United States Department of Interior

National Park Service
Fort Pulaski National Monument
Chatham County, Georgia
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FINDING OF NO SIGNIFICANT IMPACT

Proposed Bank Stabilization at Cockspur Island Lighthouse

The Preferred Alternative does not constitute an action that normally requires preparation of an Environmental Impact Statement (EIS). The Preferred Alternative will not have a significant adverse effect on the human environment. There are no unmitigated adverse effects to physical resources, water resources, natural resources, cultural resources, or other unique resources within the region. No highly uncertain or controversial impacts, unique or unknown risks, or known cumulative effects were identified.

After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed Federal actions are consistent with existing national environmental policies and objectives as set forth in section 101(a) of the National Environmental Policy Act of 1969 (NEPA) and that they will not significantly affect the quality of the human environment or otherwise include any condition requiring consultation pursuant to Section 102 (2)(c) of NEPA.

Based on the foregoing, it has been determined that an EIS is not required for this project and thus will not be prepared.

Recommended: Randall W. Wester Date: 11·3·09
Randall W. Wester
Superintendent
Fort Pulaski National Monument

Approved: Art Frederick Date: 11/18/09
David Vela
Regional Director
Southeast Region
for

FINDING OF NO SIGNIFICANT IMPACT

Proposed Bank Stabilization at Cockspur Island Lighthouse

INTRODUCTION

Fort Pulaski National Monument (the "monument") includes 5,623 acres of National Park Service (NPS) owned land on Cockspur and McQueens Islands. The Cockspur Island Lighthouse (the "lighthouse") is also owned by the NPS and is a part of the monument. Cockspur Island houses Fort Pulaski and is located at the mouth of the North and South Channel of the Savannah River, approximately 15 miles east of Savannah, Georgia off U.S. Highway 80. The Cockspur Island Lighthouse is situated on a small unnamed island located immediately to the east of Cockspur Island. The NPS owns the small island where the Cockspur Island Lighthouse is situated and is therefore the lead agency for this project. The U.S. Army Corps of Engineers (USACE) is participating with the NPS as a cooperating agency. The lighthouse is a forty-six foot tall brick structure that marks the South Channel of the Savannah River in northeastern Chatham County, GA near the Jasper County line. The lighthouse sits on a live oyster reef surrounded by small patches of low saltmarsh dominated by saltmarsh cordgrass (*Spartina alterniflora*).

The Cockspur Island Lighthouse is one of five historic lighthouses remaining in Georgia. The lighthouse is only accessible to park visitors during low tide and is supported by a wooden base that exists under the foundation of the structure. There are two principle issues affecting the lighthouse: island erosion and infestation of the wooden foundation of the lighthouse by marine borers called shipworms. Portions of the lighthouse's wooden foundation are now exposed and have visual shipworm damage. Additionally, the island is under water for approximately fifty to sixty percent of the day. During high tide, the island is completely submerged, as well as the first several steps to the lighthouse's doorway. Natural processes, including winds and tides, as wells as waves caused by passing ships have eroded the island away, so now it only consists of a narrow strip of land visible during low tide. If the foundation fails, the historic lighthouse would fall into the water and be permanently lost.

The Cockspur Island Lighthouse is currently open to the public, although access is limited to low tide by boat. The current substrate of the island is composed of live oyster reef and oyster shells, which are extremely slippery when wet and create a hazardous walking surface for visitors. This project will provide bank stabilization to the island where the Cockspur Island Lighthouse is located, thereby preserving the lighthouse for future generations as well as improvements to visitor safety. Fill material is proposed between the shoreline and lighthouse to create a safe walking surface for visitors. In addition, the lighthouse would be accessible during high and low tides, allowing visitors to access the lighthouse for longer periods throughout the day.

PREFERRED ALTERNATIVE

Bank Stabilization at Cockspur Island Lighthouse

The Preferred Alternative is described as bank stabilization of the island where the Cockspur Island Lighthouse is located. To do this, a portion of the island would be protected by placing riprap along the shoreline. Approximately 572 feet of rock shore protection would be placed along the north, east, and south sides of the unnamed island from -1.5 mean lower low water (MLLW) to +6 MLLW. The area from the riprap to the interior of the island surrounding the lighthouse would be potentially filled with sediment at a slope of approximately 3:1. The surface restoration of fill material would be designed to recreate the historic 1860s landscape and would include placing coarser sand/shell deposits from a local borrow source on the surface. The surface would be interspersed with suitably sized stones of Georgia (GA) Type 3 Riprap to mimic the historic Coast Guard riprap. In addition, saltmarsh cordgrass (*Spartina alterniflora*) marsh plantings would be interspersed with re-established oysterbed areas and an oystershell path would extend from the boat landing around the inner perimeter of the riprap to facilitate future project inspections and maintenance. The total footprint of disturbance associated with the Preferred Alternative is approximately 1.5 acres. The footprint of the interior fill portion of the project is approximately 1.0 acre and the total footprint of the rock stabilization (riprap) portion of the project is approximately 0.5 acres. The fill portion of the project, with the exception of the planned visitor access and maintenance walkway(s), will be planted with saltmarsh cordgrass (0.9 acres) for wetland mitigation. The fill material would also provide a safe walking surface for park visitors. A secondary benefit of the bank stabilization would be lighthouse protection as well as improvements to visitor safety. By placing riprap and fill around the island, the damage from waves would be minimized. Further deterioration of the lighthouse foundation and erosion of the oyster reef island would halt.

