subject to high wave energy striking the brick walls of the fort, causing erosion to the structure and mortar on the wall. In addition, there is also a forecasted sea level rise that will pose a threat to the fort in years to come.

The proposed project would consist of moving the existing 1,825 tons of armor stone riprap that are currently positioned against the exterior foundation walls of Fort Sumter approximately 60 feet out into the water and away from the brick walls to create a lower protective breakwater structure. Additional stone would be placed if needed to complete the breakwater. The breakwater would run along the left face, right face, and right flank of the fort to provide protection from wave action. A living shoreline would be established between the breakwater and the fort's walls (Figure 2). This area would be backfilled with sand and planted with native vegetation including *Spartina patens* and *S. alterniflora*. The living shoreline would create a natural habitat for both terrestrial and aquatic life. The construction of the breakwater and living

shoreline would provide protection from wave action and allow for maintenance to be performed on the forts exterior walls.

The purpose of this letter is to inform you of the proposed project and initiate communication with your office regarding our federal obligation under Section 106 of the National Historic Preservation Act (NHPA). A submerged cultural resources survey of the proposed breakwater construction project area was completed by the NPS Submerged Resources Center in 2004. It is anticipated that no further archeological survey work will be required for this project. The survey report has been appended to this letter. We would also like to request any data or information you may have on resources potentially affected by the proposed project. We look forward to continuing the NHPA Section 106 consultation process with you as we concurrently work through our NEPA process.

Your response within 30 days from the date of receipt of this letter would be greatly appreciated. Please forward written comments to me at the address listed above. Thank you for your assistance with this project. If you have any questions, please contact me at 843-732-5014 or Tracy_Stakely@nps.gov.

Sincerely,

A handwritten signature in black ink, reading "J. Tracy Stakely". The signature is fluid and cursive, with the first name "J." and last name "Stakely" clearly legible.

J. Tracy Stakely
Superintendent



United States Department of the Interior

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Charles Pinckney National Historic Site
1254 Long Point Road
Mt. Pleasant, South Carolina

November 15, 2018

Lt. Col. Jeffrey Palazzini
Commander
U.S. Army Corps of Engineers
Charleston District
69A Hagood Avenue
Charleston, SC 29403

RE: Proposed Project to Rehabilitate the Breakwater at Fort Sumter National Monument

Dear Lt. Col Palazzini:

The National Park Service (NPS) is proposing to rehabilitate the breakwater at Fort Sumter National Monument located in the Charleston Harbor, South Carolina (Figure 1). The National Park Service is preparing an Environmental Assessment, in accordance with the National Environmental Policy Act (NEPA), to identify and evaluate potential impacts to park resources and to incorporate public comment.

Fort Sumter is currently subject to high wave energy striking the brick walls of the fort, causing erosion to the structure and mortar on the wall. In addition, there is also a forecasted sea level rise that will pose a threat to the fort in years to come.

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natural habitat for both terrestrial and aquatic life. The construction of the breakwater and living shoreline would provide protection from wave action and allow for maintenance to be performed on the forts exterior walls.

As part of the NEPA process, we are requesting consultation with you for this project, as we are proposing construction of a breakwater and living shoreline, resulting in construction within a waterway.

Your response within 30 days from the date of receipt of this letter would be greatly appreciated. Please forward written comments to me at the address listed above. Thank you for your assistance with this project. If you have any questions, please contact me at 843-732-5014 or Tracy_Stakely@nps.gov.

Sincerely,

A handwritten signature in black ink, reading "J. Tracy Stakely". The signature is fluid and cursive, with the first letters of each word being capitalized and prominent.

J. Tracy Stakely
Superintendent



United States Department of the Interior

NATIONAL PARK SERVICE

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Sullivan's Island, South Carolina 29482
(843) 883-3123



Fort Moultrie
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Sullivan's Island, South Carolina

Charles Pinckney National Historic Site
1254 Long Point Road
Mt. Pleasant, South Carolina

November 15, 2018

Commander Matt A. Bournonville
U.S. Coast Guard
Charleston Base
105 Register Street
North Charleston, SC 29405

RE: Proposed Project to Rehabilitate the Breakwater at Fort Sumter National Monument

Dear Commander Bournonville:

The National Park Service (NPS) is proposing to rehabilitate the breakwater at Fort Sumter National Monument located in the Charleston Harbor, South Carolina (Figure 1). The National Park Service is preparing an Environmental Assessment, in accordance with the National Environmental Policy Act (NEPA), to identify and evaluate potential impacts to park resources and to incorporate public comment.

Fort Sumter is currently subject to high wave energy striking the brick walls of the fort, causing erosion to the structure and mortar on the wall. In addition, there is also a forecasted sea level rise that will pose a threat to the fort in years to come.

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shoreline would provide protection from wave action and allow for maintenance to be performed on the forts exterior walls.

As part of the NEPA process, we are requesting consultation with you for this project, as we are proposing construction of a breakwater and living shoreline, resulting in construction within a waterway.

Your response within 30 days from the date of receipt of this letter would be greatly appreciated. Please forward written comments to me at the address listed above. Thank you for your assistance with this project. If you have any questions, please contact me at 843-732-5014 or Tracy_Stakely@nps.gov.

Sincerely,

A handwritten signature in black ink that reads "J. Tracy Stakely". The signature is written in a cursive, flowing style.

J. Tracy Stakely
Superintendent



United States Department of the Interior

NATIONAL PARK SERVICE
Fort Sumter National Monument
1214 Middle Street
Sullivan's Island, South Carolina 29482
(843) 883-3123



Fort Moultrie
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Charles Pinckney National Historic Site
1254 Long Point Road
Mt. Pleasant, South Carolina

November 15, 2018

Tom McCoy
Field Supervisor
U.S. Fish and Wildlife Service
South Carolina Field Office
176 Croghan Spur Road, Suite 200
Charleston, SC 29407

RE: Proposed Project to Rehabilitate the Breakwater at Fort Sumter National Monument

Dear Mr. McCoy:

The National Park Service (NPS) is proposing to rehabilitate the breakwater at Fort Sumter National Monument located in the Charleston Harbor, South Carolina (Figure 1). The National Park Service is preparing an Environmental Assessment, in accordance with the National Environmental Policy Act (NEPA), to identify and evaluate potential impacts to park resources and to incorporate public comment.

