



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
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REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

PECK'S LAKE STAGING AREA
OPERATIONS AND MAINTENANCE ACTIVITIES
ST LUCIE INLET
MARTIN COUNTY, FLORIDA

FINDING OF NO SIGNIFICANT IMPACT

I have reviewed the Environmental Assessment (EA) for the proposed action. This Finding incorporates by reference all discussions and conclusions contained in the Environmental Assessment enclosed hereto. Based on information analyzed in the EA, reflecting pertinent information obtained from agencies having jurisdiction by law and/or special expertise, I conclude that the proposed action will not significantly impact the quality of the human environment and does not require an Environmental Impact Statement. Reasons for this conclusion are in summary:

- a. The proposed action is to offload dredged material from St Lucie Inlet at Peck's Lake and transfer material via pipeline for beach placement at the Hobe Sound Wildlife Refuge. Several endangered or threatened species were investigated for potential impacts including smalltooth sawfish and West Indian manatee. No adverse affects are expected to occur to these species from the proposed action.
- b. State water quality standards will be met.
- c. The proposed project has been determined to be consistent with the Florida Coastal Zone Management Program.
- d. Consultation with the State Historic Preservation Officer indicated that no sites of cultural or historical significance will be affected.
- e. Measures to eliminate, reduce, or avoid potential impacts to fish and wildlife resources will be implemented during project construction.

In consideration of the information summarized, I find that the proposed action will not significantly affect the human environment and it does not require the preparation of an Environmental Impact Statement.

12/07/11
Date


ALFRED A. PANTANO, JR.
Colonel, Corps of Engineers
Commanding

**ENVIRONMENTAL ASSESSMENT
ON
PECK’S LAKE STAGING AREA
OPERATIONS AND MAINTENANCE ACTIVITIES
ST LUCIE INLET
MARTIN COUNTY, FLORIDA**

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1 PROJECT PURPOSE AND NEED

1.1 PROJECT AUTHORITY

Reference is made to Section 201 of Public Law 89-298 dated October 27, 1965, Title 11- Flood Control Act of 1965 (79 STAT. 1073; 42 USC 1962d-5), as amended by Section 131 of the 1976 Water Resources Development Act (90 STAT. 2928). In accordance with Section 201, the House and Senate Public Works Committees approved the St. Lucie, Florida Federal navigation project by Resolutions dated May 9, 1974 and May 31, 1974 respectively.

PROJECT LOCATION

St Lucie Inlet is on the Atlantic Coast of Florida, in Martin County. (Figure 1)

1.2 PROJECT NEED OR OPPORTUNITY

Located in northeast Martin County, St. Lucie Inlet separates Hutchinson Island to the north and Jupiter Island to the south. Initially excavated by local interests in 1892 to provide access between the Atlantic Ocean and the Indian River, the inlet has been maintained as a federal navigation project since 1945. Efforts to stabilize the inlet through the construction of the north jetty during the late 1920s exacerbated erosion. The jetty began to trap sand moving south, thereby stabilizing the northern shoreline and causing shoreline recession south of the inlet. Additional structures, including a south jetty, offshore breakwater and sediment impoundment basin have been added over the years. However, due to interruption of long-shore sand transport between the barrier islands to the north and south of the inlet, erosion continues today.

In 1995, the St. Lucie Inlet Management Plan (IMP) was adopted and called for corrective measures to mitigate the erosional impacts of the inlet which deprives the down-drift shoreline of, on average, 182,000 cubic yards of sand annually. The structural corrective measures identified in the IMP have been accomplished through cooperative partnership between the U.S. Army Corps of Engineers Jacksonville District (Corps), the State of Florida and Martin County, the local sponsor. Sand bypassing at the equivalent rate of 182,000 cubic yards annually, also called for by the IMP, continues under the St. Lucie Inlet Federal Navigation Project. Maintenance dredging and bypassing of beach quality sand is also accomplished through partnership between the Corps, the State and the local sponsor. As the inlet is maintained, opportunities for the placement of beach quality material on the down-drift beaches are identified.

The Corps is proposing to dredge the entrance channel to the authorized depth of -16-feet deep plus 2-feet of allowable over-depth at mean lower low water (MLLW) and adjacent impoundment basin to -19-feet deep plus 2-feet of allowable over-depth. The dredged material would be placed on the beach from R-61 to R-67 as described in the June 2000 St. Lucie Inlet Navigation Improvements Environmental Assessment (EA).

1.3 AGENCY GOAL OR OBJECTIVE

The objective of this project is to perform maintenance actions that would alleviate shoaling of the inlet's entrance channel and impoundment basin.

1.4 RELATED ENVIRONMENTAL DOCUMENTS

Related National Environmental Policy Act (NEPA) and operations and maintenance documents are listed below:

- Environmental Assessment and Finding of No Significant Impact, Maintenance Dredging, St. Lucie Inlet, Martin County, Florida. December, 1994.
- St. Lucie Inlet Management Plan Sand Transfer Element Implementation, July 1996
- Environmental Assessment and Statement of Findings (EA/SOF) for Department of the Army (DA) Permit SAJ-1996-05620, St. Lucie Inlet Dredging, 17 December, 1997
- Environmental Assessment and Finding of No Significant Impact, St. Lucie Inlet Navigation Improvements, Martin County, Florida. 8 June 2000.

1.5 DECISIONS TO BE MADE

This Supplemental Environmental Assessment will evaluate alternative transfer methods for dredged materials to the placement areas and analyze their associated impacts. The actual dredging of the channel and other disposal alternatives are addressed in previous NEPA documents as listed above in part 1.4.

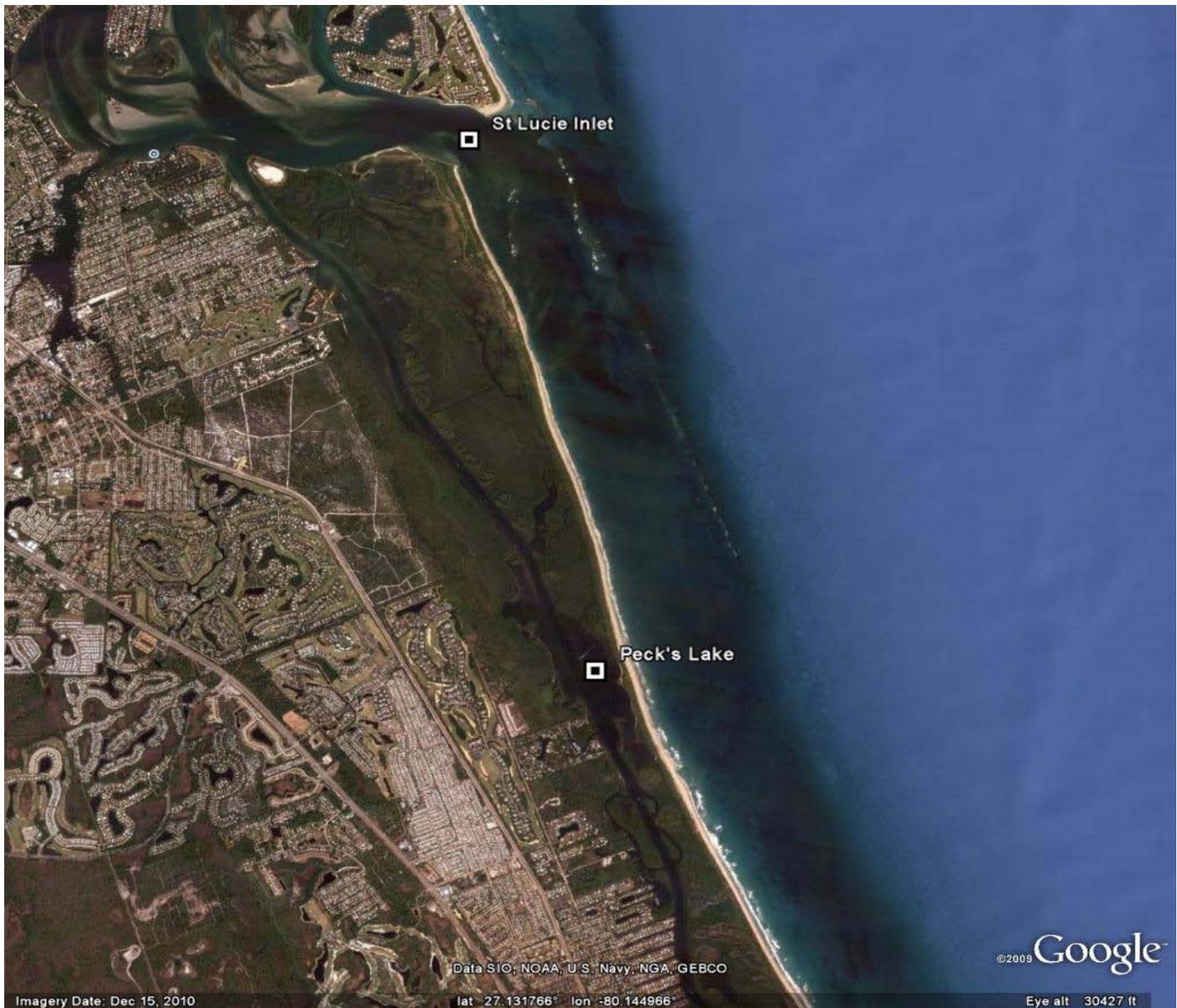


Figure 1. Project Location

1.6 SCOPING AND ISSUES

1.6.1 Issues Evaluated in Detail

The following issues were identified as relevant to the proposed action and appropriate for detailed evaluation:

- Impacts to federally protected species occurring or potentially occurring within the project area (i.e., West Indian manatee);
- Impacts to vegetation (seagrasses);

- Essential Fish Habitat (EFH)
- Water quality degradation, specifically turbidity levels;
- Impacts to navigation;
- Cultural Resources
- Recreation;
- Modification of local aesthetic qualities.
- Noise

1.6.2 Issues Eliminated from Detailed Analysis

The proposed action is expected to have little or no impact on air quality, soils, housing, or population dynamics. Therefore, the above issues were not considered important or relevant to the proposed action.

1.7 PERMITS, LICENSES, AND ENTITLEMENTS

Pursuant to Section 401 of the Clean Water Act, water quality certification from the State of Florida is required for the proposed maintenance actions. The Florida Department of Environmental Protection permit #43-294982-9, modification #0269814-006-JN and Statutory Time Extension 0269814-005-JN are current and cover the proposed actions associated with this project.

In accordance with Section 7 of the Endangered Species Act (ESA), consultation of the proposed action with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) have occurred and associated Biological Opinions for the proposed actions associated with this project are included in Appendix A.

2 ALTERNATIVES

The alternatives section is perhaps the most important component of this Supplemental Environmental Assessment (EA). This section describes the no-action alternative and the proposed action. Additional project alternatives were described in the 2000 EA and will not be discussed in this assessment. The beneficial and adverse environmental effects of the alternatives are presented in comparative form, providing a clear basis for choice to the decision maker and the public. A preferred alternative was selected based on the information and analysis presented in the sections on the Affect Environment and Probable Impacts.

2.1 TYPE OF DREDGING EQUIPMENT

The Corps does not normally specify the type of dredging equipment to be used. This is generally left to the dredging industry to offer the most appropriate and competitive equipment available at the time. Nevertheless, certain types of dredging equipment are normally considered more appropriate depending on the type of material, the depth of the channel, the depth of access to the disposal or placement site, the amount of material, the distance to the disposal or

placement site, the wave-energy environment, etc. A more detailed description of types of dredging equipment and their characteristics can be found in Engineer Manual, EM 1110-2-5025, *Engineering and Design - Dredging and Dredged Material Disposal*. This Engineer Manual is available on the internet at

<http://140.194.76.129/publications/eng-manuals/em1110-2-5025/entire.pdf>

2.2 DESCRIPTION OF ALTERNATIVES

Alternatives for maintenance dredging and placement locations have been analyzed in a previous National Environmental Policy Act (NEPA) document for St. Lucie Inlet (USACE EA 2000). Previous NEPA documentation analyzed transferring dredged material via pipeline south to the designated placement areas. The pipeline would be located behind or landward of the existing dunes from the south shore of the inlet to the beach placement template.

The alternatives discussed in this document include transfer methods of moving material between the dredging location and placement area. Specifically, alternatives presented in this section outline transferring dredged material via barge along the Intercoastal Waterway (IWW) and pumping across a pipeline corridor at Peck's lake as was authorized in USACE permit #199605620 (IP-KE).

2.2.1 ALTERNATIVE 1: NO ACTION (STATUS QUO)

Alternative 1, the No Action Alternative would continue to dredge approximately 600K cubic yards of beach quality material from the St Lucie entrance channel and impoundment basin. Dredged material would be transferred via pipeline down an existing pipeline corridor, approximately 4 miles long to the Hobe Sound Wildlife Refuge placement areas (R-59 to R-69), or material would be placed in a designated nearshore disposal area south of the inlet near R-88 to R-100 (USACE 2000).

2.2.2 ALTERNATIVE 2: TRANSFER DREDGE MATERIAL AT PECK'S LAKE

Alternative 2 proposes to transfer dredged material south down the IWW by barge to a staging area located at Peck's Lake (Figure 2). The staging area at Peck's Lake would have a spudded platform where barges would tie up against (Figure 3). Water would be added to the material to reslurry the sediments. Dredged material would be hydraulically transferred via pipeline across the berm to the beach template. Along the identified pipeline corridor, approximately 200 feet of pipeline (18 to 30 inch) would run west to east to the beach template, with additional pipe added as needed to run north or south to fill the template from approximately R-59 to R-69.