OTHER ALTERNATIVES CONSIDERED

No Action Alternative

Under the No Action Alternative, the structure would continue to be susceptible to shoreline erosion and wave attack. This lack of action would eventually lead to the lighthouse collapsing into the mouth of the Savannah River, and the eventual destruction of the Lighthouse and the permanent loss of a historic structure would result.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is determined by applying the criteria from Section 2.7 (D) of NPS Director's Order 12. These are the same criteria outlined in NEPA, which is guided by the Council of Environmental Quality (CEQ) regulations. CEQ regulations provide direction that "the environmentally preferable alternative is the alternative that will best promote the national environmental policy" as expressed in Section 101(b) of NEPA:

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

2. Assure all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings;

3. Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;

4. Preserve important historic, cultural, and natural aspects of our national heritage and maintain whenever possible, an environment that supports diversity and variety of individual choices;

5. Achieve a balance between population and resource use that would permit high standards of living and wide sharing of life's amenities; and

6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The Environmental Assessment (EA) for the Proposed Bank Stabilization at Cockspur Island Lighthouse concluded that the environmentally preferred alternative is the same as the Preferred Alternative. This alternative will meet park purposes and national environmental policy goals by protecting important cultural resources and enhancing visitor safety. This alternative will also provide protection to historic resources for which the park was established.

THE PREFERRED ALTERNATIVE AND SIGNIFICANCE CRITERIA

As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

Impacts that may have both beneficial and adverse aspects and which on balance may be beneficial, but that may still have significant adverse impacts which require analysis in an EIS:

Impacts associated with the Preferred Alternative include long-term impacts from the project and short-term impacts from construction activities. The bank stabilization of the island shoreline would provide a long-term, beneficial impact to historic resources through the protection of the shoreline and the historic lighthouse structure and maintaining the cultural landscape and historic viewshed. Long-term, beneficial impacts to recreation, aesthetics, public health and safety, park operations, and visitor use/experience are also anticipated as a result of the Preferred Alternative. Adverse impacts to floodplains, the coastal zone, and wetlands will result from the Preferred Alternative, but mitigation proposed and the long-term benefits of protecting these

resources through the bank stabilization are expected to outweigh the adverse affects. The Preferred Alternative is expected to benefit the floodplains, the coastal zone, and wetlands on the island in the future due to the protection afforded by the bank stabilization. The Preferred Alternative may affect/not likely to adversely affect special status species known to use the Savannah River during construction and would have no adverse impacts to ecologically critical areas, submerged aquatic vegetation (SAV) (none is present), and designated natural areas. The construction period may cause short-term, minor adverse impacts to noise quality, water quality, air quality, aquatic resources, a reduction in the quality of water-based recreational opportunities in the immediate area, and aesthetics due to construction equipment. These impacts would be temporary in nature and would only occur during the construction period of the project.

The No Action Alternative would cause long-term, major adverse impacts to historic resources, including the eventual and permanent loss of a historic structure and adverse changes to the cultural landscape and historic viewshed as a result of the lighthouse loss. Additionally, the island would continue to erode away, resulting in permanent losses to floodplains, the coastal zone, and wetlands. The No Action Alternative would not affect special status species. Many benefits to the park, including public health and employee safety, visitor use/experience, and recreation would never be realized under the No Action Alternative.

There would be no impairment to park resources associated with the Preferred Alternative. Furthermore, this project would not exacerbate shoreline development within the region and would not have a cumulative effect on the natural, physical or human environment in the vicinity of the proposed project when considered along with other past, present, and reasonably foreseeable future actions in the region.

Impacts from the project will not be significant and will not result in impairment to resources at Fort Pulaski.

The degree to which the action affects public health and safety:

The Preferred Alternative would have a long-term, moderate, beneficial impact to public health and safety. Currently, access to the lighthouse is challenging, and only possible at low tide via boat or kayak. In addition to limited access times during the day, the lighthouse currently rests on hazardous grounds, compromising public and employee safety at the islet. The current substrate of the island is composed of live oyster reef and oyster shells which are very sharp and become extremely slippery when wet, creating a dangerous walking surface for visitors. The Preferred Alternative would provide a safe and sustainable walking surface for the public and employees following project completion and for the foreseeable future.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, parklands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas:

The Cockspur Island Lighthouse is one of five historic lighthouses remaining in Georgia. The Preferred Alternative would result in no adverse impacts to archaeological resources and would result in long-term, major, beneficial impacts to historic resources at the monument through the preservation of the lighthouse. Not only is the Cockspur Island Lighthouse an important cultural resource that is highly visible to the public, it is also part of the national lighthouse system for maritime navigation. The NPS has many other lighthouses, but this is the only one that is actually part of the cultural landscape of a National Monument, as this lighthouse has witnessed the bombardment of Fort Pulaski during the Civil War. Therefore, the Preferred Alternative would have a long-term, moderate, beneficial impact on cultural landscapes associated with the fort.

The Preferred Alternative would convert 1.5 acres of estuarine wetlands to low salt marsh habitat by filling in a portion of the island and then planting the material with saltmarsh cordgrass. Wetland loss would occur when the material revetment is placed along the shoreline, but the proposed wetland mitigation plan should offset the adverse impacts associated with the Preferred Alternative. Additionally, long-term, moderate, beneficial impacts associated with protecting the island and existing intertidal wetlands from erosion and ultimate loss would occur and would far outweigh the minimal, adverse impacts to wetlands.

Long-term, minor, beneficial impacts to floodplains and long-term, minor, adverse impacts to floodplains would be anticipated due to the proposed project. The island lies within the 100-year floodplain and the total impact area for the Preferred Alternative is approximately 1.5 acres. Long-term, minor, beneficial impacts to floodplains would occur as a result of the project because erosion in the existing floodplain would be decreased and further loss of floodplain would be prevented. Because the Preferred Alternative is water-dependent, the project cannot completely avoid being situated in a floodplain due to the lighthouse function, which historically relied on a close proximity to water. Impacts to the floodplain have been minimized to the greatest extent practicable, including a reduction in total design length of the revetment by approximately 200 ft.

The project is located on an unnamed island within the coastal zone of Georgia. Short-term, minor, adverse impacts are anticipated to the coastal zone from implementation of the proposed project, due to the placement of material revetment and fill material on the island in the coastal zone. However, long-term, minor, beneficial impacts are expected due to protection of the remaining island within the coastal zone. A Coastal Zone Management Act Consistency Certification for the proposed project will be completed by Georgia Department of Natural Resources Coastal Resources Division (GADNR-CRD) upon submittal of this FONSI. The proposed project would be consistent to the maximum extent practicable with GADNR-CRD's enforceable policies.