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natural habitat for both terrestrial and aquatic life. The construction of the breakwater and living shoreline would provide protection from wave action and allow for maintenance to be performed on the forts exterior walls.

In accordance with Section 7 of the Endangered Species Act, we are informing you of this proposed project to request consultation on data you have on the proposed or listed species or their critical habitat that could potentially be affected by this project and request your comments on the proposed action.

Your response within 30 days from the date of receipt of this letter would be greatly appreciated. Please forward written comments to me at the address listed above. Thank you for your assistance with this project. If you have any questions, please contact me at 843-732-5014 or Tracy_Stakely@nps.gov.

Sincerely,

A handwritten signature in black ink, reading "J. Tracy Stakely". The signature is written in a cursive, flowing style. The "J" is large and loops around the first part of the name. The "Tracy" is written in a smaller, more compact cursive. The "Stakely" is written in a similar cursive style, with a long, sweeping tail on the "y".

J. Tracy Stakely
Superintendent



United States Department of the Interior

NATIONAL PARK SERVICE

Fort Sumter National Monument
1214 Middle Street
Sullivan's Island, South Carolina 29482
(843) 883-3123



Fort Moultrie
1214 Middle Street
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Charles Pinckney National Historic Site
1254 Long Point Road
Mt. Pleasant, South Carolina

March 7, 2019

Chris Stout, Coastal Zone Consistency Section Manager
South Carolina Department of Health and Environmental Control
Office of Coastal Resource Management
1362 McMillan Ave., Suite 400
Charleston, SC 29405

RE: Proposed Project to Rehabilitate the Breakwater at Fort Sumter National Monument

Dear Chris Stout:

The National Park Service (NPS) is proposing to rehabilitate the breakwater at Fort Sumter National Monument located in the Charleston Harbor, South Carolina (Figure 1). The National Park Service is preparing an Environmental Assessment, in accordance with the National Environmental Policy Act (NEPA), to identify and evaluate potential impacts to park resources and to incorporate public comment.

Fort Sumter is currently subject to high wave energy striking the brick walls of the fort, causing erosion to the structure and mortar on the wall. In addition, there is also a forecasted sea level rise that will pose a threat to the fort in years to come.

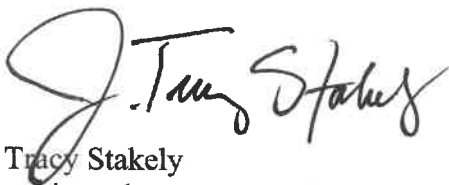
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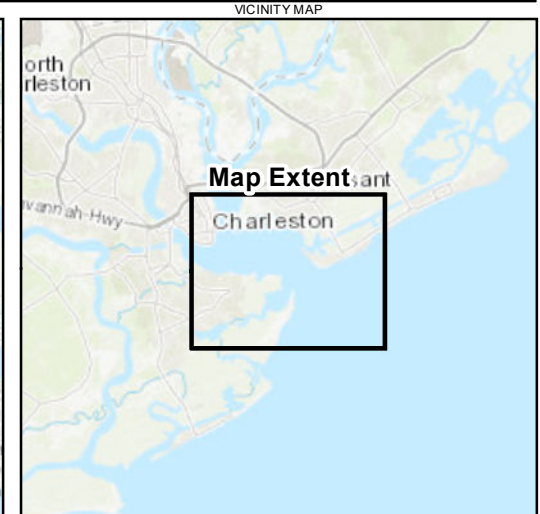
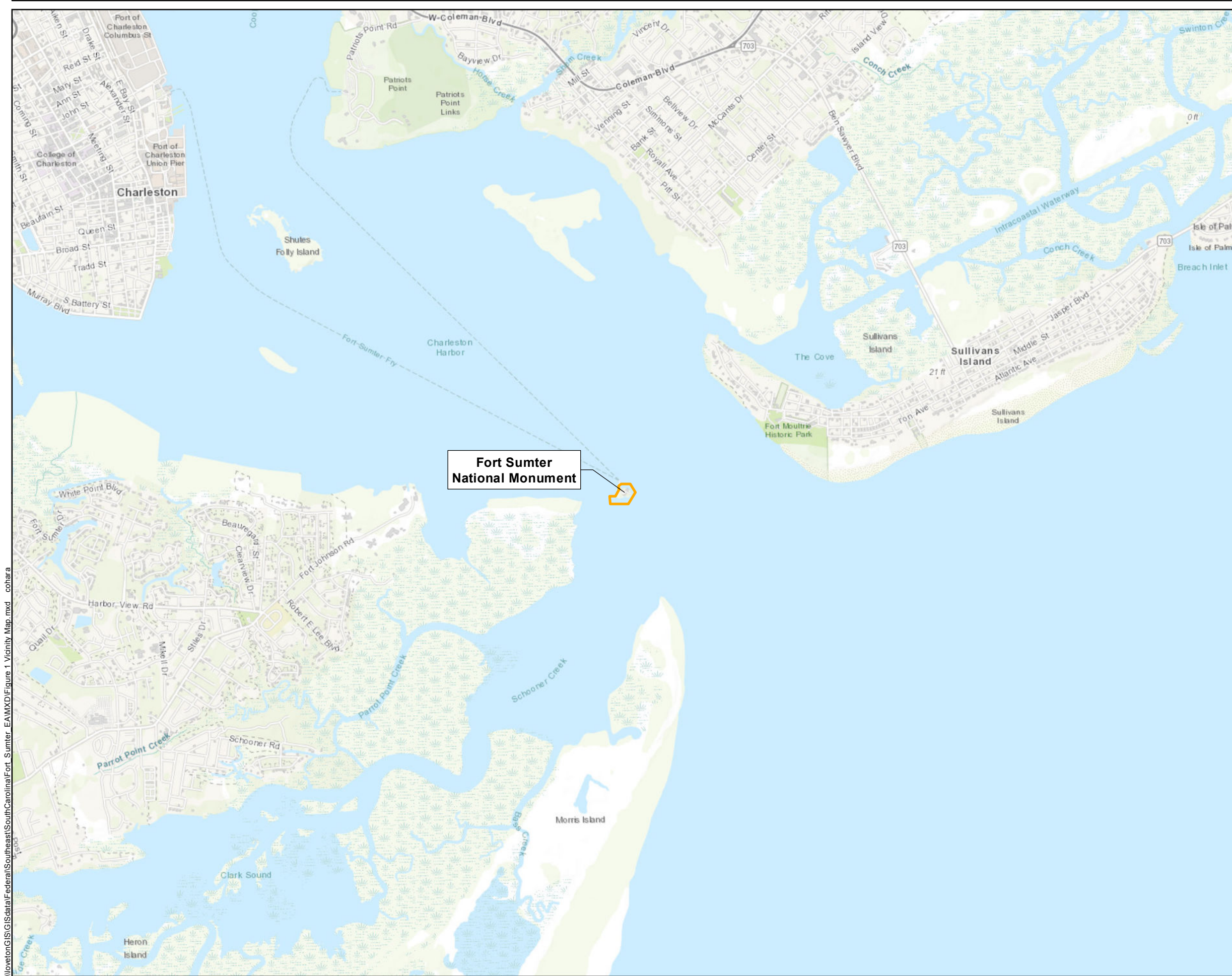
As part of the NEPA process, we are requesting consultation with you for this project, as we are proposing construction of a breakwater and living shoreline, resulting in construction within a waterway and within South Carolina's Coastal Zone.