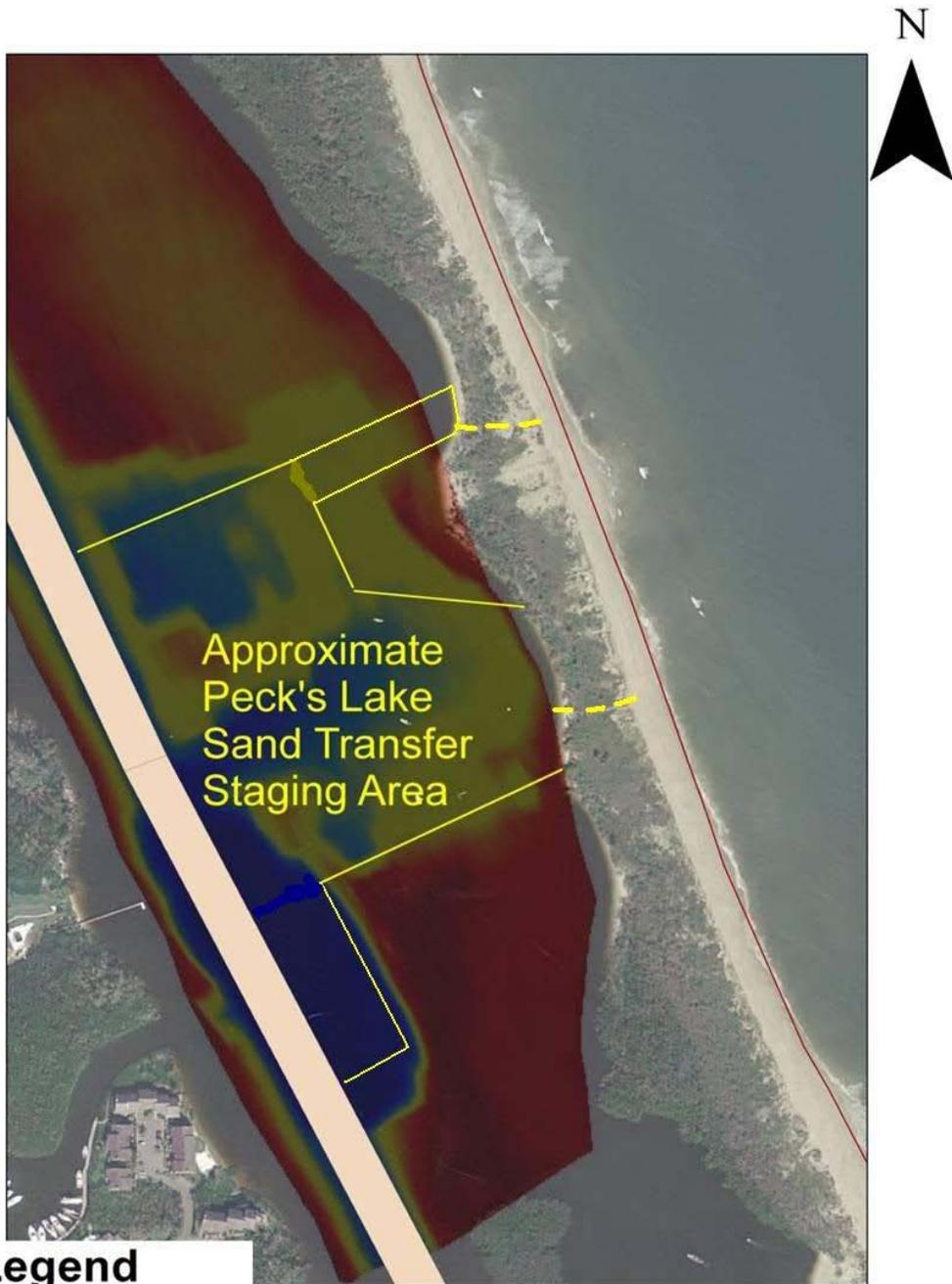


Figure 2. Project Area at Peck's Lake



Figure 3. Hydraulic Unloader with Barge

2.3 COMPARISON OF ALTERNATIVES

Table 1 lists alternatives considered and summarizes the major features and consequences of the proposed action and alternatives. See Section 4.0 Environmental Effects for a more detailed discussion of impacts of alternatives.

Table 1: Summary of Direct and Indirect Impacts

ALTERNATIVE ENVIRONMENTAL FACTOR	Alternative 1: No Action (Status Quo)	Alternative 2: Transfer at Peck's Lake
THREATENED AND ENDANGERED SPECIES	May affect, but not likely to adversely affect, with implementation of standard protection measures.	May affect, but not likely to adversely affect, with implementation of standard protection measures.
WATER QUALITY	Short-term localized increase in turbidity at the dredge site and placement area.	No impacts expected at Peck's Lake
ESSENTIAL FISH HABITAT	Estuarine and Marine water column with unconsolidated sediment and ocean high salinity surf zone habitats would be impacted during dredging and placement activities.	Estuarine water column in the IWW consists of unconsolidated sediments, no additional impact

ALTERNATIVE ENVIRONMENTAL FACTOR	Alternative 1: No Action (Status Quo)	Alternative 2: Transfer at Peck's Lake
FISH AND WILDLIFE RESOURCES	Minor impact during beach placement. Nesting, foraging, and resting shorebirds could be impacted during construction.	No additional impact
SEAGRASS AND MANGROVES	No adverse impact as avoidance measures are in place	No adverse impact as avoidance measures are in place
NAVIGATION	Short term impacts from dredging channel	Short term impacts to IWW boat traffic when barges are in transport
CULTURAL RESOURCES	No adverse effect to known historic properties.	No adverse effect to known historic properties.
RECREATION	Short-term disruption of recreation within channel and Beach.	Short-term disruption of recreation within the Peck's Lake area
AESTHETICS	Minor short-term adverse impact due to construction activities.	Minor short-term adverse impact due to construction activities
NOISE	Minor and temporary adverse effect.	Minor and temporary adverse effect

2.4 MITIGATION

The proposed action will not impact fish and wildlife resources requiring compensatory mitigation.

3 AFFECTED ENVIRONMENT

The Affected Environment section succinctly describes the existing environmental resources of the areas that would be affected if any of the alternatives were implemented. This section describes only those environmental resources that are relevant to the decision to be made. It does not describe the entire existing environment, but only those environmental resources that would affect or that would be affected by the alternatives if they were implemented. This section, in conjunction with the description of the "no-action" alternative forms the base line conditions for determining the environmental impacts of the proposed action and reasonable alternatives.

3.1 THREATENED AND ENDANGERED SPECIES

Manatees can be found in the inshore waters of the project channels and in the coastal waters of the Atlantic Ocean primarily during migration. The proposed work does not overlap any designated critical habitat for this species. Between 1992 and 2010 there have been 153 documented manatee mortalities in Martin County. The probable cause of death for 33 (21%) of these mortalities was watercraft (http://research.myfwc.com/manatees/search_summary.asp).

3.2 WATER QUALITY

Waters within the project area have been designated by the state of Florida as Class II - Shellfish Propagation or Harvesting. Generally, coastal waters where commercial shellfish harvesting occurs and Class III - Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife.

3.3 ESSENTIAL FISH HABITAT

Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act of 1996, waters and substrate within the project area have been identified as Essential Fish Habitat (EFH) by the South Atlantic Fishery Management Council (1998). EFH is defined as those waters and substrate necessary for fish to spawn, breed, feed, or grow to maturity. Estuarine/inshore EFH within the footprint of the project consists of estuarine water column with an unconsolidated substrate. There are also patches of seagrass in Peck’s Lake mainly along the shoreline and in shallow areas. Species managed by the NMFS that may occur within the project channel and Beach Placement Area can be found in Table 2, and possible prey species in Table 3. As discussed later in Section 4.3, the preferred alternative will implement minimization and avoidance measures to avoid adverse impacts to EFH.

Table 2. Federally Managed Species of Fish that May Occur within the Project Area.

Species	Life Stage	Substrate Preference*	
		Unconsolidated Sediment	Seagrass
Brown shrimp <i>Farfantepenaeus aztecus</i>	A, J, L	A, J, L	J, L
Pink shrimp <i>Farfantepenaeus duorarum</i>	A, J	A, J	J
White Shrimp <i>Litopenaeus setiferus</i>	A, J	A, J	J, L
Spiny Lobster <i>Panulirus argus</i>	A, J	A, J	A, J
Black seabass <i>Centropristis striata</i>	A, J	A, J	
Gag <i>Mycteroperca microlepis</i>	A, J	A, J	
Cobia <i>Rachycentron canadum</i>	J	J	
Mutton snapper <i>Lutjanus analis</i>	A, J	J	J

Gray snapper <i>Lutjanus griseus</i>	A, J, L	A, J, L	A, J, L
Lane snapper <i>Lutjanus synagris</i>	A, J	A, J	J
Yellowtail snapper <i>Lutjanus chrysurus</i>	A, J	J	J
White grunt <i>Haemulon plumieri</i>	A, J	A, J	A, J
Sheepshead <i>Archosargus probatocephalus</i>	A, J, L	A, J	J, L
Red drum <i>Sciaenops ocellatus</i>	A, J, L	A, J, L	J, L
Hogfish <i>Lachnolaimus maximus</i>	A, J	J	J
Spanish mackerel <i>Scomberomorus maculatus</i>	A, J	A, J	
Black drum <i>Pogonias cromis</i>	A, J	A, J	A, J
Southern flounder <i>Paralichthys lethostigma</i>	A, J	A, J	J

Table 3. Prey Species that May Occur within the Project Area.

Species	Life Stage	Substrate Preference*	
		Unconsolidated Sediment	Seagrass
Thinstripe hermit crab <i>Clibanarius vittatus</i>	A, J	A, J	
Horse conch <i>Pleuroploca gigantea</i>	A, J	A, J	A, J
Bay anchovy <i>Anchoa mitchilli</i>	A, J, L	A, J, L	L
Sheepshead minnow <i>Cyprinodon variegatus</i>	A, J, L	A, J, L	
Atlantic menhaden <i>Brevoortia tyrannus</i>	A, J, L	A	J, L
Bay scallop <i>Argopecten irradians</i>	A, J, L	A, J	A, J, L
Atlantic rangia <i>Rangia cuneata</i>	A, J, L	A, J, L	
Quahog <i>Mercenaria mercenaria</i>	A, J	A, J	
Grass shrimp <i>Palaemonetes pugio</i>	A, J		A, J
Striped mullet <i>Mugil cephalus</i>	A, J	A, J	A, J
Spot	A, J	A	J

Species	Life	Substrate Preference*	
<i>Leiostomus xanthurus</i>			
Atlantic croaker <i>Micropogonias undulates</i>	A, J	A, J	
Silversides <i>Menidia menidia</i>	A, J, L	A, J, L	A, J, L
American eel <i>Anguilla rostrata</i>	A, J, L	J, L	A, J, L

Source: South Atlantic Fishery Management Council 1998; Florida Museum of Natural History-Ichthyology website 2008.

*Substrate preference, unconsolidated sediment and seagrass habitats occur in or near the project area.
A=adult; J=juvenile; L=larvae

3.4 FISH AND WILDLIFE RESOURCES

Marine life common to east-central Florida can be found within the project channel and beach placement area. Sub-tidal oyster beds should not occur within the project channel due to depth and vessel traffic. Other macroinvertebrates commonly found in soft-bottom estuarine habitat within Florida include annelids, a variety of mollusks besides oysters, arthropods, sponges and polyps (Hoffman and Olsen 1982).

Shorebirds primarily utilize Florida beaches for resting and feeding but several species also prefer nesting sites in the upper beach zone. Terns (*Sterna* spp.), gulls (*Larus* spp.), sandpipers (*Tringa*, *Calidris*, and *Actitis* spp.), plovers (*Charadrius* spp. and *Pluvialis* spp.), skimmers (*Rynchops niger*), turnstones (*Arenaria interpres*), oystercatchers (*Haematopus palliatus*), sanderling (*Calidria alba*), dunlin (*Calidris alpine*), short-billed and long-billed dowitchers (*Limnodromus griseus* and *L. scolopaceus*), and willet (*Catoptrophorus semipalmatus*) primarily use Florida beaches for resting and feeding (Taylor Engineering, Inc. 2010). Shorebird species utilizing Florida beaches as nesting sites include the black skimmer (*Rynchops niger*), the least tern (*Sterna antillarum*), the royal tern (*Sterna maxima*), and the sandwich tern (*Sterna sandvicensis*) (Hill 2001). Members of the Audubon of Martin County conducted a piping plover and shorebird survey near the St. Lucie Inlet on January 31, 2011 (Audubon of Martin County 2011). The list of species observed during the survey is presented below in Table 4.

Table 4. List of species observed near the St. Lucie Inlet, Martin County in 2011.