There are no prime farmlands, wild and scenic rivers, ecological critical areas, or designated natural areas that will be impacted by the Preferred Alternative. However, short-term, minor, adverse impacts to essential fish habitat will result due to filling areas of the live oyster reef on the island. Mitigation is proposed to offset these impacts.

Degree to which the effects on the quality of the human environment are likely to be highly controversial:

The overall effects on the human environment will be beneficial as a result of the implementation of the project. The Preferred Alternative would offer a safer walking surface for visitors and employees as well as increased visitor access by kayak or boat during all tidal conditions. The proposed project would result in short-term, minor, adverse impacts to recreation during construction activities, but long-term, moderate, beneficial impacts are anticipated following the implementation of the Preferred Alternative.

There were no highly controversial effects identified during the preparation of the EA or the public review period associated with the project.

Degree to which the possible effects on the quality of human environment are highly uncertain or involve unique or unknown risks:

Construction of the bank stabilization would cause short-term, minor adverse impacts to aesthetics and recreation. During the construction phase, recreational opportunities will not be available on the unnamed island and there will be no access to the lighthouse. Land based activities at the park on Cockspur Island would not be affected by this project.

There will be no highly uncertain, unique, or unknown risks associated with the bank stabilization of the Cockspur Island Lighthouse.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration:

The bank stabilization for the Cockspur Island Lighthouse neither establishes a precedent for future actions with significant effects nor represents a decision in principle for future consideration.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts:

Cumulative impacts for the majority of the natural resources in the vicinity of the project will be negligible, because the footprint of the Preferred Alternative is small in magnitude compared to the natural resources in the surrounding area. Changes to sediments, shoreline erosion, water resources, bathymetry, floodplains, coastal zone, and special status species as a result of the proposed project are un-measureable. The minor loss of

wetlands as a result of the project would not contribute to the cumulative impacts to this resource; mitigation would offset the adverse effect to this resource. Cumulative impacts to threatened and endangered species are not expected as a result of this project when considered with other past, present, and reasonably foreseeable future actions.

Cumulative impacts to aquatic resources may occur due to other construction activities taking place along the coast or within the Savannah River within the same timeframe as the Preferred Alternative, such as maintenance dredging and dredging deepening activities proposed in the Savannah River which could temporarily disturb additional areas of bottom substrate. Applicable mitigation measures for this project would be followed in order to minimize impacts to aquatic resources, including time of year restrictions. The Preferred Alternative would not have a cumulative adverse impact on Essential Fish Habitat (EFH) or fisheries managed by the South Atlantic Fishery Management Council and the National Oceanic and Atmospheric Administration (NOAA)-Fisheries.

The Preferred Alternative would potentially create a net beneficial cumulative impact to recreation in the mouth of the Savannah River due to increased recreational opportunities at the monument. Cumulative, beneficial impacts to the overall visitor use and experience are expected to occur at the completion of the Preferred Alternative. Cumulative impacts to minority or low-income communities are not anticipated; cumulative impacts to public health and safety, energy use in the region, and park operations are not anticipated. Cumulative impacts to aesthetics in the monument area are expected to be minor, but noticeable. Visually, visitors would be aware of the green planted grasses on the island, which would allow the site to blend in with the surrounding salt marshes on Cockspur Island. There would be no cumulative impacts to archaeological resources, historic resources, or the cultural landscape at the monument.

Degree to which the action may adversely affect districts, sites, highways, or objects listed on the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources:

Cockspur Island Lighthouse is a historic resource associated with the monument; the lighthouse is currently on the List of Classified Structures (LCS). There are no other historic resources in the vicinity of the Cockspur Island Lighthouse other than Fort Pulaski, which is recorded as an archaeological site. No adverse impacts to archaeological resources are expected from the Preferred Alternative. The Cockspur Island Lighthouse is a historic structure listed on the LCS which was a witness to the siege and reduction of Fort Pulaski, April 11, 1862. The lighthouse was also recently included in the 2008 List of Georgia's 10 *Places in Peril*. Without immediate action to cover the exposed foundation, the entire wooden platform will be at risk of shipworm attack, which would threaten the entire historic structure. The Preferred Alternative would result in long-term, major, beneficial impacts to historic resources at the monument. Additionally, since the lighthouse was a witness to the siege and reduction of Fort Pulaski in 1862 it is part of the cultural landscape of the fort. The Preferred

Alternative would have a long-term, moderate, beneficial impact on cultural landscapes associated with the fort.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat:

Through consultation with U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS), the near-shore federally listed species that could potentially be found within the project area include the West Indian manatee, five species of sea turtles, and the shortnose sturgeon. It has been determined that whale species, with the exception of the Northern Atlantic Right Whale, would not specifically be found within the project area.

Of the five listed turtle species, there is potential for three of the five species to be affected by the project. Based on project location, this project is not likely to adversely affect the hawksbill sea turtle. Additionally, because of their pelagic lifestyle, this project is not likely to adversely affect the leatherback sea turtle. It has been concluded that there will be no affect to whales as a result of the Preferred Alternative because the project area is located outside of critical habitat for the right whale. Potential impacts to each of the remaining species are discussed in the paragraphs below.

Based upon consultation with NMFS, it was determined that impacts to the following Federally-listed nearshore species under the jurisdiction of NMFS should be considered as a result of this project: all five sea turtles (loggerhead sea turtle, green sea turtle, leatherback sea turtle, hawksbill sea turtle, and Kemp's ridley sea turtle) and the shortnose sturgeon. The USFWS stated that based upon the fact that the island is always inundated during high tide, the only potential impact may be to the West Indian manatee. Of the five listed turtle species, there is potential for three of the five species to be affected by the project. Based on project location, this project is not likely to adversely affect the hawksbill sea turtle. Additionally, because of their pelagic lifestyle, this project is not likely to adversely affect the leatherback sea turtle. It has been concluded that there will be no affect to whales as a result of the Preferred Alternative because the project area is located outside of critical habitat for the right whale. The proposed action may affect/is not likely to adversely affect the remaining three listed turtle species (loggerhead sea turtle, green sea turtle, and Kemp's ridley sea turtle), one listed fish species (shortnose sturgeon), and the listed West Indian manatee.