Your response within 30 days from the date of receipt of this letter would be greatly appreciated. Please forward written comments to me at the address listed above. Thank you for your assistance with this project. If you have any questions, please contact me at 843-732-5014 or Tracy_Stakely@nps.gov.


Sincerely,

A handwritten signature in black ink, reading "J. Tracy Stakely". The signature is written in a cursive, flowing style. The "J" is large and loops around the first part of the name. The "Stakely" part is also cursive and ends with a long, sweeping tail.

J. Tracy Stakely
Superintendent



Legend

 Study Area

Map Date: 11/1/2018
Source: ESRI 2013
Projection: NAD 1983 State Plane South Carolina, US Feet

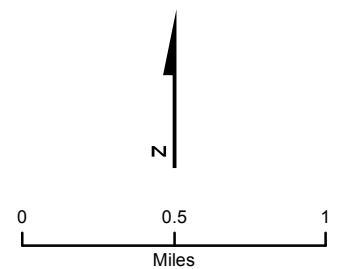
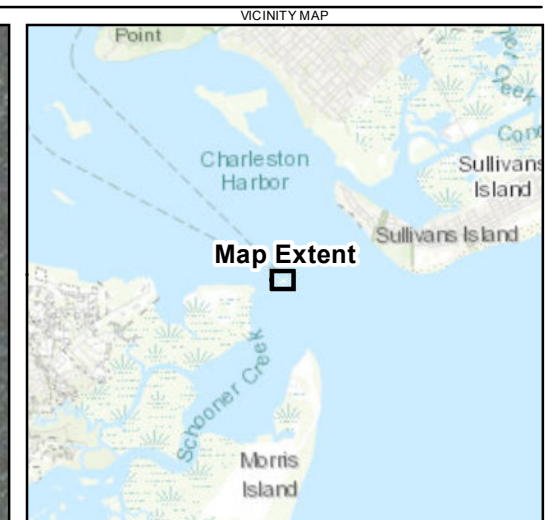


Figure 1
Vicinity Map
Fort Sumter National Monument
Charleston, South Carolina

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Legend

- Living Shoreline
- Proposed Breakwater
- Study Area

Map Date: 11/1/2018
Source: ESRI 2013
Projection: NAD 1983 State Plane South Carolina, US Feet

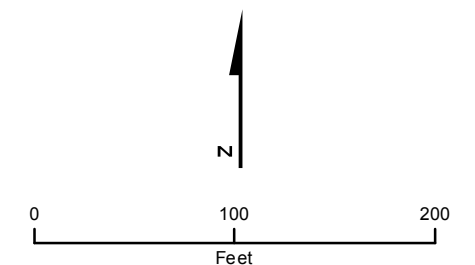


Figure 2
Proposed Project Map
Fort Sumter National Monument
Charleston, South Carolina



United States Department of the Interior

FISH AND WILDLIFE SERVICE

176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407



November 29, 2018

J. Tracy Stakley, Superintendent
National Park Service
Fort Sumter National Monument
1214 Middle Street
Sullivan's Island, South Carolina 29482

Re: Breakwater Rehabilitation at Fort Sumter National Monument, Charleston County, South Carolina, FWS Log No. 2019-TA-0136

Dear Mr. Stakley:

The U.S. Fish and Wildlife Service (Service) has reviewed your request of November 15, 2018, seeking comments on the proposed breakwater construction around the Fort Sumter National Monument located at the entrance of the Charleston Harbor, Charleston County, SC. The National Park Service (NPS) is seeking information on proposed or listed species or their critical habitat that could potentially be affected by this project. In addition, the NPS requests general comments from the Service on the proposed action.