Black skimmer	Osprey
Black vulture	Oystercatcher
Black-bellied plover	Piping plover
Brown pelican	Red-breasted merganser
Caspian tern	Ring-billed gull
Double-crested cormorant	Roseate spoonbill
Fish crow	Royal tern
Forster's tern	Ruddy turnstone

Great blue heron	Sanderling
Great egret	Sandwich tern
Herring gull	Semi-palmated plover
Killdeer	Snowy egret
Kingfisher	Tri-colored heron
Laughing gull	Turkey vulture
Least sandpiper	White ibis
Little blue heron	Willet
Magnificent frigatebird	Wood stork

In addition to the birds described above, the Florida scrub jay may also occur within the project area. The Florida scrub jay (*Aphelocoma coerulescens*) was listed as a federally threatened species in 1987 because of loss, fragmentation, and degradation of scrub habitats throughout Florida (USFWS 2007). On the Atlantic coast, scrub jays extend from Flagler to Palm Beach counties and nest in the spring. They have extremely specific habitat requirements and inhabit the xeric oak scrub community type. Xeric oak scrub is located west of Peck Lake and the Intracoastal Waterway, outside of the project area. However, Florida scrub jays are present within the HSNWR though sightings are uncommon (USFWS 1997).

3.5 SEAGRASS AND MANGROVES

Several species of seagrass could occur within the Peck's Lake area including turtle grass (*Thalassia testudinum*), star grass (*Halophila englemannii*), paddle grass (*Halophila decipiens*), shoal grass (*Halodule wrightii*), manatee grass (*Syringodium filiforme*), and widgeon grass (*Ruppia maritima*).

The Indian River Lagoon Surface Water Improvement and Management Plan directs the South Florida and St. John's River Water Management Districts to map seagrasses in the Indian River Lagoon at two to three year intervals. Indian River Lagoon seagrass maps have been prepared for the following years: 1986, 1989, 1992, 1994, 1996, 1999, 2001, 2003, 2005, 2007, and 2009. These lagoon-wide maps, based on aerial photographs, provide an overall picture of seagrass resources. Seagrass coverage was photointerpreted for Peck Lake by Avineon Inc. using 2009 aerial imagery and is included on the aerial photo map provided in Figure 3. FLUCCS codes were applied to the seagrass coverage polygons and included continuous seagrass (9116) and patchy seagrass (9113). Seagrasses within Peck Lake are mostly adjacent to the western coastline, with the exception of the continuous seagrass beds located in the middle of Peck Lake and on the eastern coastline, although avoidance measures are in place to avoid impacts to these resources (Figure 3).

Mangroves occur in dense, brackish swamps along coastal and tidally influenced, low energy shorelines. In Florida, mangrove forests extend from the Florida Keys to St. Augustine on the Atlantic coast and consist of three main species of true mangroves: the red mangrove (*Rhizophora mangle*), the black mangrove (*Avicennia germinans*), and the white mangrove (*Laguncularia racemosa*). The buttonwood (*Conocarpus erectus*) is often considered a fourth

mangrove species; however, it is classified as a mangrove associate because it lacks any morphological specialization common in true mangrove species (Hill 2009). Mangroves perform a vital ecological role, providing of habitat for a wide variety species as well as shoreline protection and stabilization (Hill 2009). The coverage of mangroves within the project area is depicted in the aerial photograph provided in Figure 3.

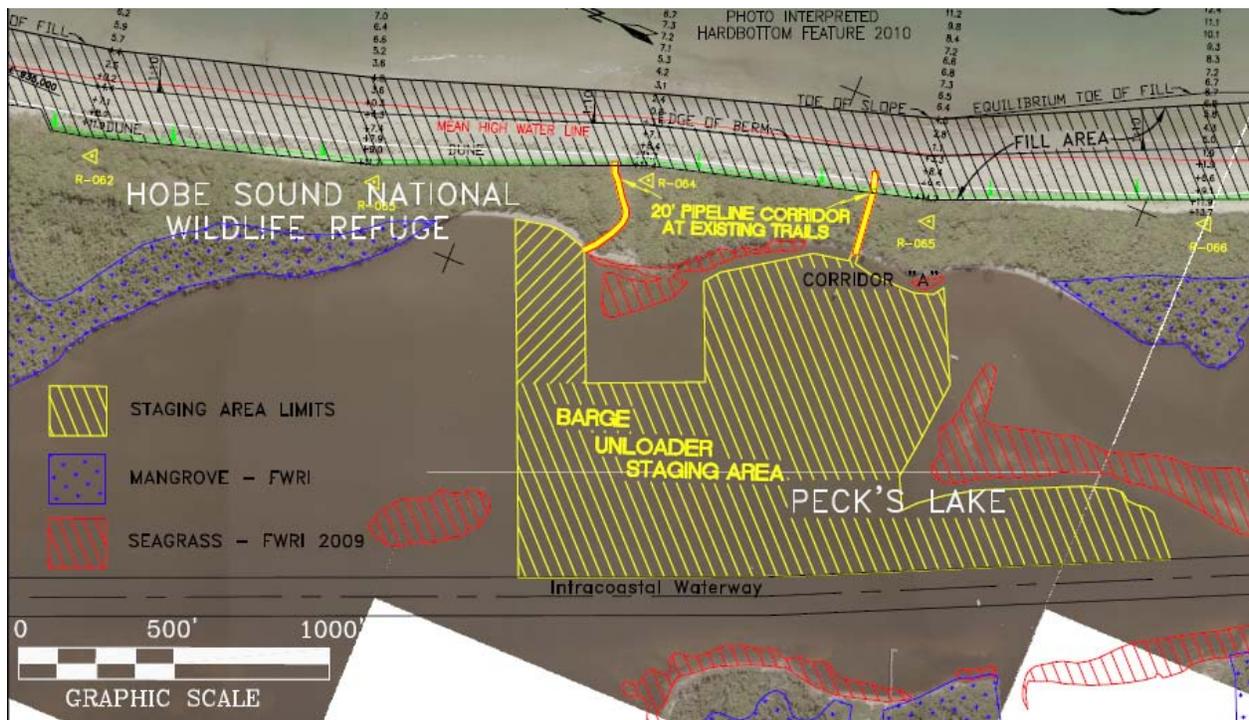


Figure 4. Seagrass and Mangroves in Peck's Lake

3.6 NAVIGATION

The Intracoastal Waterway in Florida annually transports over 1.7 million tons of commercial cargo and over 500,000 recreational vessels (FIND 2008).

3.7 CULTURAL RESOURCES

No historic properties are recorded within the project area. No historic properties will be affected by the project. Consultation with the Florida State Historic Preservation Officer (SHPO), appropriate federally recognized tribes, and other interested parties was initiated August 5, 1999 and is currently being updated. Consultation with the Florida SHPO, appropriate federally recognized tribes, and other interested parties will continue until completion of the project.

3.8 RECREATION

Peck's Lake serves as a recreation area for boaters and beach visitors. Recreational boat traffic regularly transits the IWW and St. Lucie Inlet in order to access the IRL and the Atlantic Ocean. In addition to boating, other locally available recreational activities include fishing, a beach crossover, and swimming.

3.9 AESTHETICS

The project area consists of a Federal navigation channel, adjacent to the lagoon like Peck's Lake area. The IWW and Atlantic coastline in the vicinity of the project are considered to be picturesque waterways.

3.10 NOISE

Background noise from IWW vessel traffic, urban beach, and nearby roadways appears to be minimal.

4 ENVIRONMENTAL EFFECTS

This section is the scientific and analytic basis for the comparisons of the alternatives. See table 1 in section 2.0 Alternatives, for summary of impacts. The following includes anticipated changes to the existing environment including direct, indirect, and cumulative effects.

4.1 THREATENED AND ENDANGERED SPECIES

4.1.1 No Action (Status Quo)

In accordance with Section 7 of the Endangered Species Act, informal consultation with the USFWS and NMFS was performed (Appendix A). The Corps has determined that the proposed dredge work may affect, but is not likely to adversely affect sea turtles in the water, manatees, or the smalltooth sawfish. This determination was based on the implementation of species specific protective measures and the type of dredging equipment typically used to dredge the channel. Regarding protection for manatees, the 2011 USFWS Statewide Programmatic Biological Opinion (SPBO) terms and conditions will be followed. Protection of swimming sea turtles and smalltooth sawfish are covered under the terms and conditions of the 1998 NMFS South Atlantic Division Regional Biological Opinion (SARBO). Additional information can be obtained from the 2000 EA.

4.1.2 Transfer Dredge Material at Peck's Lake

No additional impacts to Endangered Species would result from this alternative. Manatee standard conditions would apply to the Peck's Lake staging area.

4.2 WATER QUALITY

4.2.1 No Action (Status Quo)

The primary anticipated change in water quality at the dredging site would be a temporary increase in turbidity. According to the State of Florida's Class II water quality standards, turbidity levels during dredging or placement of dredged material are not to exceed 29 nephelometric turbidity units (NTUs) above background levels at the edge of normally a 150-meter mixing zone. In order to comply with this standard, turbidity will be monitored according to State protocols during the proposed dredging work. If at any time the turbidity standard were exceeded, those activities causing the violation would temporarily cease. As with the dredging activity, the primary change in water quality during placement of dredged material within the nearshore and beach would be a temporary increase in turbidity. These activities would be monitored similar to the dredging activity.

4.2.2 Transfer Dredge Material at Peck's Lake

Water quality would not be additionally impacted at the staging area as material would not be discharged to the water column. Minor turbidity could occur from the positioning of the barges to the platform, but these impacts would be temporary and only during operation of project vessels.

4.3 EFH

Section 3.3 describes the "existing conditions" of the Essential Fish Habitat (EFH), Federally managed fisheries, and associate species such as major prey species, including affected life history stages. The following subsections describe the individual and cumulative impacts of the proposed action(s) and alternatives on EFH, Federally managed fisheries, and associate species such as major prey species, including affected life history stages.

4.3.1 No Action (Status Quo)

EFH impacts and coordination with NMFS for the no action can be found in the 2000 EA. No significant impacts to EFH were noted from this assessment.

4.3.2 Transfer Dredge Material at Peck's Lake

As no impacts to seagrasses or mangroves are allowed per FDEP permit conditions, there are no expected significant affects to EFH associated with these habitats. Minimization and avoidance measures will be taken to avoid seagrass beds by setting up the staging area to exclude these habitats. The Corps has determined that any temporary impacts associated to unconsolidated sediment habitat would not adversely affect EFH and therefore there is no requirement to consult per 50 CFR 600.920.

4.4 FISH AND WILDLIFE RESOURCES

4.4.1 No Action (Status Quo)

Dredging the project channel would result in impacts to benthos. The bottom of the channel and impoundment basin would normally be re-colonized with organisms such as annelids and arthropods from adjacent similar habitats. In addition, since the channel is anticipated to be dredged every 3-7 years, benthic organisms should fully recover. Since this project would not place dredged material within the beach every year, re-colonization offshore of the placement area by benthic organisms could occur.

The Corps would implement its migratory bird protection plan if work is performed during the nesting season, April 1 through August 31. The plan would include monitoring the project site during the nesting season. If nests were found, then a buffer zone of at least 200 feet would be placed around each nest. No adverse impacts to migratory birds are anticipated with the migratory bird protection plan in effect. Other types of wildlife that utilize the sites would be temporarily displaced during construction. However, these sites would be infrequently used and therefore should be re-colonized by wildlife.

4.4.2 Transfer Dredge Material at Peck's Lake

Increased equipment and noise in the area could affect shorebirds nearby, but any additional impacts to fish and wildlife resources at Peck's Lake would be temporary and only persist during the dredging activity. It is not expected that any impacts to fish or benthic organisms would occur at the transfer site.

4.5 SEAGRASS AND MANGROVES

4.5.1 No Action (Status Quo)

Dredging activities will not affect seagrasses as the closest recorded grass beds are located 1200 feet to the west of the project. Mangroves would not be impacted as no recorded mangroves exist in the project area to be dredged.

4.5.2 Transfer Dredge Material at Peck's Lake

Although seagrass and mangroves exist in the area of the proposed project site, buffers and avoidance of any impacts to seagrass or mangroves are proposed. In order to identify and avoid seagrass, the Corps shall survey the area immediately adjacent to the staging area prior to construction. This same area would be surveyed after construction to determine if any adverse impact had occurred. As previously stated, it is the Corps' intention to avoid impacts these resources.

4.6 NAVIGATION

4.6.1 No Action (Status Quo)

Performing the proposed work would result in safer navigation conditions. Vessel traffic within the entrance channel would be temporarily disrupted due to construction activities. The use of the beach placement area would have minimal impact on navigation.

4.6.2 Transfer Dredge Material at Peck's Lake

Temporary impacts to navigation could occur from additional barge traffic between the dredge area and Peck's Lake staging area. These impacts would be minor and only persist during the construction project.

4.7 CULTURAL RESOURCES

4.7.1 No Action (Status Quo)

No historic properties will be affected.

4.7.2 Transfer Dredge Material at Peck's Lake

Coordination with the State Historical Preservation Office indicates no cultural resources would be affected by the alternatives (Appendix A).

4.8 RECREATION

4.8.1 No Action (Status Quo)

Recreational use of the beach area would be temporarily disrupted as dredged material would be placed on the beach. Recreational boating could be impacted at the dredge area due to equipment being present in the channel, but only during construction.

4.8.2 Transfer Dredge Material at Peck's Lake

Impacts to recreational boating/swimming would occur at Peck's Lake as a large portion of the area would be utilized as a staging area. During the construction project, pipeline would be present along the walking path from the Peck's Lake area to the beach, impeding recreational use of the beach. These impacts would be temporary and only during construction. An alternative walking path to the beach is located a few hundred feet to the south of the pipeline corridor which would lessen the impact. Additionally, transfer of material will occur during winter months, which is the lowest use season for recreational boating in the area.