Since the presence of the special status species described above would only be transitory during construction activities of this project, the NPS has made the determination that the Preferred Alternative may affect/not likely to adversely affect the manatee and five sea turtle species known to utilize the Savannah River, and that there will be no effects to the right whale and the shortnose sturgeon as a result of the Preferred Alternative. Detailed precautionary collision avoidance measures will be implemented during construction activities. During the operation of watercraft for construction activities, there would be the potential to affect the listed West Indian manatee and three of the listed sea turtle species if contact with watercraft occurs. These activities would have to be coordinated

with USFWS, NMFS, USACE, and possibly local and state agencies prior to any construction. USACE requires that manatee construction conditions must be followed during the operation of construction equipment in the Savannah River. Sea turtles and the West Indian manatee are transient species to the area and the potential for direct adverse impacts from the project is low. If sea turtles were observed in the area proposed for construction, it is likely that they would avoid areas of construction due to their mobility in water. Sea turtles prefer to forage in SAV bed habitat due to the type of organisms these beds support (macroinvertebrates and juvenile fish). In addition, sea turtle nesting and breeding behavior has not been observed within the vicinity of the project area. Because no SAV occurs within the project area or in the vicinity of the project area, it is unlikely sea turtles would be adversely affected by the Preferred Alternative. Similarly, the West Indian manatee would not be expected to forage in the vicinity of the project area due to the lack of seagrasses in the river.

Whether the action threatens a violation of federal, state, or local environmental protection law:

The Preferred Alternative will not violate federal, state, or local environmental protection laws.

IMPAIRMENT STATEMENT

The NPS has determined that implementation of the Preferred Alternative will not constitute an impairment to Fort Pulaski's resources and values. This conclusion is based on a thorough analysis of the environmental impacts described in the EA, the public comments received, collected data, and the professional judgment of the decision maker guided by the direction in the NPS *Management Policies, 2006*. Although the project will have some adverse impacts, in all cases these adverse impacts will be the result of stabilizing the unnamed island to protect the lighthouse and improving visitor safety at the site. Overall, the proposed action will result in benefits to park resources and values, specifically cultural resources and the historic Cockspur Island Lighthouse.

MITIGATION MEASURES FOR THE PREFERRED ALTERNATIVE

To minimize resource impacts, the following mitigation measures were part of the analyses in the EA and will be followed during implementation of the Preferred Alternative. These actions will lessen the potential for adverse effects of the Preferred Alternative, and have proven to be very effective in reducing environmental impacts on previous projects.

MITIGATION MEASURES

Impact Topic	Mitigation Measure(s)
Special Status Species	• A construction window, referred to as Time of Year (TOY) restrictions, would be in place as a "window" to conduct the aquatic construction activities during the least sensitive time of year for vulnerable and listed species. TOY restrictions would be developed in coordination with appropriate Federal and State agencies. • Other mitigation measures may also include signs to warn boaters that federally listed species may occur in the area.
Water Quality	• Best management practices, including sediment and erosion control measures, would be used during the implementation of the Preferred Alternative. • The fill material would be planted with saltmarsh cordgrass (*Spartina alterniflora*) to reduce wash-over during storm events and to stabilize the material. • A geotextile fabric liner would be placed between the rock on the island and the fill material (to contain the fill material as well as eliminate any loss in void spaces.) • An oyster restoration for the unnamed island is planned and could improve local water quality.
Floodplains	• The interior portions of the island will be filled with coarser sand/shell deposits and planted with saltmarsh cordgrass following construction; this will assist in improving island habitat in the floodplain for biotic species.
Wetlands	• A two-tiered wetland mitigation is planned at a ratio of 1 to 1 to offset the total impact of estuarine wetlands associated with the Preferred Alternative, approximately 1.5 acres. • The NPS will plant 0.9 acres of the fill area on the unnamed island with saltmarsh cordgrass (interspersed with oyster reef habitat at low areas near the stabilization) **and**, • The NPS will restore an additional area (0.6 acres) at the monument on Cockspur Island where spoil was historically deposited in the low saltmarsh. • Also, an oyster restoration for the unnamed island is planned.

PUBLIC INVOLVEMENT

Both internal and external (public) scoping was conducted to inform various agencies and the public about the proposed bank stabilization for the Cockspur Island Lighthouse. A consultation letter was mailed to local and federal agencies requesting comments regarding the proposed project. A scoping newsletter was mailed to 69 individuals, organizations, stakeholders, and agencies in order to notify the public that an environmental assessment was being completed for this project. The newsletter was also

distributed to generate input on the preparation of the EA, but no comments were received from the newsletter.

The EA was made available for public review. A Notice of Availability was published in the Savannah Morning News on May 25, 2009 and the EA was mailed to the same 69 individuals, organizations, stakeholders, and agencies as received the scoping newsletter. The EA was also made available to the public through the NPS website. The comment period for the EA extended from April 25 to May 26, 2009. Comments received on the EA are addressed in an Errata Sheet attached to this FONSI.

APPENDIX D

Essential Fish Habitat Assessment

[UPDATED SEPTEMBER 2009]

ESSENTIAL FISH HABITAT (EFH) ASSESSMENT

An Essential Fish Habitat (EFH) Assessment is a review of the proposed project's potential impacts to EFH, as required by and set forth in the document *Essential Fish Habitat: New Marine Fish Habitat Conservation Mandate for Federal Agencies* by the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), Habitat Conservation Division (revised April 2000). An EFH Assessment therefore satisfies requirements of the 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) and agency consultation between the National Park Service (NPS) and NOAA-NMFS. This EFH Assessment includes the following: 1.) a description of the proposed action; 2) an analysis of the effects, including cumulative effects, of the action on EFH, the managed species, and associated species by life history stage; 3) the Federal agency's views regarding the effects of the action on EFH; and 4) proposed mitigation, if applicable. If appropriate, the assessment should also include the results of an on- site inspection, the views of recognized experts on the habitat or species affects, a literature review, an analysis of alternatives to the proposed action, and any other relevant information.