The proposed project would consist of moving the existing armor stone riprap currently positioned against the exterior foundation walls of Fort Sumter approximately 60 feet water ward to create protective breakwater structure. Fort Sumter is subject to wave energy striking the brick walls of the fort, causing erosion to the structure and mortar on the wall. Approximately 1,825 tons of stone will be moved water ward to create the new breakwater. Additional stone will be added to complete the breakwater if needed. A living shoreline will be established between the new breakwater and the Fort's walls. The area would be backfilled with sand and planted with native vegetation including *Spartina patens* and *S. alterniflora*. The construction of the breakwater will create a natural habitat for both terrestrial and aquatic life, provide protection from wave action, and allow easier maintenance to be performed on the Fort's exterior walls.

The Service offers no objection to the construction of the breakwater depending on the time of year the breakwater will be constructed the West Indian manatee (*Trichechus manatus*) may be found in the project area and must be considered. Protected by the Endangered Species Act of 1973 (ESA) manatees inhabit South Carolina estuaries and rivers when water temperatures rise above 68° F, usually between the months of April and November. Therefore, we recommend that the NPS incorporate our Manatee Guidelines (enclosed) into the construction plan. These guidelines are designed to protect the manatee from ongoing activities such as rock placement and in-water equipment operation.

The Service does not object to the creation of a living shoreline between the new breakwater and the walls of Fort Sumter, we encourage activities that will help restore valuable salt marsh

habitat. However, we remain cautious, as there is no comprehensive or detailed plan for creation of the living shoreline. We recommend that the NPS develop a comprehensive plan to describe the features of the living shoreline such as source material, final surface elevations, planting plan/schedule, water control, monitoring, contingency efforts in case of plant failure, etc. This plan should be prepared and submitted to the Service and other resource agencies for review, comment, and approval prior to the project's initiation.

Included with this correspondence is a list of species that have been petitioned for listing under the Endangered Species Act of 1973, as well as Candidate Species. These species are collectively referred to as "At-Risk Species" (ARS). The Service has included a list of the ARS that may occur in Charleston County, South Carolina. Although there are no Federal protections afforded to ARS, please consider including them in your project efforts. Incorporating proactive measures to avoid or minimize harm to ARS may improve their status and assist with precluding the need to list these species. Additional information on ARS can be found at: <http://www.fws.gov/southeast/candidateconservation>.

Please contact the South Carolina Department of Natural Resources regarding potential impacts to State protected species. The US Army Corps of Engineers – Charleston District should be contacted regarding permitting requirements for the breakwater and living shoreline construction. If you have any questions on the Service's comments, please contact Mr. Mark Caldwell at (843) 727-4707, ext. 215 and reference FWS Log No. 2019-TA-0136.

Sincerely,

A handwritten signature in blue ink that reads "Thomas D. McCoy". The signature is stylized with a large, looped "T" and "M".

Thomas D. McCoy
Field Supervisor

TDM/MAC
Attachments

South Carolina List of At-Risk, Candidate, Endangered, and Threatened Species - Charleston County

CATEGORY	COMMON NAME/STATUS	SCIENTIFIC NAME	SURVEY WINDOW/ TIME PERIOD	COMMENTS
Amphibian	Frosted flatwoods salamander (T, CH)	<i>Ambystoma cingulatum</i>	January 1-April 30	Larvae present in breeding ponds
	Gopher frog (ARS)	<i>Lithobates capito</i>	Breeding: October-March	Call survey: February-April
	American wood stork (T)	<i>Mycteria americana</i>	February 15-September 1	Nesting season
	Bachman's warbler (E)	<i>Vermivora bachmanii</i>	May 1-June 15	Breeding
Bird	Bald eagle (BGEPA)	<i>Haliaeetus leucocephalus</i>	October 1-May 15	Nesting season
	Black-capped petrel (ARS)	<i>Pterodroma hesitata</i>	April-October	offshore water primarily
	Eastern black rail (T)	<i>Laterallus jamaicensis jamaicensis</i>	May-July	
	MacGillivray's seaside sparrow (ARS)	<i>Ammodramus maritimus macgillivrayi</i>	May-June	
	Piping plover (T, CH)	<i>Charadrius melodus</i>	July 15-May 1	Migration and wintering
	Red-cockaded woodpecker (E)	<i>Picoides borealis</i>	April 1-July 31	Nesting season
	Red knot (T)	<i>Calidris canutus rufa</i>	August 1-May 31	Migration and wintering
	Saltmarsh sparrow (ARS)	<i>Ammodramus caudatus</i>	Fall/winter	Fall/winter surveys
		None Found		
		None Found		
Fish	Atlantic sturgeon* (E)	<i>Acipenser oxyrinchus*</i>	February 1-April 30	Spawning migration
	Blueback herring* (ARS)	<i>Alosa aestivalis*</i>	Mid-January-mid May	Peak: March-April
	Shortnose sturgeon* (E)	<i>Acipenser brevirostrum*</i>	February 1-April 30	Spawning migration
Insect	Frosted elfin (ARS)	<i>Callophrys irus</i>	March - June	
	Monarch butterfly (ARS)	<i>Danaus plexippus</i>	August-December	Overwinter population departs: March-April
	Finback whale* (E)	<i>Balaenoptera physalus*</i>	November 1-April 30	Off the coast
Mammal	Humpback whale* (E)	<i>Megaptera novaeangliae</i>	January 1-March 31	Migration off the coast
	Northern long-eared bat (T)	<i>Myotis septentrionalis</i>	Year round	Winter surveys not as successful
	Right whale* (E)	<i>Balaena glacialis</i>	November 1-April 30	Off the coast
	Tri-colored bat (ARS)	<i>Perimyotis subflavus</i>	Year round	Found in mines and caves in the winter
	West Indian manatee (T)	<i>Trichechus manatus</i>	May 15-October 15	In coastal waters
Mollusk		None Found		
	American chaffseed (E)	<i>Schwalbea americana</i>	May-August	1-2 months after a fire
Plant	Bog asphodel (ARS*)	<i>Narthecium americanum</i>	June-July	
	Boykin's lobelia (ARS)	<i>Lobelia boykinii</i>	May-July/August	
	Canby's dropwort (E)	<i>Oxypolis canbyi</i>	Mid-July-September	
	Ciliate-leaf tickseed (ARS)	<i>Coreopsis integrifolia</i>	August-November	
	Pondberry (E)	<i>Lindera melissifolia</i>	February-March	
	Seabeach amaranth (T)	<i>Amaranthus pumilus</i>	July-October	