4.9 AESTHETICS

4.9.1 No Action (Status Quo)

Construction activities within the entrance channel would temporarily impact the aesthetics of the area. Aesthetic resources, or visual appeal, of the beach area would be temporarily adversely impacted as dredged material would be placed within the placement template.

4.9.2 Transfer Dredge Material at Peck's Lake

Construction activities within Peck's Lake would temporarily impact the aesthetics in the area. The viewscape of the area would be impacted by the presence of equipment, throughout the construction of the project, but would return to pre-project conditions once completed.

4.10 NOISE

4.10.1 No Action (Status Quo)

Aesthetic resources, or visual appeal, of the beach area would be temporarily adversely impacted if dredged material would be placed at this location. The minimal noise created by construction equipment on the beach could have a minor effect on the local public utilizing the beach area.

4.10.2 Transfer Dredge Material at Peck's Lake

Noise associated with the transfer of material at Peck's Lake could impact individuals within the local area around Peck's Lake. The impacts would exist throughout the duration of the dredging project. Typical noise sources would include diesel engines from boats and the hydraulic offloader.

4.11 CUMULATIVE IMPACTS

Cumulative impact is 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 non-federal) or person undertakes such other actions" (40 CFR 1508.7).

There are no known local, state or Federal projects within the Peck's Lake project area currently planned, therefore there are no significant cumulative impacts expected. Future use of this area as a staging area for transfer of dredged material could have continued impacts to recreation, although projects would likely be scheduled to occur outside of the popular summer season.

4.12 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

4.12.1.1 IRREVERSIBLE

An irreversible commitment of resources is one in which the ability to use and/or enjoy the resource is lost forever. Other than the use of fuel, equipment and supplies, there would be no irreversible commitment of resources.

4.12.1.2 IRRETRIEVABLE

An irretrievable commitment of resources is one in which, due to decisions to manage the resource for another purpose, opportunities to use or enjoy the resource as they presently exist are lost for a period of time. The staging area at Peck's Lake would temporarily disrupt recreational activities and cause increased navigation of the IWW.

4.13 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

There would be an unavoidable impact to recreational activities at Peck's Lake during the construction period, although the project will be completed over the winter months when recreational activity would be decreased.

4.14 LOCAL SHORT-TERM USES AND MAINTENANCE/ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The proposed maintenance work is typically of short duration. Most fish species and other motile organisms like crabs should be able to avoid the staging area and equipment. Since the project area is limited in size, the long-term productivity of fish and other motile species should not be significantly affected.

4.15 INDIRECT EFFECTS

Maintaining the authorized depth of the project channel would benefit the shipping industry and local and statewide economies. This may contribute to increased development in adjacent areas.

4.16 COMPATIBILITY WITH FEDERAL, STATE, AND LOCAL OBJECTIVES

This project has wide support and is compatible with federal, state, and most local objectives including the Hobe Sound Wildlife Refuge.

4.17 CONFLICTS AND CONTROVERSY

The staging area in Peck's Lake would be set up in a manner that would avoid impacts to seagrass. Surveys would be performed before and after the work has been completed in order to attempt to determine if any impact had occurred. Recreational use of the Peck's Lake area would be impacted which may cause controversy with the local public. Noise associated with the staging area operations may impact individuals anchored, cruising, or residing on land in the immediate area, as the equipment would be operating twenty four hours a day during construction.

4.18 UNCERTAIN, UNIQUE, OR UNKNOWN RISKS

There are no uncertain, unique or unknown risks associated with the proposed staging area in Peck's Lake.

4.19 PRECEDENT AND PRINCIPLE FOR FUTURE ACTIONS

As this project involves maintenance dredging, there would be no precedent and or principle for future actions established.

4.20 ENVIRONMENTAL COMMITMENTS

The Corps and their contractors commit to avoiding, minimizing or mitigating for adverse effects during construction activities by including the following commitments in the contract specifications:

1. Standard protective measures for manatees shall be required.
2. The District's migratory bird protection policy shall be implemented.
3. The work shall be performed in compliance with State water quality standards.
4. Air emissions such as vehicular exhaust and dust shall be controlled.
5. The contracting officer would notify the contractor in writing of any observed noncompliance with Federal, State, or local laws or regulations, permits and other elements of the contractor's Environmental Protection Plan. The contractor would, after receipt of such notice, inform the contracting officer of proposed corrective action and take such action as may be approved. If the contractor fails to comply promptly, the contracting officer would issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions would be granted or costs or damages allowed to the contractor for any such suspension.
6. The contractor would train his personnel in all phases of environmental protection. The training would include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities to insure adequate and continuous environmental pollution control. Quality control and supervisory personnel would be thoroughly trained in the proper use of monitoring devices and abatement equipment, and would be thoroughly knowledgeable of Federal, State, and local laws, regulations, and permits as listed in the Environmental Protection Plan submitted by the contractor.
7. The environmental resources within the project boundaries and those affected outside the limits of permanent work under this contract would be protected during the entire period of this contract. The contractor would confine his activities to areas defined by the drawings and specifications.
8. As stated in the standard contract specifications, the disposal of hazardous or solid wastes would be in compliance with Federal, State, and local laws. A spill prevention plan would also be required.

4.21 COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

4.21.1 NATIONAL ENVIRONMENTAL POLICY ACT OF 1969

Environmental information on the project has been compiled and this Environmental Assessment has been prepared. The project is in compliance with the National Environmental Policy Act.

4.21.2 ENDANGERED SPECIES ACT OF 1973

The project has been fully coordinated under the Endangered Species Act and therefore, is in full compliance with the act. Consultation is ongoing with the USFWS for several species including

piping plover, nesting sea turtles and manatees. Species under the jurisdiction of NMFS are covered under the SARBO (1997).

4.21.3 FISH AND WILDLIFE COORDINATION ACT OF 1958

This project has been coordinated with the USFWS. A Coordination Act Report is not required for the proposed work. This project is in full compliance with the act.

4.21.4 NATIONAL HISTORIC PRESERVATION ACT OF 1966 (INTER ALIA)

The Corps determined that no historic properties will be affected by the proposed action.. Federal undertakings will comply with the Archeological and Historical Preservation Act of 1974 (16 USC 469-469c); Executive Order 11593, the Abandoned Shipwreck Act of 1987 (PL 100-298; 43 U.S.C. 2101-2106); the National Historic Preservation Act of 1966, as amended (16 USC 470); and the Advisory Council on Historic Preservation's implementing regulations under 36CFR800 (*Protection of Historic Properties*). Section 106 of the National Historic Preservation Act requires federal agencies to provide the SHPO (as agent to the Advisory Council on Historic Preservation) reasonable opportunity to evaluate and comment on any federal undertaking. The act requires the agency to coordinate with SHPO whether or not the agency believes there would be impacts to significant historic resources. The project is in compliance with each of these federal laws. Consultation with the Florida State Historic Preservation Officer (SHPO), appropriate federally recognized tribes, and other interested parties was initiated August 5, 1999 and is currently being updated. Consultation with the Florida SHPO, appropriate federally recognized tribes, and other interested parties will continue until completion of the project.

A copy of the letter(s) indicated above has been placed in Appendix A.

The proposed activity is also in compliance with the following:

- Archeological Resources Protection Act (96-95)
- Native American Graves Protection Act (PL 101-601)
- American Indian Religious Freedom Act (PL 95-341)
- Executive Order 11593 (Protection and Enhancement of the Cultural Environment)
- Executive Order 13007 (Indian Sacred Sites)
- Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments)
- Presidential Memo of 1994 on Government to Government Relations with Native American Tribal Governments
- Abandoned Shipwrecks Act
- Native American Graves Protection and Repatriation Act
- Archeological Resources Protection Act

4.21.5 CLEAN WATER ACT OF 1972

The project shall be in compliance with this act. As this project does not include discharge into waters of the United States, a 404 (b) 1 evaluation was not performed. As part of the 2000

NEPA document (which addresses certain discharges into waters of the United States) a Section 401 (b) 1 evaluation was performed and a FDEP WQC permit was obtained. All State water quality standards would be met.

4.21.6 CLEAN AIR ACT OF 1972

No air quality permits would be required for this project. This project has been coordinated with U.S. Environmental Protection Agency (EPA) and is in compliance with Section 309 of the Act.

4.21.7 COASTAL ZONE MANAGEMENT ACT OF 1972

A federal consistency determination in accordance with 15 CFR 930 Subpart C is not applicable to this action. As part of the 2000 NEPA document, a State consistency review was performed during the coordination of the 2000 EA and the project is consistent with the Florida Coastal Zone Management Program.

4.21.8 FARMLAND PROTECTION POLICY ACT OF 1981

No prime or unique farmland would be impacted by implementation of this project. This act is not applicable.

4.21.9 WILD AND SCENIC RIVER ACT OF 1968

No designated Wild and Scenic river reaches would be affected by project related activities. This act is not applicable.

4.21.10 MARINE MAMMAL PROTECTION ACT OF 1972

Protective measures for marine mammals such as manatees and dolphins shall be implemented. This project has been coordinated with the USFWS and NMFS. The work is in full compliance with the act.

4.21.11 ESTUARY PROTECTION ACT OF 1968

No designated estuary would be affected by project activities. This act is not applicable.

4.21.12 FEDERAL WATER PROJECT RECREATION ACT

Although the IWW and inlet provide recreational benefits, the principles of the Federal Water Project Recreation Act, (Public Law 89-72) as amended, are not applicable to this project which is Operations and Maintenance of existing Federal navigation channels.

4.21.13 SUBMERGED LANDS ACT OF 1953

The project would occur on submerged lands of the State of Florida. The project has been coordinated with the State and is in compliance with the act.

4.21.14 COASTAL BARRIER RESOURCES ACT AND COASTAL BARRIER IMPROVEMENT ACT OF 1990

There are no designated coastal barrier resources in the project area that would be affected by this project. These acts are not applicable.

4.21.15 RIVERS AND HARBORS ACT OF 1899

The proposed work would not obstruct navigable waters of the United States. The project is in full compliance.

4.21.16 ANADROMOUS FISH CONSERVATION ACT

Anadromous fish species would not be affected. The project has been coordinated with the National Marine Fisheries Service and is in compliance with the act.

4.21.17 MIGRATORY BIRD TREATY ACT AND MIGRATORY BIRD CONSERVATION ACT

No migratory birds would be affected by project activities. The project is in compliance with these acts.

4.21.18 MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT

The term "dumping", as defined in the Act (3[33 U.S.C. 1402](f)), does not apply to the disposal of material for beach nourishment or to the placement of material for a purpose other than disposal (i.e. placement of rock material as an artificial reef or the construction of artificial reefs as mitigation). Therefore, the Marine Protection, Research and Sanctuaries Act does not apply to this project.

4.21.19 MAGNUSON-STEVENSON FISHERY CONSERVATION AND MANAGEMENT ACT

The Corps has determined that the project would not have an impact on EFH or federally managed fish species occurring along the east-central coast of Florida. The project is in full compliance with the act.

4.21.20 E.O. 11990, PROTECTION OF WETLANDS

No wetlands would be affected by project activities. This project is in compliance with the goals of this Executive Order.

4.21.21 E.O. 11988, FLOOD PLAIN MANAGEMENT

This project would have no adverse impacts to flood plain management. Project is in compliance.

4.21.22 E.O. 12898, ENVIRONMENTAL JUSTICE

The proposed action would not result in adverse human health or substantial environmental effects. The work would not impact "subsistence consumption of fish and wildlife

4.21.23E.O. 13089, CORAL REEF PROTECTION

This project would not impact those species, habitats, and other natural resources associated with coral reefs.

4.21.24E.O. 13112, INVASIVE SPECIES

This project would not introduce any invasive species.

5 LIST OF PREPARERS

5.1 PREPARERS

Preparer	Discipline	Role
Pat Griffin, U.S. Army Corps of Engineers	Biologist	Principal Author
Wendy Weaver, U.S. Army Corps of Engineers	Archaeologist	Cultural Resources

5.2 REVIEWERS

This draft Environmental Assessment was reviewed by the supervisory chain of the Environmental Branch and Planning Division, as well as the Operations Division, Project Management, and the Office of Counsel of the U.S. Army Corps of Engineers, Jacksonville District.

6 PUBLIC INVOLVEMENT

6.1 SCOPING AND DRAFT EA

A Public Notice will be issued for this action to provide a 30 day public and agency comment period. The EA and Proposed Finding of No Significant Impact (FONSI) will be made available to the public. Comments on the EA and Proposed FONSI will be incorporated into the final document.

6.2 AGENCY COORDINATION

Coordination has been conducted with the appropriate agencies and is described in this report. Agency coordination letters are located in Appendix A.

6.3 LIST OF RECIPIENTS

Per the Public Notice, copies of the EA and Proposed FONSI will be made available to appropriate stakeholders and agencies. A list of stakeholders receiving notification of this document can be found within the Public Notice in Appendix B.

6.4 COMMENTS RECEIVED AND RESPONSE

A table summarizing comments received on the EA during the public review period and responses given will be included in this section of the final EA.

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APPENDIX A



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

Planning Division
Environmental Branch

Mr. Paul Souza, Field Supervisor
South Florida Field Office
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960

Dear Mr. Souza:

This letter initiates the 30-day coordination with your office under the Statewide Programmatic Biological Opinion (SPBO) for beach placement and shore protection in Florida. The U.S. Army Corps of Engineers (Corps) proposes to dredge the entrance channel and impoundment basin for St Lucie Inlet, located in Martin County, Florida and deposit the material onto the beaches to the south of the inlet. Regarding piping plover, a separate letter and Biological Assessment is being prepared requesting formal consultation.