1. Description of the Proposed Action:

The proposed action is to stabilize the banks of the island where the Cockspur Island Lighthouse is located. To do this, a portion of the island would be protected by placing riprap along the shoreline. The area from the riprap to the interior of the island surrounding the lighthouse would be filled with a slope approximately 3:1. The current substrate of the island is composed of live oyster reef and oyster shells. This substrate is very sharp and becomes extremely slippery when wet, creating a hazardous walking surface for visitors. The fill material proposed between the shoreline and lighthouse would create a safe walking surface for visitors. In addition, the lighthouse would be accessible during high and low tides, allowing visitors to access the lighthouse for longer periods throughout the day. This would ultimately increase the visitor use of the area.

Protection of the 1860s viewshed would be particularly important to the NPS while planning the bank stabilization. The fill material needed for the project would resemble materials compatible with the 1860s historic viewshed. Fill material has not been determined at this time; however, materials suggested include Coast Guard riprap, dried oyster shells, or vegetated saltmeadow cordgrass. The secondary benefit of the bank stabilization would be lighthouse protection. By raising the bank to the level of high tide, the damage from wind, wave, and tides would be minimized. Further deterioration of the lighthouse foundation and erosion of the oyster reef island would halt.

2. Analysis of individual and cumulative effects on EFH:

A. EFH Fish Species:

The proposed project is located in an area identified as EFH for 19 fish species and their associated life stages (Table 1). Estuarine areas of EFH have been identified within the project location, as described in the following section.

Table 1. Essential Fish Habitat (EFH) Species for Coastal Georgia

Common Name	Scientific Name	EFH for Life Stages for Estuarine Ecosystems*
Spanish mackerel	*Scomberomorous maculatus*	J
Cobia	*Rachycentron canadum*	L P J A
Red drum	*Sciaenops ocellatus*	P J S A
White shrimp	*Lilopenaeus setiferus*	P J S
Brown shrimp	*Farfantepenaeus aztecus*	P J A
Sheepshead	*Archosargus probatocephalus*	J A
Crevalle Jack	*Caranx hippos*	A
Gray snapper	*Lutjanus griseus*	P J A
Gag grouper	*Mycteroperca microlepis*	J
Lane snapper	*Lutjanus synagris*	J
Black Sea Bass	*Centropristis striata*	J
Bluefish	*Pomatomus saltatrix*	J A
Summer flounder	*Paralichthys dentatus*	L J A
American Shad	*Alosa sapidissima*	E L P J S
Hickory Shad	*Alosa mediocris*	E L P J S
Blueback Herring	*Alosa aertivalis*	E L P J S
Striped Bass	*Morone saxatilis*	E L P J S
Shortnose Sturgeon	*Acipenser brevirostrum*	E L P J S
Atlantic Sturgeon	*Acipenser oxyrinchus*	E L P J S

*Life stages include: E = Eggs, L = Larvae, P = Post-Larvae, J = Juveniles, S = SubAdults, A = Adults
Source: NOAA 2001.

Suspended sediments in the water column due to the construction of the bank stabilization can cause physical damage to the respiratory structures of the early life stages of fish, including egg larvae, and post-larval forms. If fish eggs are present in the project area, suspended particles could readily adhere to them, making the eggs less buoyant (pelagic eggs) or smothering them (demersal eggs). Fish species that have demersal eggs may be indirectly affected by the increased turbidity and siltation, and would be considered most sensitive to the construction activities. Fish eggs and larvae are widely dispersed in coastal Georgia and are not considered a resource unique to the project area, nor are they expected to exist in higher concentrations surrounding the Cockspur Island Lighthouse.

Project impacts to juvenile, subadult, and adult life stages of EFH species are less likely because these life stages are typically highly mobile and would be able to avoid project impacts. The more mobile fish species are expected to easily move out of or generally avoid the areas of construction during bank stabilization activities. Impacts to EFH species (juvenile, subadult, and adult life stages) are believed to be indirect and related to their food source which are common benthic invertebrates (mollusks, crustaceans, and polychaete worms) found in the vicinity of the project. Most of these immobile species would be eliminated through excavation and burial as the area is converted to riprap. However, following construction activities, this benthic community is expected to reestablish on the riprap.

The following is an analysis of the EFH species potentially located within the project area:

- **Spanish mackerel** – Juvenile and adults could occur within the project area during the warmer months when this species utilize estuaries. Impacts to juvenile Spanish mackerel would be negligible because this is a highly mobile species which should be able to avoid project bank stabilization activities.
- **Cobia** – Impacts to early life stages of cobia would be minimal because spawning occurs over the continental shelf and planktonic larvae drift into estuaries with higher salinities. Juveniles and adults are expected to occur within the project area, however impacts would be negligible since this species is highly mobile and should be able to avoid project bank stabilization activities.
- **Red Drum** – Impacts to early life stages of red drum would be minimal since spawning occurs over the continental shelf and post larvae drift into estuaries with higher salinities. Juveniles, subadults, and adults could utilize the project area during the warmer months, however impacts would be expected to be minimal since this species is highly mobile and should be able to avoid project bank stabilization activities.
- **White Shrimp** – This species prefers saltier reaches of estuaries, but they can be found over large salinity ranges and could potentially be found within the project area. The movement of white shrimp post larvae into estuaries is a result of nearshore tidal currents. The project area provides post larvae nursery areas with abundant food and suitable substrate, but does not provide adequate shelter from predators. Juvenile and adult white shrimp feed over night on benthic organisms, such as polychaete worms. Project impacts to post larvae, juvenile, and adult white shrimp during bank stabilization activities would be minimal, as nursery and feeding grounds are available along the shorelines of Cockspur Island, McQueens Island, and Tybee Island.
- **Brown Shrimp** – Although post larvae brown shrimp are known to occur near the mouths of estuaries, they rarely are found within the project area due to the low salinity. Therefore project impacts to brown shrimp are expected to be negligible. Juvenile and adult brown shrimp prefer areas with mud, sand, and shell substrate. They are typically found in areas with higher salinities than the project area; therefore project impacts would be negligible.