South Carolina List of At-Risk, Candidate, Endangered, and Threatened Species - Charleston County

CATEGORY	COMMON NAME/STATUS	SCIENTIFIC NAME	SURVEY WINDOW/ TIME PERIOD	COMMENTS
Reptile	Eastern diamondback rattlesnake (ARS)	<i>Crotalus adamanteus</i>	Most of the year	Peak: April-November
	Green sea turtle ** (T)	<i>Chelonia mydas</i> **	May 1-October 31	Nesting and hatching
	Kemp's ridley sea turtle ** (E)	<i>Lepidochelys kempii</i> **	May 1-October 31	In coastal waters
	Leatherback sea turtle ** (E)	<i>Dermochelys coriacea</i> **	May 1-October 31	Nesting and hatching
	Loggerhead sea turtle ** (T, CH)	<i>Caretta caretta</i> **	May 1-October 31	Nesting and hatching
	Southern hognose snake (ARS)	<i>Heterodon simus</i>	Most of the year	
	Spotted turtle (ARS)	<i>Clemmys guttata</i>	February-mid April	

* Contact National Marine Fisheries Service (NMFS) for more information on this species

** The U.S. Fish and Wildlife Service (FWS) and NMFS share jurisdiction of this species

ARS Species that the FWS has been petitioned to list and for which a positive 90-day finding has been issued (listing may be warranted); information is provided only for conservation actions as no Federal protections currently exist.

ARS* Species that are either former Candidate Species or are emerging conservation priority species

BGEPA Federally protected under the Bald and Golden Eagle Protection Act

C FWS or NMFS has on file sufficient information on biological vulnerability and threat(s) to support proposals to list these species

CH Critical Habitat

E Federally Endangered

P or P - CH Proposed for listing or critical habitat in the Federal Register

S/A Federally protected due to similarity of appearance to a listed species

T Federally Threatened

These lists should be used only as a guideline, not as the final authority. The lists include known occurrences and areas where the species has a high possibility of occurring. Records are updated as deemed necessary and may differ from earlier lists.

For a list of State endangered, threatened, and species of concern, please visit <https://www.dnr.sc.gov/species/index.html>.

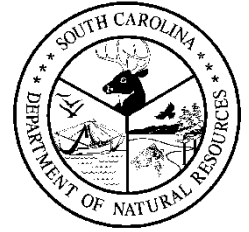
Manatee Guidelines

To reduce potential construction-related impacts to the manatee to discountable and insignificant levels, the Service recommends implementing the *Standard Manatee Construction Conditions*, which are as follows:

The permittee will comply with the following manatee protection construction conditions:

- a. The permittee shall instruct all personnel associated with the project of the potential presence of manatees and the need to avoid collisions with manatees. All construction personnel must monitor water-related activities for the presence of manatee(s) during May 15 - October 15.
- b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973.
- c. Any siltation barriers used during the project shall be made of material in which manatees cannot become entangled and must be properly secured, and regularly monitored to avoid manatee entrapment.
- d. All vessels associated with the project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- e. If manatee(s) are seen within 100 yards of the active construction area all appropriate precautions shall be implemented to ensure protection of the manatee. These precautions shall include the operation of all moving equipment no closer than 50 feet to a manatee. Operation of any equipment closer than 50 feet to a manatee shall necessitate immediate shutdown of that equipment. Activities will not resume until the manatee(s) has departed the project area of its own volition.
- f. Any collision with and/or injury to a manatee shall be reported immediately to Jim Valade of the U.S. Fish and Wildlife Service, North Florida Field Office, at (904) 731-3116.

South Carolina Department of Natural Resources



PO Box 167
Columbia, SC 29202
(803) 734-1396
lemerisj@dnr.sc.gov

Alvin A. Taylor
Director
Lorianne Riggan
Director, Office of
Environmental Programs

December 17, 2018

J. Tracy Stakely
Superintendent
Fort Sumter National Monument
National Park Service
1214 Middle Street
Sullivan's Island, SC 29482

Electronic submission

Re: Request for Threatened and Endangered Species Consultation
Fort Sumter National Monument Breakwater Rehabilitation Project
Charleston County, South Carolina

Dear Mr. Stakely:

The South Carolina Department of Natural Resources (SCDNR) has received your request for threatened and endangered species consultation for rehabilitation of the breakwater at Fort Sumter National Monument in Charleston County, South Carolina. The proposed project would consist of moving the existing 1,825 tons of armor stone riprap that are currently positioned against the exterior foundation walls of the fort approximately 60-feet out into the water and away from the brink walls to create a lower protective breakwater structure. Additional stone would be placed if needed. A living shoreline would be established between the breakwater and the fort's walls – this area would be backfilled with sand and planted with native vegetation including *Spartina patens* and *S. alterniflora*.

According to SCDNR data, there are several occurrences of various rare, threatened or endangered species either on or within five (5) miles of the project footprint, including Shortnose sturgeon (*Acipenser brevirostrum*), and Atlantic sturgeon (*Acipenser oxyrinchus*) Loggerhead sea turtle (*Caretta caretta*) and West Indian manatee (*Trichechus manatus*). Please keep in mind that this information is derived from existing databases, and do not assume that it is complete. Areas not yet inventoried by SCDNR biologists may contain significant species or communities.

The Cooper River, which empties into the Charleston Harbor northwest of the project area, is designated critical habitat for Atlantic sturgeon under the Endangered Species Act. SCDNR recommends consultation with the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) to determine if construction activities are likely to negatively impact sturgeon. Additionally, there are several occurrences of Shortnose sturgeon in the vicinity of the Charleston Harbor. If Shortnose sturgeon are found within the project area, please consult with the NMFS before proceeding with construction.