If you have any questions, please contact me at 904 232-1665 or the technical point of contact. The technical point of contact for this action is Pat Griffin who can be reached at 904 232-2286.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric P. Summa", written over a printed name and title.

Eric P. Summa
Chief, Environmental Branch

Enclosures



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

JUN 30 2010

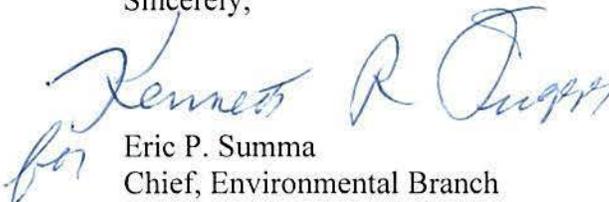
Mr. Paul Souza, Field Supervisor
South Florida Field Office
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960

Dear Mr. Souza:

Pursuant to Section 7(a) of the Endangered Species Act, please find enclosed the Biological Assessment for the St. Lucie Inlet Operations and Maintenance project, addressing the concerns of the threatened piping plover (*Charadrius melodus*) and critical habitat for wintering piping plover which is under the purview of the U.S. Fish and Wildlife Service (FWS). As this is an ongoing maintenance project, a Biological Opinion exists for this project discussing nesting sea turtles and the West Indian manatee, therefore these species are not discussed here. Based on the enclosed Biological Assessment, the U.S. Army Corps of Engineers has determined that the proposed action may affect piping plover. The Corps has determined that the project would not result in an adverse modification to critical habitat for wintering piping plover. The Corps requests formal consultation with the FWS regarding this species.

If you have any questions or need further information, please contact Mr. Pat Griffin at 904-232-2286, email Patrick.M.Griffin@usace.army.mil.

Sincerely,


for Eric P. Summa
Chief, Environmental Branch

Enclosure

**BIOLOGICAL ASSESSMENT TO
THE US FISH AND WILDLIFE SERVICE FOR
ST. LUCIE INLET OPERATIONS AND MAINTENACE DREDGING**

1. CONSULTATION HISTORY

U.S. Army Corps of Engineers (USACE) staff coordinated with the U.S. Fish and Wildlife Service (USFWS) on February 3, 1998 regarding the St Lucie Inlet dredging project.

On February 24, 1998 the USFWS responded to the USACE letter from February 3, 1997, indicating the proposed action was not likely to affect any listed species under the USFWS jurisdiction.

March 21, 2001 the USACE sent the USFWS a letter requesting a Biological Opinion (BO) regarding the summer excavating of the St Lucie Inlet impoundment basin.

On April 18, 2001 the USFWS mailed a BO to the USACE regarding the excavation of the St. Lucie Inlet impoundment basin; including an incidental take statement for relocating sea turtle nests.

2. PROJECT AUTHORITY

Reference is made to Section 201 of Public Law 89-298 dated October 27, 1965 – Flood Control Act of 1965 (79 STAT .1073; 42 USC 1962d-5), as amended by Section 131 of the 1976 Water Resources Development Act (90 STAT. 2928). In accordance with Section 201, the House and Senate Public Works Committees approved the St. Lucie, Florida Federal navigation project by Resolutions dated May 9, 1974 and May 31, 1974 respectfully.

3. PROJECT LOCATION

St Lucie Inlet is located in Martin County, Florida. The project area includes the entrance and interior channel plus the impoundment basin which is located south of the north jetty, inside the inlet entrance (Figure 1).

4. PROJECT DESCRIPTION

The proposed maintenance dredging project will fully restore the authorized navigation depths of -16 feet & -10 feet mean lower low water (mllw) and -7 feet mllw in an Inner Channel. To comply with nesting sea turtle windows, the proposed dredging would occur during the winter months from November 1 until April 30. Approximately 550,000 cubic yards (cy) of beach quality sand (470K from impoundment basin, 90K from channel) will be dredged from the entrance channel and the impoundment basin in the authorized federal navigation project. The material will be pumped hydraulically onto the beach approximately 4.5 miles south of the dredging area which is consistent with current NEPA documentation for the project. Material would utilize the established permitted pipeline corridor which is located well landward of the dune line.

5. PROJECT NEED

Restoring the channel and the impoundment basin will greatly reduce the swell action and provide safer navigation to the many boaters who routinely use this channel and as a refuge from storms. St. Lucie Inlet is a harbor of refuge and major corridor for hurricane evacuations by boat. Dredging of the Impoundment Basin will help prevent quick shoaling and provide several years of navigation for the Inlet.

Currently, the impoundment basin is overflowing with material and is shoaling into the navigation channel from the south eastern portion of the basin (figure 1). This has resulted in numerous relocation of navigation buoys by the US Coast Guard, as well as issuances of local notices to mariners regarding the shoaling of the channel (<http://www.navcen.uscg.gov/lnm/d7/default.htm>).

A June 18, 2010 letter from the Coast Guard discusses the increasingly unsafe conditions at St. Lucie Inlet stating:

“In late May, 2010, our Aid to Navigation Team for that area visited the inlet and discovered that due to shoaling on the north side of the inlet, safe water was reduced by 50% leaving only approximately 75' of navigable waterway. This necessitated changing the aids to navigation scheme to mark best water. Due to the shallow and restricted channel the Coast Guard was forced to install very small buoys that can be manually handled from a small vessel. Historically these buoys do not remain on station very well increasing the unsafe conditions in the inlet.”

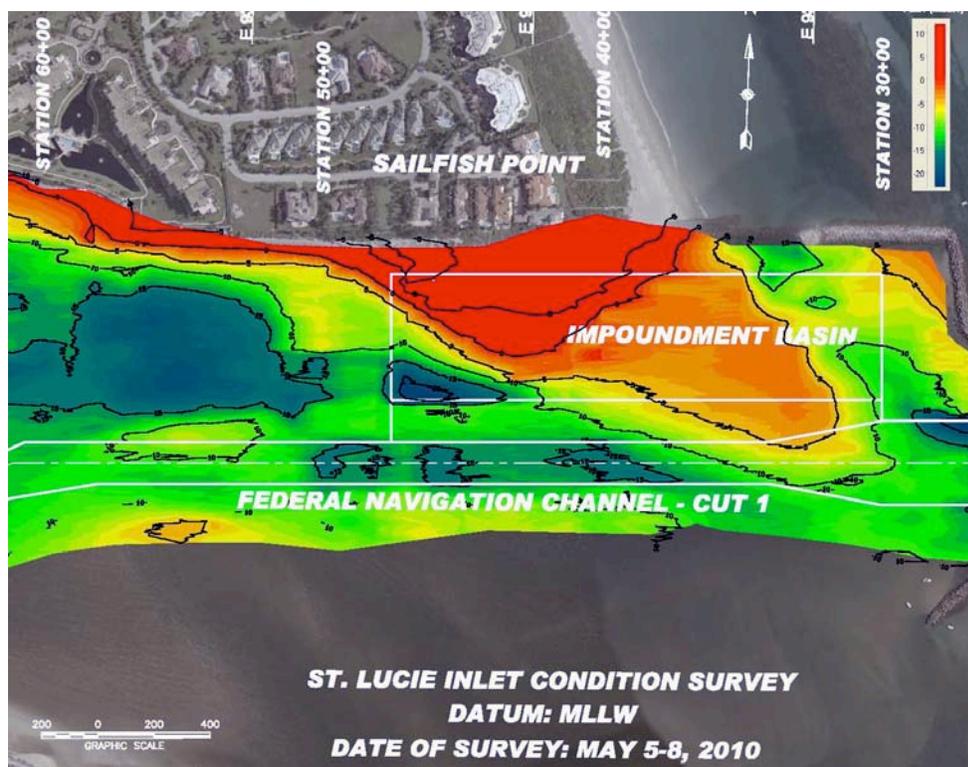


Figure 1: Bathymetric map showing St. Lucie Inlet channel and impoundment basin. Notice shoaling into channel from south-east encroachment of sediment from basin.

6. IDENTIFICATION OF LISTED SPECIES

The purpose of this biological assessment (BA) is to review the proposed maintenance dredging event for the St. Lucie Inlet in sufficient detail to determine whether the proposed action may affect critical habitat of wintering piping plover (*Charadrius melodus*). Other species under the FWS jurisdiction are covered under prior Biological Opinions mentioned in the consultation history at the beginning of this document.

7.02.3 Piping Plover.

a. Status. Threatened

b. Background.

The Atlantic Coast piping plover population breeds on coastal beaches from Newfoundland to North Carolina (and occasionally in South Carolina) and winters along the Atlantic Coast (from North Carolina south), the Gulf Coast, and in the Caribbean where they spend a majority of their time foraging. Since being listed as threatened in 1986, only 800 pairs were known to exist in the three major populations combined and by 1995 the number of detected breeding pairs increased to 1,350. This apparent population increase can most likely be attributed to increased survey efforts and implementation of recovery plans.



Piping plovers typically nest in sand depressions on un-vegetated portions of the beach above the high tide line on sand flats at the ends of sand spits and barrier islands, gently sloping fore dunes, blowout areas behind primary dunes, sparsely vegetated dunes, and wash over areas cut into or between dunes. They head to their breeding grounds in late March or early April and nesting usually begins in late April; however, nests have been found as late as July (Potter, *et al.*, 1980). Feeding areas include intertidal portions of ocean beaches, wash over areas, mud flats, sand flats, wrack lines, and shorelines of coastal ponds, lagoons, or salt marshes (USFWS, 1996). Prey consist of worms, fly larvae, beetles, crustaceans, mollusks, and other invertebrates (Bent, 1928).

Loss and degradation of habitat due to development and shoreline stabilization have been major contributors to the decline of piping plovers in Florida. The current commercial, residential, and recreational development has decreased the amount of coastal habitat available for piping plovers to nest, roost, and feed. Furthermore, beach erosion and the abundance of predators, including wild and domestic animals as well as feral cats; have further diminished the potential for successful nesting of this species. Since project beaches are wintering area for the piping plover, the major threat to its occupation of the area during the winter months would be continued degradation of beach foraging habitat.

c. Habitat.

A majority of the existing shoreline throughout the state of Florida is heavily developed and is experiencing significant shoreline erosion from both anthropogenic and natural causes. Habitat loss from coastal development, long-shore and cross-shore shoreline erosion, shoreline erosion impacts from hard structure protection measures (i.e. jetties, groins, etc.) and heavy public use has led to the degradation of piping plover habitat throughout the State. As erosion and development persist throughout the coast of Florida, piping plover roosting and foraging habitat loss continues. The enhancement of beach habitat through the addition of beach fill, in highly erosive environments, may potentially restore lost roosting and beach front intertidal foraging habitat. Short-term impacts to foraging (1-3 years) and roosting (during construction) habitat may occur as a result of beach placement activities and associated construction operations. However, long-term foraging habitat loss may occur if existing or potential wash over habitat and intertidal habitat are lost due to shoreline protection measures (i.e. dunes, groins, jetties, etc.) that prevent the formation of wash over fans during large storm events or impede longshore transport, resulting in down-drift erosion.

Cross-island transport of sediment and subsequent wash over fan formation is considered a primary constituent element used in defining piping plover critical habitat. These low lying sand flats contain sparse vegetation and offer optimum habitat for piping plovers. Though eroded roosting habitat may be restored with the placement of beach fill, an increase in the width and height of the constructed berm, as well as the potential incorporation of a protective dune, hard structure, etc., may function as a barrier to cross island transport of sediment during significant erosion events resulting in long-term wash over foraging habitat loss.

The formation of sand bars and emergent sand spit islands within inlet complexes serve as valuable habitat for piping plovers and other shorebird species. In many cases these sites contain the important mosaic of habitat types including algal flats, sand flats, mud flats, etc. Though these formations are highly dynamic, they are often protected and isolated from human development pressures and associated disturbances; thus, they offer valuable roosting and foraging habitat. The size and frequency of occurrence is dependent on the sediment budget within an individual inlet complex and the interval period for inlet bypassing of sediment. Inlet bypassing of accreted sediments within inlet complexes is intended to mitigate down-drift erosion, and subsequent habitat loss, resulting from the interruption of longshore transport of sediments from hard structures and deep navigation channels. However, the resultant habitat from the bypassing of sediment on down-drift beaches is, in some cases, dependent on the removal of sediment accretion within the inlet. Though the bypassing of sediment to down-drift beaches may help mitigate lost intertidal foraging grounds, the isolation and protection offered by emergent sand spit and/or sand bar features within inlets is a critical, limited, and high value habitat feature for piping plovers and other shorebirds.

Most inlets throughout the state of Florida have an active inlet management plan, utilizing maintenance dredging to provide safe navigation and to mitigate the erosion of adjacent beaches through inlet bypassing/backpassing mechanisms. However, management of down-drift erosion through inlet bypassing/backpassing could result in the loss of emergent spit and sand bar formation. Therefore, the presence and absence of these valuable sand flat features are dependent on the frequency in which these dredging and bypassing/backpassing events occur.

d. Critical Habitat for Wintering Piping Plover Designation.