- **Sheepshead** – Juvenile and adult sheepshead migrate to estuaries during the warmer months and are known to utilize estuaries over a broad range of salinities, therefore sheepshead would be a transient species within the project site. Since this species is a powerful swimmer and would be able to avoid project bank stabilization activities; impacts are expected to be negligible.
- **Crevalle Jack** – Adult crevalle jack would be a transient species within the project site. Project impacts would be negligible, as they are powerful swimmers and would be able to avoid bank stabilization activities.
- **Gray Snapper** – Impacts to post larvae gray snapper would be negligible as this species typically occurs in estuaries with higher salinities. Juveniles and adults occur within estuaries. They are strong swimmers and should be able to avoid project bank stabilization activities, therefore impacts are expected to be negligible.
- **Gag Grouper** – Gag grouper are a predominately deep water off-shore species; however juveniles are estuarine dependent and would be a transient species within the project area. Impacts to juvenile gag groupers would be negligible, as they are strong enough swimmers to avoid bank stabilization activities.
- **Lane Snapper** – Lane snapper are a predominately deep water off-shore species; however juveniles are estuarine dependent and would be a transient species within the project area. Impacts to juvenile lane snapper would be negligible, as they are strong enough swimmers to avoid bank stabilization activities.
- **Black Sea Bass** – Juvenile black sea bass are expected to occur within the project area, however impacts would be negligible since this species is highly mobile and should be able to avoid bank stabilization activities.
- **Bluefish** – Juvenile and adult bluefish are highly transient and could occur adjacent to the project area during warmer months. This species is a highly mobile species which should be able to avoid project impacts; therefore, impacts to bluefish are expected to be negligible.
- **Summer Flounder** – Impacts to summer flounder larvae are expected to be negligible. This species spawns over the continental shelf and larvae may drift into estuaries of higher salinities. Juveniles and adult summer flounder could be expected to occur within the project site. Impacts to this species would be greater than other fish species due to their obligate bottom existence and the nature of the project.
- **American Shad, Hickory Shad, and Blueback Herring** – American shad, hickory shad, and blueback herring are an anadromous species that spawn in freshwater. There would be no impacts to eggs, larvae, or post larvae since these life stages occur in rivers or in low salinity estuaries. Impacts to juveniles and subadults would be negligible. These life stages would be transient to the project site during their out-migration. Since herring are highly mobile species, these fish should be able to avoid bank stabilization activities.
- **Striped Bass** – Impacts to striped bass are similar to those of the herring species above. Since striped bass are anadromous, there would be no impacts to eggs, larvae, or post larvae as these life stages occur in rivers or low salinity estuaries. Juveniles and subadults would be transient to the project site during their out-migration; however some juveniles and second-year subadults would remain in

the project area to forage. Impacts to these life stages would be negligible, since striped bass are a highly mobile species that should be able to avoid bank stabilization activities.

- **Shortnose Sturgeon and Atlantic Sturgeon** – Shortnose sturgeon are an anadramous species. There would be no impact to eggs, larvae, or post larvae since these life stages occur within rivers or estuaries with lower salinities. Juvenile and subadults are expected to be transient to the project area, however this species prefers lesser saline areas of estuaries. Impacts to the shortnose sturgeon are expected to be negligible, since they are a highly mobile species which should be able to avoid bank stabilization activities.
- **Atlantic Sturgeon** - Atlantic sturgeon are an anadramous species. There would be no impact to eggs, larvae, or post larvae since these life stages occur within rivers or estuaries with lower salinities. Juvenile and subadults could occur within the project area as they tend to occur over large areas in estuaries with wide salinity range. Atlantic sturgeon are a highly mobile species, therefore impacts would be negligible.

B. EFH Estuarine Areas:

The proposed project is located in an area identified as estuarine areas of EFH. The EFH categories potentially impacted include estuarine emergent wetlands, oyster reefs and shell banks, intertidal flats, and the estuarine water column. There were no marine areas of EFH located in the project area, but the following marine areas are either located in the nearshore ocean or offshore from the project area: live / hard bottoms, coral and coral reefs, artificial / manmade reefs, *Sargassum,* and the marine water column. The paragraphs that follow detail the impacts analysis to EFH estuarine areas as a result of the proposed project.

The entire unnamed island where the lighthouse is located is characterized as an estuarine intertidal wetland. During a 2008 site visit, it was observed that the lighthouse is located on a small island, almost completely composed of eastern oyster shells (*Crassostrea virginica*), portions of which are live oyster reefs and other portions which are dead shell. Other live bivalves present include the Atlantic ribbed mussel (*Geukensia demissa*). Very sparse areas of saltmarsh cordgrass were also present at the site along with tidal pools and the macroalgae known as sea lettuce (*Ulva lactuca*). During this site visit, it was determined that the island in its entirety is an ***estuarine intertidal mollusk reef*** (E2RF2 wetland by Cowardin classification). Besides being composed primarily of live oyster reef and oyster shells, two small areas of saltmarsh cordgrass (approximately 5 ft by 5 ft) exist on the island, but are not the dominant substrate. The island is considered an intertidal wetland because intertidal wetlands are defined as areas out to the ordinary low, low tide line. Additionally, the island is considered intertidal because it is exposed and flooded at certain times during the day, versus being continuously submerged (Cowardin 1979). The areas immediately surrounding the island are characterized as an ***estuarine subtidal mollusk reef*** (E1RF2 wetland by Cowardin classification) and the areas surrounding the island include the estuarine water column. Estuarine, emergent wetlands (salt marsh) are located along the shoreline of the adjacent Cockspur Island and

beyond at McQueens Island and other shoreline locations in the vicinity of the project. The primary functions provided by this estuarine intertidal wetland are biotic; it provides fisheries and benthic habitat (during high tide) and provides wildlife habitat (during low tide) to aquatic avian species.