Occurrences of Loggerhead sea turtle and West Indian manatee have also been documented in the vicinity of Charleston Harbor. Additionally, designated critical habitat for Loggerhead sea turtle exists approximately 4-miles south of the project area (Folly/Rat Island beaches). SCDNR recommends consultation with the NMFS to determine if construction activities are likely to negatively impact sea turtle or manatee.

These technical comments are submitted to speak to the general impacts of the activities as described through inquiry by parties outside the South Carolina Department of Natural Resources. These technical comments are submitted as guidance to be considered and are not submitted as final agency comments that might be related to any unspecified local, state or federal permit, certification or license applications that may be needed by any applicant or their contractors, consultants or agents presently under review or not yet made available for public review. In accordance with its policy 502.01, Comments on Projects Under Department Review, the South Carolina Department of Natural Resources, reserves the right to comment on any permit, certification or license application that may be published by any regulatory agency which may incorporate, directly or by reference, these technical comments.

Interested parties are to understand that SCDNR may provide a final agency position to regulatory agencies if any local, state or federal permit, certification or license applications may be needed by any applicant or their contractors, consultants or agents. For further information regarding comments and input from SCDNR on your project, please contact our Office of Environmental Programs by emailing environmental@dnr.sc.gov or by visiting www.dnr.sc.gov/environmental.

Should you have any questions or need more information, please do not hesitate to contact me by email at lemerisj@dnr.sc.gov or by phone at 803-734-1396.

Sincerely,

A handwritten signature in blue ink, appearing to read "J. Lemeris, Jr.", with a stylized flourish at the end.

Joseph Lemeris, Jr.
Heritage Trust Program
SC Department of Natural Resources



UNITED STATES DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office

263 13th Avenue South

St. Petersburg, Florida 33701-5505

<http://sero.nmfs.noaa.gov>

February 22, 2019

F/SER47:CC/pw

(Sent via Electronic Mail)

Tracy Stakely, Superintendent
National Park Service Fort Sumter National Monument
1214 Middle Street
Sullivan's Island, South Carolina 29482

Attention: Nathan Betcher

Dear Ms. Stakely:

NOAA's National Marine Fisheries Service (NMFS) reviewed the U.S. Department of Interior, National Park Service (NPS) memorandum, dated November 15, 2018, regarding the proposal to rehabilitate the breakwater at Fort Sumter National Monument located in Charleston Harbor, Charleston County, South Carolina. The NPS is preparing an Environmental Assessment and is seeking comments on the proposed action. As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, the NMFS provides the following comments and recommendations pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

Fort Sumter is currently surrounded with 1,825 tons of armor stone riprap located against the Fort's foundation walls. The NPS proposes to move the riprap 60 feet out into shallow water, place additional stone if needed, back-fill the area behind the stone with sand, and plant with native salt marsh vegetation. The primary impact to Essential Fish Habitat (EFH) likely to result from the proposed project is loss of subtidal non-vegetated flats by either fill (placement of the stone) or conversion to marine emergent wetlands. The NMFS encourages the use of living shorelines for shoreline stabilization and recognizes habitat tradeoffs may result. In order to minimize fill impacts while maximizing functional intertidal habitat use, the NMFS recommends incorporating breaks or openings in any hard structural elements to facilitate natural flushing and allow aquatic organisms to access nearshore and shoreline habitat. Openings will also allow aquatic organisms escape routes if trapped behind the breakwater during high tide or storm events. The NMFS also recommends that NPS consider terracing behind the breakwater rather than attempting to completely fill and plant the area. Terracing is a wetland-restoration technique used to convert shallow subtidal bottom to marsh by forming terraces, or ridges, at marsh elevation planted with native salt marsh vegetation, and arranging these ridges such that sediment accretion is maximized and allowing for natural vegetation expansion over time.



NMFS appreciates the opportunity to provide these comments. Please direct related correspondence to the attention of Cindy Cooksey at our Charleston Area Office. She may be reached at (843) 460-9922 or by e-mail at Cynthia.Cooksey@noaa.gov.

Sincerely,

A handwritten signature in cursive script, appearing to read "Poe Willa".

/ for

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

cc: NPS, Tracy_Stakely@nps.gov
NPS, Nathan_Betcher@nps.gov
F/SER47, Cynthia.Cooksey@noaa.gov



December 18, 2018

J. Tracy Stakely
National Park Service
Fort Sumter National Monument
1214 Middle St.
Sullivan's Island, SC 29482

Re: Proposed Project to Rehabilitate the Breakwater at Fort Sumter National Monument
Charleston, Charleston County, South Carolina
SHPO Project No. 18-JS0533

Dear Mr. Stakely:

Thank you for your November 15, 2018 letter, which we received on November 19, regarding the above-referenced proposed undertaking. We also received proposed project map figures and a copy of the *Submerged Cultural Resources Survey of Proposed Breakwater Construction Project Area, Fort Sumter National Monument, Charleston, South Carolina* (2004) as supporting documentation. The State Historic Preservation Office is providing comments to the National Park Service (NPS) pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR 800. Consultation with the SHPO is not a substitution for consultation with Tribal Historic Preservation Offices, other Native American tribes, local governments, or the public.

The Area of Potential Effect (APE) includes Fort Sumter National Monument, a property listed in the National Register of Historic Places.

Our office recommends continued consultation as plans and drawings for the proposed undertaking are developed. We look forward to receipt of documentation pursuant to 36 CFR 800.11 and the Nationwide Programmatic Agreement.

Our office defers to the expertise of the State Underwater Archaeologist, James Spirek, for undertakings that may include submerged resources. The following are James Spirek's comments and recommendations, followed by our comments, on the cultural resources survey report that was provided.