Critical habitat receives protection under Section 7 of the Endangered Species Act through the prohibition against destruction or adverse modification of critical habitat with regard to actions carried out, funded, or authorized by a Federal agency. Section 7 requires consultation on Federal actions that are likely to result in the destruction or adverse modification of critical habitat.

The piping plover is a fairly common winter resident along the Atlantic and Gulf Coasts of Florida where they spend a majority of their time foraging. When not foraging, plovers can be found roosting, preening, bathing, in aggressive encounters, and moving among available habitat locations (Zonick and Ryan, 1996). On July 10, 2001, the USFWS designated 137 areas along the coasts of North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and Texas as critical habitat for the wintering Florida population of the piping plover where they spend up to 10 months of each year on the wintering grounds (Figure 2).

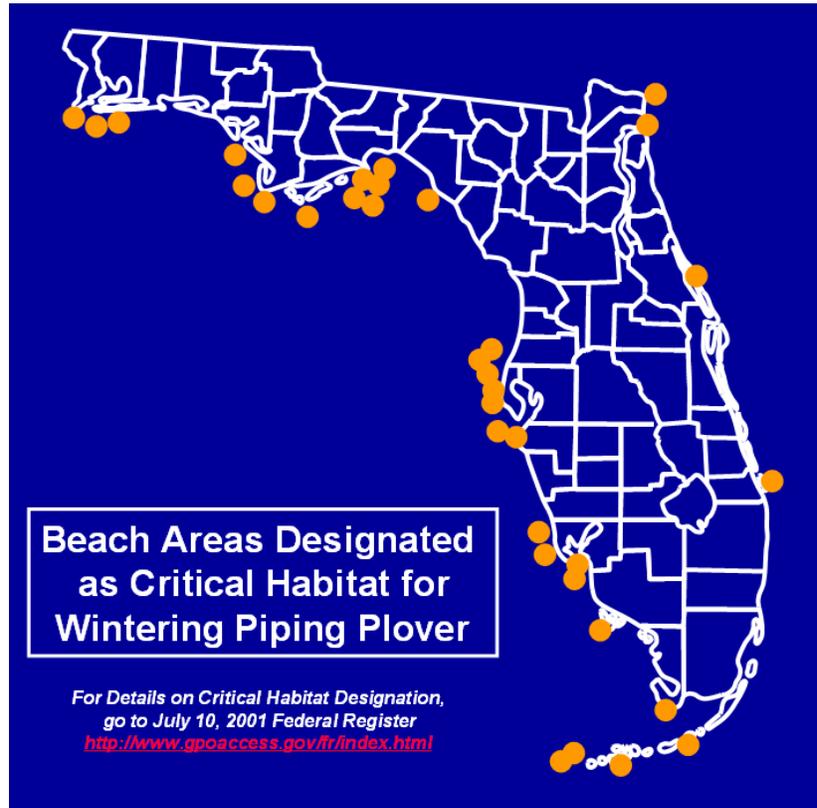


Figure 2: Critical habitat for wintering piping plover in Florida population of the piping plover where they spend up to 10 months of each year on the wintering grounds (Figure 2).

Piping plovers begin arriving on the wintering grounds in July, with some late-nesting birds arriving in September. A few individuals can be found in the wintering grounds throughout the year, but sightings are rare in late May, June, and early July. Constituent elements for the piping plover wintering habitat are those habitat components that are essential for the primary biological needs of foraging, sheltering, and roosting, and only those areas containing these primary constituent elements within the designated boundaries are considered critical habitat. The primary constituent elements are found in coastal areas that support intertidal beaches and flats (mud flats, sand flats, algal flats, and wash over passes) and associated dune systems and flats above annual high tide. Important components of intertidal flats include sand and/or mudflats with no or very sparse emergent vegetation. Adjacent non-or sparsely vegetated sand, mud, or algal flats above high tide are also important, especially for roosting piping plovers. Important components of the beach/dune ecosystem include surf cast algae, sparsely vegetated back beach

and salterns, spits, and wash over areas. Designated critical habitat does not include existing developed sites consisting of buildings, marinas, paved areas, boat ramps, exposed oil and gas pipelines, and similar structures (Federal Register/Vol. 66, No 132, July 10, 2001).

The USFWS has defined textual unit descriptions to designate areas within the critical habitat boundary. These units describe the geography of the area using reference points, include the areas from the landward boundaries to the MLLW, and may describe other areas within the unit that are utilized by the piping plover and contain the primary constituent elements (Federal Register/Vol. 66, No 132, July 10, 2001 <http://www.gpoaccess.gov/fr/index.html>).

e. Project Area Specific Information for Species Included in this Assessment

Distribution

The most data available for the project area was performed by Ecological Associates Inc. with assistance from Audubon of Martin County during January to May 2009. The survey methods were approved by USFWS using twice-weekly surveys along with weekly surveys toward the end of the season. The survey looked at several areas within the St Lucie inlet, including the area around the impoundment basin. A total of 87 plover sightings were documented during the surveys, with 15 sightings at the project area. Results suggested that piping plover were present in the inlet from late July through April, with an estimated resident population of 13-20 individuals. The area identified as critical habitat was not the preferred location based on the 2009 survey, as many more sightings were on a flood shoal approximately 4000-feet to the west of the impoundment basin (table 2 of attached survey). Based on observations in the survey, plover routinely moved around the various areas of the inlet in relation to tides, weather, and human disturbances, not relying on a particular area throughout the winter.

Critical Habitat for Wintering Piping Plover.

The U.S. Fish and Wildlife Service has identified Critical Habitat Unit FL-33 for the piping plover in St. Lucie and Martin Counties, Florida, incorporating the project area of St. Lucie Inlet (50 CFR Part 17, published in *Federal Register*, July 10, 2001). **Figure 3**, obtained from the U.S. Fish and Wildlife website at <http://crithab.fws.gov/>, depicts the FL-33 wintering piping plover critical habitat. The most northern area, inside the inlet identified as critical habitat also serves as an impoundment basin to the federal channel. Approximately 3.8 acres of exposed beach currently exists within the impoundment basin, accounting for 1.3% of the total designated critical habitat in FL-33 (282 acre). Beach placement of the dredged material will be placed well to the south of designated critical habitat located south of St. Lucie Inlet.

While the permitted pipeline is within critical habitat for plover, the primary constituent elements for use by plover are not present in the immediate vicinity of the pipeline corridor (map of pipeline attached). The pipeline easement is well west of the dune line, off the beach until approximately 2 miles down from the inlet. Critical habitat ends 1.6 miles south of the inlet (50 CFR Part 17, published in *Federal Register*, July 10, 2001)

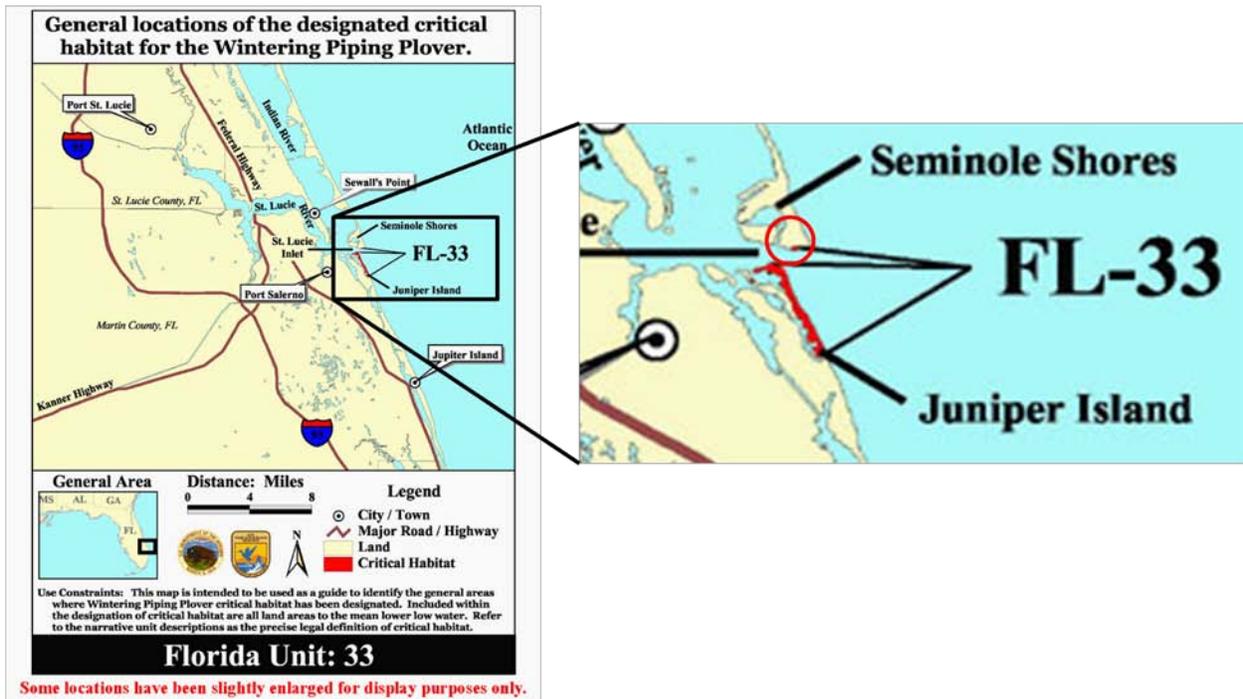


Figure 3: Maps showing critical habitat for wintering piping plover in the project area. Red circle represents area of impoundment basin.

e. Effect Determination.

Dredging of the authorized impoundment basin within St. Lucie Inlet will directly impact at least 3.8 acres of critical habitat for wintering piping plover. Recent survey reports in 2009 show that at least 15 birds were actively utilizing the shoaled areas in and around the inlet. Although the birds may move to other areas, depending on several factors, the removal of this critical habitat would result in an impact to the species. Placement of dredged material would occur well to the south of designated critical habitat and should not cause additional impacts, as the pipeline is located in areas where primary constituent elements for piping plover critical habitat are not present.

Regarding effects to critical habitat, the project will directly impact 3.8 acres of designated critical habitat within the 282 acres (affects 1.3% of total) of area FL-33 and 27,333 acres (affects 0.01% of total) of Florida's total designated critical habitat as identified by the FWS (Piping Plover, (*Charadrius melodus*) 5-Year Review: Summary and Evaluation, USFWS 2009).

Regarding the species, the USACE has determined that the proposed project may affect the piping plover. Dredging of any critical habitat would likely cause some impacts to the wintering plover present in the St. Lucie Inlet.

The USACE has determined that there would not be an adverse modification to critical habitat for wintering piping plover. The designated area within the Federal impoundment basin accounts for approximately 1.3% of the total CH in FL-33, and while the proposed action would remove this habitat, historically the basin shoals in within 2-4 years, providing habitat to the species.

To minimize the impacts to plover, the USACE or the local sponsor will monitor for piping plover on the project site during the period of construction. Details of a monitoring plan will be developed with the sponsor and provided to the USFWS prior to project commencement.

References:

Bent, A.C. 1928. Life Histories of the North American Shore Birds, Vol. II. Dover Publications, Inc., NY. 412 pp.

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Potter, Eloise F., J. F. Parnell, and R. P. Teulings. 1980. Birds of the Carolinas. University of North Carolina Press, Chapel Hill. 408pp.

USFWS. 1996. Revised Recovery Plan for Piping Plover (*Charadrius melodus*), Atlantic Coast Population, Region Five, Haley, Massachusetts.

USFWS. 2009. Piping Plover (*Charadrius melodus*), 5-year Review: Summary and Evaluation, Northeast Region, Hadley, Massachusetts and the Midwest Region's East Lansing Field Office, Michigan

Zonick, C. and M. Ryan. 1996. The ecology and conservation of piping plovers (*Charadrius melodus*) wintering along the Texas Gulf Coast. Department of Fisheries and Wildlife, University of Missouri, Columbia, Missouri 65211. 1995 Annual Report. 49 pp.

<http://crithab.fws.gov/>

<http://www.navcen.uscg.gov/lnm/d7/default.htm>

<http://www.gpoaccess.gov/fr/index.html>



Ms. Kathy Fitzpatrick
Coastal Engineer
Martin County Administrative Building
2401 S.E. Monterey Road
Stuart, Florida 34996

July 20, 2009

Subject: Piping Plover Surveys – St. Lucie Inlet Area

Dear Ms. Fitzpatrick:

Ecological Associates, Inc. (EAI) was contracted by Martin County to conduct piping plover surveys in support of permitting for its planned dune restoration project at Bathtub Beach Park on Hutchinson Island. These surveys, which were conducted with assistance from Audubon of Martin County, Inc. (AoMC) have now been completed, and the results are presented herein.

Background

The piping plover, (*Charadrius melodus*), a species protected by the U.S. Endangered Species Act, is known to utilize beaches in the vicinity of the St. Lucie Inlet for resting and foraging during its non-breeding season, and a portion of this area has been designated as critical habitat. A proposed dune restoration project at Bathtub Beach Park will utilize sand dredged from the St. Lucie Inlet flood shoal, a dynamic physical feature of supratidal, intertidal, and subtidal habitat whose dimensions are continually reshaped by coastal processes. Although piping plovers had been previously sighted on the shoal, the extent to which the birds utilized this habitat in relation to other nearby beaches was largely unknown. Thus, the objectives of this voluntary monitoring effort were to 1) determine and document the occurrence of piping plovers on the flood shoal, and 2) determine and document the extent to which piping plovers utilize the flood shoal in relation to other sandy habitats in and around the St. Lucie Inlet. The data generated by these surveys are intended to provide Martin County, the U.S. Fish and Wildlife Service (USFWS) and other interested stakeholders with a better understanding of the number of piping plovers overwintering in the project area.