Long-term, minor, adverse impacts to estuarine intertidal wetlands are anticipated as a result of the material revetment and fill placed on the island, which will convert the island from an oyster reef habitat that is submerged twice daily, to a low saltmarsh habitat (planted with saltmarsh cordgrass and interspersed with oysterbeds) that is submerged less frequently on a daily basis. It has been estimated that approximately 1.0 acres of fill material on the interior portions of the island would be required and that approximately 572 linear feet of revetment (corresponding to 0.5 acres of wetland impact) surrounding the island would be required for shoreline protection. Therefore, a total of approximately 1.5 acres of estuarine intertidal wetlands would be affected by the Preferred Alternative. However, the fill portion of the project, with the exception of the planned maintenance walkway(s), will be planted with saltmarsh cordgrass and interspersed with oysterbeds for wetland mitigation. Although minor, adverse impacts to estuarine intertidal wetlands would occur as a result of the Preferred Alternative, the long-term, moderate, beneficial impacts associated with protecting the island and existing intertidal wetlands from erosion and ultimate loss as well as the planned wetland mitigation would occur and would far outweigh the adverse impacts to estuarine intertidal wetlands.

Long-term, minor adverse impacts to shellfish would occur when the fill material is placed over portions of the existing island, covering approximately 1.5 acres of live/dead oyster and mussel reef habitat. However, the use of stone as riprap along the shoreline would provide additional habitat that could be colonized by oyster spat to create additional oyster reef. Additionally, an oyster reef restoration project component is also planned as part of the estuarine wetland mitigation. The restored island habitat and oyster reef area would aid in the filtration of sediments and nutrients, thus improving water quality. Therefore, estuarine areas such as oyster reefs and shell banks and intertidal flats for fish species residing in or depending on the marsh ecosystem surrounding the project area would be improved. By raising the bank to the level of high tide, the damage from waves would be minimized. Further erosion of the oyster reef island would diminish.

The minor loss of estuarine intertidal wetland areas would not contribute to the cumulative impacts to this resource. Approximately 90 percent of the immediate adjacent lands of the monument are classified as wetland. On Cockspur Island alone, there are over 350 acres of tidal salt marsh located adjacent to the island that houses the lighthouse. The park unit also includes the nearby McQueens Island, which encompasses over 4,450 acres of tidal salt marsh. Therefore, the entire park unit has a total of over 4,800 acres of salt marsh that are subject to daily inundation of a six to ten foot tide. These two islands that make up the site were, before human intervention, primarily salt marsh. The monument preserves and protects a sizeable portion of one of the most productive and prolific ecosystems that exists today. Compared to the limited amount of development in the park unit that may be contributing to the loss of salt marsh wetlands, the NPS would not be contributing greatly to cumulative estuarine wetland impacts. The

proposed wetland mitigation plan (including the oyster restoration project) would restore an area of the park that was historically a low salt marsh, and would have a long-term, beneficial impact to the wetland systems at the monument.

There are no HAPCs within the project area, but the following HAPCs are located in the vicinity of the project: Council-designated Artificial Reef Special Management Zones and State-designated Areas of Importance of Managed Species. Also, Hermatypic (reef-forming) Coral Habitat and Reefs as well as Hoyt Hills and Sargassum habitat are located offshore from the project area. There are also hard bottoms identified in the nearshore ocean. Submerged aquatic vegetation (SAV) has been defined as an HAPC, but no SAV has been identified in or near the project vicinity.

3. NPS' views regarding effects:

The Proposed Action would not have a substantial individual adverse impact on EFH or fisheries managed by the South Atlantic Fishery Management Council and NOAA-Fisheries. Most impacts to juvenile, subadult, and adult life stages would be negligible, since many of the species at these life stages are typically strong swimmers and highly mobile. Impacts to earlier life stages including larvae, and post larvae would be greater than those of later life stages, but still minimal. Most species spawn offshore and post larvae and larvae occur in areas with greater salinities than the project site.

Most of the impacts to EFH species would be due to the loss of benthic invertebrates, estuarine water habitat, oyster reef habitat, and estuarine intertidal wetland. These habitats and benthic invertebrates are available along the shoreline of Cockspur Island, McQueens Island, and Tybee Island. The impact area is small and not unique relative to the overall acreage of these habitats in coastal Georgia. Impacts from turbidity can reduce photosynthesis activity of pelagic and benthic algae. The respiratory structures of early life history stages of fish and invertebrates may be impacted due the temporary increase in suspended sediments during bank stabilization activities. Although minor, adverse impacts to estuarine intertidal wetland areas would occur as a result of the Preferred Alternative, the long-term, moderate, beneficial impacts associated with protecting the island and existing estuarine intertidal wetlands from erosion and ultimate loss would occur and would far outweigh the adverse impacts to these areas.

4. Proposed mitigation, if applicable:

There is no proposed mitigation for the proposed project regarding EFH species, however, project impacts to EFH species would be avoided if listed fish species are observed during bank stabilization activities. Additionally, project impacts to both EFH species and habitat have been minimized because the length and the width of the proposed bank stabilization has been designed to create the smallest footprint possible while still providing stabilization to the islet and the Cockspur Island Lighthouse. Mitigation is proposed for impacts EFH estuarine areas, as described in detail in the following paragraphs and in Appendix A of the Environmental Assessment (EA) for this project.

However, there is mitigation proposed for the project regarding EFH estuarine areas. The mitigation proposed in exchange for the estuarine intertidal wetland impacts would assure no net loss of wetlands. The NPS uses a more conservative estimate of wetlands, which includes requiring only one of the three criteria that the U.S. Army Corps of Engineers (USACE) requires for the characterization of a wetland. Therefore, a *Statement of Findings* (SOF) describing wetlands and impacts according to the NPS definition are included in Appendix A of the EA for this project. This SOF also includes a wetland mitigation plan to offset the effects of the Preferred Alternative. For this project, the estimated impact to estuarine wetlands is estimated at 1.5 acres. The NPS proposes at a ratio of 1 to 1 to plant 0.9 acres of the fill area on the unnamed island with saltmarsh cordgrass interspersed with oysterbeds and restore an additional area (0.6 acres) at the monument on Cockspur Island where spoil was historically deposited in the low saltmarsh, totaling 1.5 acres of wetland mitigation. The wetland impacts discussed in this section represent the most current approximations at this time; however, this acreage may increase/decrease after final design. Historically, spoil was deposited on portions of Cockspur Island when ditches were excavated for mosquito control activities. These low saltmarsh areas were once dominated by saltmarsh cordgrass and are located adjacent to the current dike system that surrounds the fort. It is expected that once the spoil deposits are removed from the historic wetlands and the areas are re-planted with saltmarsh cordgrass, the site will once again function as a natural, low salt marsh. Additional benefits include returning the site back to an accurate cultural landscape as well as creating a more contiguous wetland area at the monument. The type of wetland restoration that will occur to satisfy mitigation requirements will be low saltmarsh (*Spartina alterniflora*). Although the current wetland on the island is characterized as an estuarine intertidal mollusk reef, historically, this area was low salt marsh. Therefore, the functions gained through wetland restoration would be similar to historical functions lost.