- 1) Inspect areas around Anomalies A and J for objects of archaeological/historical significance during removal of rip-rap;
- 2) Take care around remnants of wharf, tower, and walkway foundation, including Anomalies B, C, E, & F;

- 3) Avoid damage to Anomalies G & H (purported cannon carriage components) and the marine boiler.

Please also provide a copy of the referenced field data and GIS coverages resulting from the FOSU remote sensing survey to the Office of the State Underwater Archaeologist at the South Carolina Institute of Archaeology and Anthropology (OSA-SCIAA).

p. 10- It is stated here that the post Civil War cultural remains "are contributing elements to Fort Sumter's historical significance" and on pg. 26 that "They are not considered eligible for the National Register of Historic Places on their own, nor are they contributing elements to the overall National Register listing of Fort Sumter itself." Please clarify.

p. 28- Please provide updates to the OSA-SCIAA if Anomalies G and H and the World War II-era boiler are removed.

Please provide at least three (3) hard copies of the final survey report: one (1) bound hard copy and a digital copy in ADOBE Acrobat PDF format for the SHPO; one (1) bound and one (1) unbound hard copies and a digital copy in ADOBE Acrobat PDF format for OSA-SCIAA. Investigators should send all copies directly to the SHPO. The SHPO will distribute the appropriate copies to OSA-SCIAA.

Please refer to SHPO Project Number 18-JS0533 in any future correspondence regarding this project. If you have any questions, please contact me at (803) 896-6129 or jsylvest@scdah.sc.gov.

Sincerely,



John D. Sylvest
Project Review Coordinator
State Historic Preservation Office

December 6, 2018

Attention: Tracy Stakely
USDI NPS
1214 Middle Street
Sullivan's Island, SC 29482

Re. THPO #	TCNS #	Project Description
2019-384-2		Rehabilitate the Breakwater at Fort Sumter National Monument

Dear Ms. Stakely,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions please contact Caitlin Rogers at 803-328-2427 ext. 226, or e-mail caitlinh@ccppcrafts.com.

Sincerely,

Caitlin Rogers for

Wenonah G. Haire
Tribal Historic Preservation Officer

Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, South Carolina 29730

Office 803-328-2427
Fax 803-328-5791



UNITED STATES DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office

263 13th Avenue South

St. Petersburg, Florida 33701-5505

<http://sero.nmfs.noaa.gov>

February 22, 2019

F/SER47:CC/pw

(Sent via Electronic Mail)

Tracy Stakely, Superintendent
National Park Service Fort Sumter National Monument
1214 Middle Street
Sullivan's Island, South Carolina 29482

Attention: Nathan Betcher

Dear Ms. Stakely:

NOAA's National Marine Fisheries Service (NMFS) reviewed the U.S. Department of Interior, National Park Service (NPS) memorandum, dated November 15, 2018, regarding the proposal to rehabilitate the breakwater at Fort Sumter National Monument located in Charleston Harbor, Charleston County, South Carolina. The NPS is preparing an Environmental Assessment and is seeking comments on the proposed action. As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, the NMFS provides the following comments and recommendations pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

Fort Sumter is currently surrounded with 1,825 tons of armor stone riprap located against the Fort's foundation walls. The NPS proposes to move the riprap 60 feet out into shallow water, place additional stone if needed, back-fill the area behind the stone with sand, and plant with native salt marsh vegetation. The primary impact to Essential Fish Habitat (EFH) likely to result from the proposed project is loss of subtidal non-vegetated flats by either fill (placement of the stone) or conversion to marine emergent wetlands. The NMFS encourages the use of living shorelines for shoreline stabilization and recognizes habitat tradeoffs may result. In order to minimize fill impacts while maximizing functional intertidal habitat use, the NMFS recommends incorporating breaks or openings in any hard structural elements to facilitate natural flushing and allow aquatic organisms to access nearshore and shoreline habitat. Openings will also allow aquatic organisms escape routes if trapped behind the breakwater during high tide or storm events. The NMFS also recommends that NPS consider terracing behind the breakwater rather than attempting to completely fill and plant the area. Terracing is a wetland-restoration technique used to convert shallow subtidal bottom to marsh by forming terraces, or ridges, at marsh elevation planted with native salt marsh vegetation, and arranging these ridges such that sediment accretion is maximized and allowing for natural vegetation expansion over time.



NMFS appreciates the opportunity to provide these comments. Please direct related correspondence to the attention of Cindy Cooksey at our Charleston Area Office. She may be reached at (843) 460-9922 or by e-mail at Cynthia.Cooksey@noaa.gov.

Sincerely,

A handwritten signature in cursive script, appearing to read "Poe Willa".

/ for

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

cc: NPS, Tracy_Stakely@nps.gov
NPS, Nathan_Betcher@nps.gov
F/SER47, Cynthia.Cooksey@noaa.gov

Environmental Assessment for the Proposed Breakwater Rehabilitation

Fort Sumter National Monument

National Park Service
U.S. Department of the Interior



Park Background

Fort Sumter National Monument is an island fort situated at the entrance of the Charleston Harbor. The fort is a five-sided, three-tiered masonry structure that was designed for an armament of 135 guns and garrison of 650 men. Fort Sumter National Monument's mission in the enabling legislation is to preserve the Civil War remnants of Fort Sumter and to commemorate and interpret the opening battle of the Civil War. Fort Sumter is where one of our Nation's most critical defining moments, the American Civil War, began. Fort Sumter is the most heavily bombarded site in the western hemisphere as a result of the Union forces' attempt to regain control of the Charleston Harbor. Fort Sumter was and is a powerful symbol to both the North and South, and it remains a memorial to all who fought to hold it.



Riprap Surrounding Fort Sumter



Project Background

Currently, a riprap shoreline surrounds approximately 3/4 of the fort. Fort Sumter is currently subject to high wave energy striking the brick walls of the fort, causing erosion to the structure and mortar on the wall. Where the riprap touches the brick wall, erosion has resulted in a wavy wall and curving of bricks. On portions of the fort where there is no riprap, high wave action has resulted in areas of failing brickwork. In addition, there is also a forecasted sea level rise that will pose a threat to the fort in years to come. The purpose of this project is to further protect Fort Sumter from erosion and structural damage and to preserve the structure for future generations.