In addition to the flood shoal surveys described herein, EAI previously conducted dedicated non-breeding shorebird surveys on Jupiter Island over a one-year period in support of Martin County's St. Lucie Inlet Sand Bypassing Project (SBP). Data from that monitoring effort included sightings of piping plovers. EAI biologists have also maintained a log of incidental piping plover sightings on Atlantic and inlet beaches of both Hutchinson and Jupiter Islands. Summaries of those data are included in this report as well.

Methods

Bird surveys of the flood shoal and surrounding areas were conducted by volunteers and staff from AoMC, under the organization and direction of Mr. Greg Braun, a professional ecologist and AoMC's Executive Director. EAI provided a boat and captain to transport the survey team to the various survey locations and was responsible for summarizing survey results.

USFWS protocols typically require weekly surveys for three months during the overwintering period when plovers are present (a total of 12 surveys). Two of those months, December and January, are in the main portion of the overwintering period. The third month may be selected from either the fall (August 1 – October 15) or spring (February 15 – April 15) migration periods. Insofar as the current monitoring was a voluntary effort by Martin County to collect previously unavailable information, and the wintering season was nearly half over before the County was able to initiate the surveys, the USFWS agreed to an altered monitoring schedule. Twice-weekly surveys, including an initial reconnaissance trip, began in early January. This effort was followed by four weekly surveys to yield a total of 12 surveys, the same number as required under the standard protocol. AoMC and EAI voluntarily conducted three additional surveys near the end of the plover overwintering season. Thus, a total of 15 dedicated surveys were conducted from January 9 to May 5, 2009 (Table 1).

The surveys focused on supratidal and intertidal areas around the inlet, including beaches inside the jetties on Hutchinson and Jupiter Islands, the tidal flood shoal, and other suitable habitats identified during analysis of recent aerial photography and the initial field reconnaissance trip conducted on January 9, 2009 (Figure 1).

The initial orientation excursion was attended by all project participants to ensure consistent survey methodology and record keeping. Subsequent bird surveys typically lasted three to four hours and involved a five-person team consisting of four experienced AoMC birders and the EAI boat captain. At least one member of each team included a person familiar with bird identification who could readily differentiate piping plovers from other shorebirds. Binoculars, spotting scopes and/or digital cameras were used to assist with bird identification and documentation of habitat conditions. The team of four observers typically began with a survey of birds in and around the flood shoal and then separated into two two-person teams that surveyed other potential piping plover habitat.

Observations were recorded on standardized field data sheets which included fields for numbers, species, locations and activities of birds observed, as well as tidal and weather conditions.

To the extent practical, the surveys were scheduled to avoid adverse weather conditions (e.g., high winds and seas) and encompassed a range of tidal stages. Although most surveys were conducted during weekday mornings, some afternoon and/or weekend surveys were also performed to document the effects of varying human activity patterns on piping plover abundance.

Results

Eighty-seven (87) piping plover sightings were documented during the dedicated field surveys (Table 2). The highest number of individual piping plovers observed during a single trip was 13. The majority of these plovers were sighted in groups of 5-10 individuals, with few solitary birds observed. Piping plovers were sighted during nine of the 15 surveys, the last sightings occurring on March 30, 2009. No piping plovers were sighted during the two surveys in April and May.

Forty-eight (48) of the piping plover sightings were of birds foraging or resting on the flood shoal in areas designated in project drawings as Borrow Areas A and B (Table 2; Figure 2). These areas may potentially be affected by the proposed Bathtub Beach Park Dune Restoration Project. Twenty-four (24) observations were of piping plovers foraging on the exposed intertidal flats on the north side of the flood shoal, and 15 were observed resting on the sandy beach along the north side of the St. Lucie Inlet. No piping plovers were sighted on the south inlet shoreline during the dedicated surveys, but rough sea conditions in the inlet occasionally prevented putting observers ashore in that area. On those occasions, the surveys had to be done from the boat, making positive identification of piping plovers less likely. It appears that the piping plovers move around considerably; groups in excess of five individuals were never observed in different locations on the same survey date.

Banded piping plovers were observed and documented photographically on two of the surveys. On January 28, 2009, banded piping plovers were observed within a group of 11 piping plovers that were initially at rest within proposed Borrow Site A. Close-up views of these birds with telescopes, binoculars and/or telephoto lenses clearly revealed a unique combination of four colored leg bands on one individual bird (Photo 1). The observation of this individual was reported electronically on the U.S. Army Corps of Engineers piping plover reporting website, and it was determined that the bird was banded in 2007 as a chick at Ludington State Park on the eastern shore of Lake Michigan. Observations of additional banded birds that were part of this same gathering were not definitive as to leg and band color combinations.

Banded piping plovers were also observed during the survey conducted on February 19, 2009, however once again definitive observations of band color combinations were only available for a single individual (Photo 2). Reporting of this observation was also made on the piping plover reporting website, and the resulting response was that this bird was also part of the piping plover population that nests in the Great Lakes. This individual

was determined to have hatched and been banded at North Manitou Island in Sleeping Bear Dunes National Lakeshore in northwestern Michigan.

The determination that these banded piping plovers were from the Great Lakes population is notable, in that the total population of piping plovers in this nesting population is thought to be less than 200 individuals, and it is officially designated by the federal government as “endangered”. Comparatively little is known about the overwintering areas of members of this population and the manager of the Great Lakes piping plover project was appreciative of the notification of the whereabouts of these birds. It is also notable that close-up views of most of the other piping plovers associated with the banded birds observed on January 28 and February 26, 2009 did not have bands. Because nearly all members of the Great Lakes piping plover population have been banded, the association of a few banded individuals with un-banded individuals suggests that the population of overwintering piping plovers in the vicinity of the St. Lucie Inlet area is likely composed of individuals from more than one nesting population (i.e. the Great Lakes population and a non-Great Lakes population).

Additional sightings of piping plovers relevant to this investigation, but outside the dedicated bird surveys conducted by AoMC, were documented by Florida Fish and Wildlife Conservation Commission (FWC) regional biologist Ricardo Zambrano. Mr. Zambrano reported seeing piping plovers within Borrow Sites A and/or B during two site visits; he observed 11 piping plovers on December 11, 2008 and a single piping plover on February 25, 2009.

Despite the lack of sightings of piping plovers on the south inlet shoreline during the dedicated surveys, piping plovers are known to utilize this area and the Atlantic-facing beaches on both Hutchinson and Jupiter Islands. From November 2006 through April 2008, EAI conducted bi-weekly non-breeding shorebird surveys within the Hobe Sound National Wildlife Refuge (HSNWR) and St. Lucie Inlet State Park (SLISP) on Jupiter Island, as required by regulatory permits for Martin County’s St. Lucie Inlet SBP (Table 3). A total of 20 piping plover sightings were documented during these surveys, eight of which occurred on the inlet beaches. Piping plovers were sighted from August through January. In contrast to the patterns documented during the recent dedicated surveys of the flood shoal, most of the plovers observed on the Atlantic beaches of Jupiter Island were solitary or in small groups of two to four individuals.

Concurrent with the dedicated bi-weekly surveys on Jupiter Island, EAI biologists began maintaining records of incidental sightings of piping plovers during the course of their daily sea turtle nesting surveys on both Hutchinson and Jupiter Islands. These anecdotal sightings also demonstrate that the plovers frequently utilize both Atlantic-facing and inlet beaches. On Jupiter Island, 98 piping plover sightings were documented from April 2007 through April 2009, 15 of which occurred along the inlet beach (Table 4). Along the Atlantic shoreline, piping plovers were sighted from the inlet as far south as about R-75, a distance of 5.3 miles. Piping plovers were spotted as early as July 20th and during 2009, they were present in this area through the end of April.

On Hutchinson Island, 55 piping plover sightings were documented from September 2007 through April 2009 (Table 5). Most were sighted on the inlet beach, but 12 observations were on Atlantic-facing beaches immediately north of the jetty. Only one solitary bird has been observed on Atlantic beaches considerably distant to the inlet. As described above for Jupiter Island, piping plovers on Hutchinson Island were observed through April 2009, and on Atlantic-facing beaches, they typically occurred as solitary animals or in small groups. However, on the inlet beaches of Hutchinson Island, they occasionally occurred in larger groups; the largest group, which was sighted on March 7, 2009, consisted of 15 individuals.

Differences in piping plover habitat utilization between Hutchinson and Jupiter Islands probably relates to the extent of human disturbance, sea conditions, beach profiles (width, elevation, slope), and relative numbers of land-based predators. On Jupiter Island there is relatively little human activity within the SLISP and HSNWR. In contrast, Atlantic-facing beaches on Hutchinson Island experience considerable recreational use.

Dedicated monitoring during 2009 was not initiated in time to capture the entire overwintering period for piping plovers; thus it provides an incomplete picture of temporal abundance patterns. However, in combination with other survey and anecdotal data, it is apparent that the birds regularly occur in the vicinity of the St. Lucie Inlet, arrive as early as late July, and are present through March and into April. It is likely that piping plovers observed in April include some migrants, individuals that have wintered farther south and are passing through the area during their northward migration to summer nesting habitat.

Based on the surveys conducted to date, it appears that the resident overwintering population of piping plovers in the vicinity of the St. Lucie Inlet contains at least 13 and probably no more than 20 individuals. The lower end of this range is based on the maximum number sighted during a single (January 2009), near-synoptic survey of inlet habitat (Table 2). Insofar, as these birds were observed during the main portion of the overwintering period (December-January), it is unlikely that the group included any migrants. Although as many as 15 individuals were sighted in a single group on the north shore of the inlet in March 2009, it is possible that this group may have included a few spring migrants (Table 6). On the other hand, not all available habitat was surveyed during the recent dedicated monitoring. Given the regular occurrence of individuals or small groups of piping plovers on the Atlantic-facing beaches of both Jupiter and Hutchinson Islands, it seems likely that not all resident birds were encountered during a single survey. On Jupiter Island, for example, as many as four individual piping plovers were sighted during the main portion of the overwintering period during bi-weekly non-breeding shorebird surveys conducted in 2007 and 2008 (Table 3). When these numbers are added to the minimum number cited above, a range of 15-20 birds seems like a reasonable estimate of the size of the overwintering piping plover population in and around the St. Lucie Inlet.

Piping plovers regularly utilize supratidal and intertidal habitats associated with the St. Lucie Inlet flood shoal, although not exclusively. As noted above, they also utilize Atlantic-facing beaches, beaches along both shores of the inlet, and during low tides they forage on the intertidal flats in the Indian River Lagoon. Based on the observations made during these surveys, it appears that the piping plovers routinely move around among these various areas, probably in relation to tides, weather, natural disturbances (e.g., peregrine falcons), human disturbances, and human-related disturbances (e.g., dogs).

The extent to which the flood shoal is critical to the vitality and long-term presence of resident and/or transient piping plovers cannot be determined from these limited data. However, the frequency with which they were observed on the flood shoal and vicinity (9 of the 13 surveys conducted from January through March), suggest that this area is valuable to piping plovers.

Regarding the activity of piping plovers sighted during the dedicated surveys, the majority of the individuals observed within Borrow Sites A and B were resting, whereas all of the piping plovers observed on the intertidal mud and grass flats immediately north of the shoal were foraging (Table 2). These observations suggest that the unvegetated supratidal portion of the flood shoal may provide the plovers with a valuable refugia for resting. Within this habitat they are less vulnerable to natural disturbances than they might otherwise be on the barrier islands where land-based predator populations (e.g., raccoons, foxes, and bobcats) are greater. Conversely, the intertidal mudflats and/or shallow subtidal grassflats appear to have greater value as foraging habitat than the unvegetated intertidal areas of the flood shoal. It is likely that the proximity of the flood shoal (which appears to be used primarily for resting) to the intertidal grass flats (which appear to be used predominately for foraging) combine to make the area an attractive habitat for piping plovers.

With respect to sea conditions, piping plovers typically prefer beaches with low wave energy, so their presence in groups at the more sheltered inlet beaches and interior flood shoal may be related to this habitat preference. Observations of wintering piping plovers within the study area also suggest that they appear to prefer wide, gently-sloping beaches. It may be that their wider field of view in these conditions allows them to see potential predators from a greater distance, giving them a greater feeling of security.

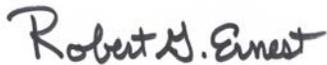
In addition to the piping plover information, volunteers with AoMC compiled records of other birds observed during the dedicated surveys. A total of 2,587 bird sightings, representing 37 species, were documented on the flood shoal during the period of monitoring (Table 6). This included 48 piping plovers, an American bald eagle, and a peregrine falcon. Species that were most abundant included sanderlings, black-bellied plovers, royal terns, willet, ruddy turnstones, laughing gulls, and least sandpipers. These seven species comprised nearly 80% of all individuals sighted. One thousand (1,000) bird observations were recorded on the north and south shores of the St. Lucie Inlet and the exposed intertidal flats north of the flood shoal (Table 7).