An oyster reef restoration project component is also planned as part of the estuarine wetland mitigation. The oyster reef component would be located at low areas near the proposed stabilization at the unnamed island, although specific details of this project are not available at this time. By raising the bank to the level of high tide, the damage from waves would be minimized and further erosion of the oyster reef island would halt. The restored island habitat and oyster reef area would aid in the filtration of sediments and nutrients, thus improving water quality. Therefore, estuarine areas such as oyster reefs and shell banks and intertidal flats for fish species residing in or depending on the marsh ecosystem surrounding the project area would be improved. Additionally, habitat for fish species residing in or depending on the marsh ecosystem at the project area would be improved.

5. References

Cowardin et. al. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Fish and Wildlife Service. Publication FWS/OBS-79/31. U.S. Government Printing Office, Washington, D.C. December.

National Oceanic and Atmospheric Administration (NOAA). 2001. *Essential Fish Habitat: A Marine Fish Habitat Conservation Mandate for Federal Agencies*. National Marine Fisheries Service, Habitat Conservation Division, Southeast Regional Office. Revised in October (Original Publication in February 1999).

Errata Sheet on the Environmental Assessment for the Proposed Bank Stabilization at Cockspur Island Lighthouse

Comments were received during the public comment period that warrants the preparation and distribution of an errata sheet on the above referenced Environmental Assessment. This sheet will become part of the project file. The comments and responses are as follows:

1. ***Comment:*** Thank you for including me in the mailing on the lighthouse preservation efforts. I am no authority on marine matters or construction. However, I was discussing the proposed project with a friend who has lived in Savannah his entire life, owns a boat business, and is very interested in historic preservation. His suggestion is to build a cofferdam around the lighthouse and fill it with small rocks about the size of a football. With the area stabilized, there could be a walkway, dock, or some other structure built to facilitate access.

    a. **Response**: The suggestion above is similar to the proposed action, which includes placing riprap along the shoreline and filling portions of the interior of the island with fill material designed to recreate the historic 1860s landscape. As stated in the EA, the surface would be interspersed with suitably sized stones of Georgia (GA) Type 3 Riprap to mimic the historic Coast Guard riprap and saltmarsh cordgrass (*Spartina alterniflora*) marsh plantings would be interspersed with re-established oysterbed areas. An oystershell path would extend from the boat landing around the inner perimeter of the riprap to facilitate future project inspections and maintenance. The fill material would also provide a safe walking surface for park visitors and opportunities for recreational boaters and kayakers to access the small island.

2. ***Comment***: My concerns rest with the decision to leave part of the retaining wall open and open to the outgoing tide, as well as leaving the parcel of land once filled with rip rap, oysters & Spartina, approximately 1 to 1 1/2 feet below the hi tide level. I understand The Corps desire to restore and stabilize the land to the Historic nature it was, but we now have vessels whose wake could soon leave the land area in the same position it is in now. I know the Corps wants to do a good job and claim their work will last for a great number of years (50). Yet I am still concerned about the above stated issues and at the same time do not want to keep the Lighthouse in peril much longer.

    a. **Response**: A site specific engineering design analysis was completed to stabilize the unnamed island with a unique revetment design and beach nourishment plan in order to preserve the lighthouse for future posterity. The detailed design analysis was approved by the USACE and calculated values such as wind stress factor, design wave height, and armor stone size to protect the lighthouse and the northeast shoreline of the island. The revetment wraps 180 degrees around the northeast corner of the island to absorb the highest wave energy. To maintain historical accuracy of the site, construction is only located where it is necessary, the revetment closely follows the shoreline of the island, and the revetment is partially underwater at high-tide. The revetment design was based on the Hudson equation and the weight of armor stone. The plan was designed to provide defense as sea levels rise; the crest height was set higher than today's average mid-tide conditions, and the crest height is sufficient at high tide to act as a breakwater for larger waves. Therefore, the detailed design analysis incorporates the concerns listed above.

3. ***Comment:*** NOAA Fisheries at the Southeast Regional Office commented on the EFH Assessment (Appendix D of the EA) regarding habitats that are identified as EFH by the South Atlantic Fishery Management Council and that will be affected by the project, specifically oyster beds as well as saltmarsh and intertidal flats. Additionally, NOAA Fisheries requested information regarding the stockpiling and re-use of the live oysters and dead shell that currently exist around the Cockspur Island lighthouse.

    a. **Response:** The EFH Assessment was updated to address the questions and concerns of NOAA Fisheries and incorporated saving and reusing the live oysters and shell hash at the site. NOAA Fisheries reviewed and accepted the updated EFH Assessment, which completed EFH consultation with NOAA Fisheries. The updated EFH Assessment is attached to the FONSI.

4. ***Comment:*** Georgia Department of Natural Resources Historic Preservation Division wrote in a letter dated May 21, 2009 that the proposed project would have no adverse effect to historic properties and that Section 106 compliance for this project is complete.

    a. **Response**: The GDNR letter was included in the Administrative Record and in Appendix C - Agency Correspondence of the EA.

5. ***Comment:*** NOAA National Marine Fisheries Service (NMFS) responded to NPS with a letter dated July 15, 2009 that concluded consultation responsibilities under the Endangered Species Act for species under NMFS' purview.

    a. **Response**: The NOAA NMFS letter was included in the Administrative Record and in Appendix C - Agency Correspondence of the EA.