Proposed Action

The proposed project would consist of moving the existing 1,825 tons of armor stone riprap that are currently positioned against the exterior foundation walls of Fort Sumter approximately 60 feet out into the water and away from the brick walls to create a lower protective breakwater structure. Additional stone would be placed if needed to complete the breakwater. The breakwater would run along the left face, right face, and right flank of the fort to provide protection from wave action. A living shoreline would be established between the breakwater and the fort's walls. This area would be backfilled with sand and planted with native vegetation including *Spartina patens* and *S. alterniflora*. The living shoreline would create a natural habitat for both terrestrial and aquatic life. The construction of the breakwater and living shoreline would provide protection from wave action and allow for maintenance to be performed on the fort's exterior walls.

Proposed Breakwater and Living Shoreline



UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
FORT SUMTER NATIONAL MONUMENT
1214 MIDDLE STREET
SULLIVANS ISLAND, SC 29482

Fort Sumter National Monument South Carolina

November 2018

National Park Service
U.S. Department of the Interior



The NEPA Process

The National Park Service (NPS) must follow the National Environmental Policy Act of 1969 (NEPA) to ensure consideration of important environmental issues. The Fort Sumter breakwater rehabilitation will be analyzed using the NEPA process. The environmental effects resulting from the proposed project will be evaluated in an Environmental Assessment (EA). The analysis will consider impacts to topics including aquatic resources, wetlands, wildlife, special status species, water quality, cultural resources, park visitor use and experience, and public health and safety.

The document will analyze both short-term and long-term, as well as cumulative effects of the proposed breakwater rehabilitation and the “no action alternative”. By comparing the proposed action alternative with the no action alternative, and identifying mitigation measures that would minimize adverse effects, the EA will assist stakeholders in the decision-making process.

Public Scoping Process

The NPS announces a 30-day public scoping period for the Fort Sumter Breakwater Rehabilitation. Public comments will be accepted through December 15, 2018. You may provide comments in any of the following ways:

- Comment online at <http://parkplanning.nps.gov/fosubreakwater>.
- Mail comments to:
Superintendent
Fort Sumter National Monument
1214 Middle Street,
Sullivan’s Island, SC 29482

Comments will not be accepted by fax, email, or in any other way than specified above. Your comment, including your address, email, or other personal identifying information, may be made publicly available in the Environmental Assessment or online, even if requested to be private.

APPENDIX B

SPECIAL-STATUS SPECIES THAT MAY OCCUR IN THE VICINITY OF THE PROJECT AREA

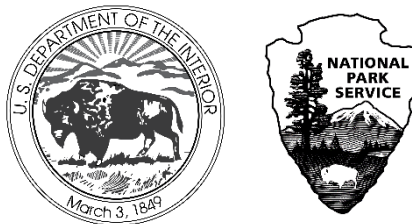
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Federal and State Listed Species Present or Potentially Present at Fort Sumter National Monument

Scientific Name	Common Name	Federal Status	State Status	Potential Habitat in Project Area
Reptiles				
<i>Caretta caretta</i>	Loggerhead sea turtle	Threatened	Threatened	Yes
<i>Chelonia mydas</i>	Green sea turtle	Threatened	Threatened	Yes
<i>Dermochelys coriacea</i>	Leatherback sea turtle	Endangered	Endangered	Yes
<i>Lepidochelys kempii</i>	Kemp's Ridley sea turtle	Endangered	Endangered	Yes
Amphibians				
<i>Ambystoma cingulatum</i>	Frosted flatwoods salamander	Threatened	Endangered	No
Birds				
<i>Ammodramus maritimus macgillivraii</i>	Macgillivray's seaside sparrow	At Risk Species	--	Yes
<i>Calidris canutus rufa</i>	Rufa red knot	Threatened	--	Yes
<i>Charadrius melodus</i>	Piping plover	Threatened	Endangered	Yes
<i>Charadrius wilsonia</i>	Wilson's plover	--	Threatened	Yes
<i>Dendroica kirtlandii</i>	Kirtland's warbler	Endangered	--	No
<i>Laterallus jamaicensis</i> spp. <i>jamaicensis</i>	Eastern black rail	Proposed Threatened	--	Yes
<i>Mycteria americana</i>	Wood stork	Threatened	Endangered	No
<i>Picoides borealis</i>	Red-cockaded woodpecker	Endangered	Endangered	No
<i>Sterna antillarum</i>	Least tern	--	Threatened	Yes
<i>Vermivora bachmanii</i>	Bachman's warbler	Endangered	Endangered	No
Mammals				
<i>Balaenoptera physalus</i>	Finback whale	Endangered	Endangered	No
<i>Eubalaena glacialis</i>	Northern Atlantic right whale	Endangered	Endangered	No
<i>Megaptera novaeangliae</i>	Humpback whale	Endangered	Endangered	No
<i>Myotis septentrionalis</i>	Northern long-eared bat	Threatened	--	No
<i>Trichechus manatus</i>	West Indian Manatee	Threatened	Endangered	Yes
Fish				
<i>Acipenser oxyrinchus</i>	Atlantic sturgeon	Endangered	--	No
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	Endangered	Endangered	No
Plants				
<i>Amaranthus pumilus</i>	Seabeach amaranth	Threatened	--	Yes
<i>Lindera melissifolia</i>	Pondberry	Endangered	--	No
<i>Oxypolis canbyi</i>	Canby's dropwort	Endangered	--	No
<i>Schwalbea americana</i>	American chaffseed	Endangered	--	No

Sources: USFWS 2018, SC DNR 2018; NPS 2018.

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As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historic places, and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under US administration.

FOSU D3219/2019

United States Department of the Interior · National Park Service