One banded sanderling, two banded brown pelicans (one adult and one immature) and several banded royal terns were observed within Borrow Sites A and/or B during the surveys. Most of the banded individuals had only the standard metallic USFWS leg band, and the engraved identification numbers were not legible, even with the use of binoculars and/or telescopes. However, one sanderling was banded with a unique combination of colored bands. A response to on-line reporting of this individual revealed that it had been banded in the Delaware Bay area in the 1999-2001 time frame as part of a study to determine migration routes and assess the physical condition of birds flying northward toward nesting sites in the Arctic.

During the last several dedicated bird surveys in and around the St. Lucie Inlet, least terns, black skimmers, and a variety of other shorebirds were observed at rest on those portions of the flood shoal designated as Borrow Sites A and/or B (Figure 2; Photos 3 and 4). As described above for resting piping plovers, it is possible that the comparative lack of natural disturbance on the flood shoal make these areas more desirable for resting birds than the barrier island beaches where populations of land-based predators are greater. However, it should be noted, that human disturbances may be intermittently greater on the flood shoal than on the barrier islands, particularly on weekends and holidays. The flood shoal is a major destination of boating enthusiasts who land their boats or anchor nearby and come onto the island/shoal, often with unleashed dogs. During these periods, the barrier island beaches may provide important alternative resting habitat. The extent to which human disturbances influence the movement of piping plovers among available habitats could not be determined from this study.

Mr. Braun assisted with the preparation of this report and reviewed the final draft for completeness and accuracy. If you have any questions regarding the methodology or survey results, I can be reached at (772) 334-3729.

Sincerely,



Robert G. Ernest
President

Rge/re
enclosures

cc: R. Erik Martin/EAI
G. Braun/AoMC



Figure 1. Location of the St. Lucie Inlet flood shoal and other intertidal areas used to monitor piping plovers, January - May 2009.



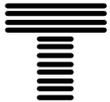
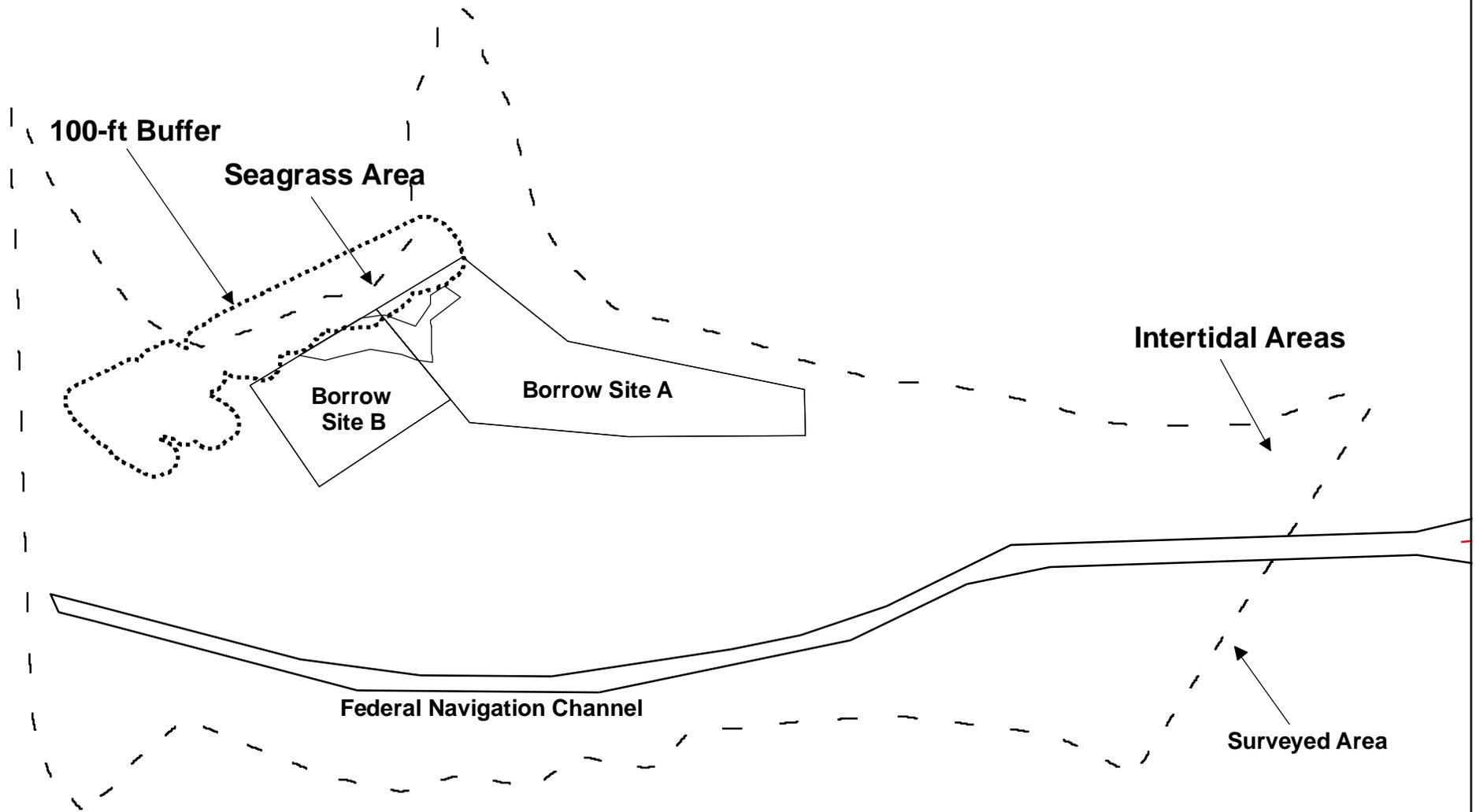
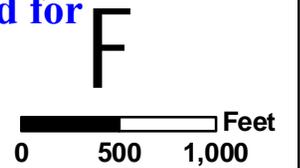
0 500 1,000 2,000 3,000 Feet

Graphic Scale Only



www.ecological-associates.com

**Figure 2. St. Lucie Inlet flood shoal showing proposed areas for obtaining sand for
Bathtub Beach Dune Restoration Project, Martin County, Florida**



Taylor Engineering Inc.
10151 Deerwood Park Blvd Bldg 300 Suite 300
Jacksonville, FL 32256

Fieldtrip Figure 1
**INTERTIDAL HABITAT IN SURVEYED AREAS OF ST. LUCIE INLET
BATHTUB BEACH FILL DESIGN PERMITTING
MARTIN COUNTY, FL**

PROJECT	C2008-039
DRAWN BY	AC
DATE	JAN. 2009

Table 1.
Tide and Weather Conditions During Dedicated Piping Plover Surveys
Conducted in the Vicinity of the St. Lucie Inlet, January-May 2009.

Survey Date	Day of Week	Start Time	End Time	Sky Conditions	Wind Speed	Direction	Last High Tide	Low Tide	Next High Tide
01/09/09	Friday	10:30	14:00	Sunny	1-5	N	5:52	11:54	17:58
01/12/09	Monday	13:21	15:11	Partly Cloudy	1-5	SE	8:24	14:33	20:41
01/19/09	Monday	9:00	11:35	Partly Cloudy	15-25	W	2:04	8:22	14:05
01/23/09	Friday	9:35	12:00	Sunny	5-10	N	5:44	11:51	17:43
01/26/09	Monday	9:25	12:35	Sunny	1-5	NE	7:41	13:48	19:49
01/28/09	Wednesday	9:35	13:15	Partly Cloudy	5-10	S	8:52	14:57	21:07
01/31/09	Saturday	9:30	12:00	Sunny	15-25	N	*	4:30	10:39
02/09/09	Monday	9:00	12:30	Partly Cloudy	10-15	E	7:17	13:25	19:35
02/19/09	Thursday	14:50	16:35	Partly Cloudy	15-25	SW	3:24	9:40	15:24
02/26/09	Thursday	9:00	11:30	Partly Cloudy	15-25	E	8:22	14:29	20:46
03/05/09	Thursday	11:00	14:00	Partly Cloudy	10-15	SE	2:06	8:14	14:15
03/16/09	Monday	9:45	12:00	Partly Cloudy	5-10	SE	*	6:07	11:57
03/30/09	Monday	9:25	11:45	Sunny	5-10	NE	*	4:54	10:58
04/10/09	Friday	9:38	12:00	Cloudy	5-10	SE	8:50	15:05	21:23
05/05/09	Tuesday	9:10	11:47	Sunny	5-10	SE	5:24	11:43	18:03

* Last high tide was on previous day

Table 2.
Bathtub Beach Park Dune Restoration Project
Piping Plover Sightings in the Vicinity of the St. Lucie Inlet
January - May 2009.

Survey Date	Total Number Sighted	Flood Shoal		Intertidal Flats North of Flood Shoal ¹	North Side of St. Lucie Inlet	South Side of St. Lucie Inlet
		Borrow Area A	Borrow Area B			
01/09/09	13		13			
01/12/09	13			13 ²		
01/19/09	2			2		
01/23/09	0					
01/26/09	8		8			
01/28/09	11	11 ³				
01/31/09	0					
02/09/09	0					
02/19/09	9			9 ⁴		
02/26/09	10				10	
03/05/09	10		10			
03/16/09	0					
03/30/09	11		6		5	
04/10/09	0					
05/05/09	0					
TOTAL	87	11	37	24	15	0
Number Resting	42	11	16	0	15	0
Number Foraging	32	0	21	11	0	0
Activity Not Recorded	13	0	0	13	0	0

¹Unless otherwise indicated this area refers to the intertidal mud and grass flats immediately north of flood shoal.

²This group was sighted on exposed sand flats north of the mud/grass flats.

³Three banded birds in the group: #1 Left leg - orange (above the joint) and blue (below the joint), Right leg - silver (above the joint) and blue (below the joint); #2: Left leg - yellow below the joint (none visible above the joint), Right leg - orange below the joint (none visible above the joint); #3 Left leg - single faded, light blue below the joint, Right leg - single orange above the joint.

⁴Two banded birds in the group: #1 Left leg - light blue (below the joint) and silver (above the joint), Right leg - orange (above the joint); #2 Right leg - silver only (below joint).

Table 3.
St. Lucie Inlet Sand Bypassing Project, Jupiter Island, Florida,
Piping Plovers Sighted During Dedicated Non-Breeding Shorebird Surveys,
November 2007 - April 2008.

Survey Date	South Boundary of HSNWR to R-69	Sand Placement Area (R-59 to R-69)	Pipeline Route (R-53 to R-59)	R-53 to Jetty	Inlet Beach South Side of St. Lucie Inlet	Location Not Recorded	Total
11/10/06		1			1		2
11/27/06							0
12/13/06							0
12/27/06							0
01/11/07							0
01/24/07							0
02/07/07							0
02/21/07							0
03/07/07							0
03/19/07							0
04/03/07							0
04/20/07							0
05/04/07							0
05/17/07							0
05/31/07							0
06/14/07							0
06/29/07							0
07/12/07							0
07/26/07							0
08/09/07				1			1
08/23/07				1			1
09/06/07							0
09/20/07			1				1
10/04/07							0

Table 3.
St. Lucie Inlet Sand Bypassing Project, Jupiter Island, Florida,
Piping Plovers Sighted During Dedicated Non-Breeding Shorebird Surveys,
November 2007 - April 2008.

Survey Date	South Boundary of HSNWR to R-69	Sand Placement Area (R-59 to R-69)	Pipeline Route (R-53 to R-59)	R-53 to Jetty	Inlet Beach South Side of St. Lucie Inlet	Location Not Recorded	Total
10/18/07		2	1				3
10/30/07							0
11/15/07		1		4			5
11/29/07							0
12/14/07							0
12/28/07					3		3
01/10/08							0
01/24/08					4		4
02/08/08							0
02/22/08							0
03/06/08							0
03/20/08							0
04/03/08							0
04/17/08							0
TOTAL	0	4	2	6	8	0	20
Number Resting	0	0	0	0	7	0	7
Number Foraging	1	4	2	6	0	0	13

Table 4.
St. Lucie Inlet Sand Bypassing Project, Jupiter Island, Florida
Anecdotal Sightings of Piping Plovers - South of St. Lucie Inlet
April 2007 - April 2009.

Survey Date	South Boundary of HSNWR to R-69	Sand Placement Area (R-59 to R-69)	Pipeline Route (R-53 to R-59)	R-53 to Jetty	Inlet Beach South Side of St. Lucie Inlet	Location Not Recorded	Total
04/16/07						5	5
09/12/07			5				5
09/13/07						3	3
09/14/07			5	1			6
09/17/07				9			9
09/26/07			1	1			2
10/05/07	1						1
10/08/07		4			1		5
10/10/07			2		1		3
10/12/07		3		1			4
10/17/07			1				1
10/19/07		1	2				3
10/26/07		2	2				4
11/02/07		1					1
11/07/07		4		2			6
03/01/08		1		1			2
03/07/08				4			4
03/12/08	1	2					3
03/19/08					4		4
03/21/08					9		9
03/27/08			2	1			3
07/20/08						2	2
07/26/08				1			1
08/29/08				1			1

Table 4.
St. Lucie Inlet Sand Bypassing Project, Jupiter Island, Florida
Anecdotal Sightings of Piping Plovers - South of St. Lucie Inlet
April 2007 - April 2009.

Survey Date	South Boundary of HSNWR to R-69	Sand Placement Area (R-59 to R-69)	Pipeline Route (R-53 to R-59)	R-53 to Jetty	Inlet Beach South Side of St. Lucie Inlet	Location Not Recorded	Total
09/29/08			1				1
03/11/09	1						1
03/21/09		1	2				3
03/22/09		2					2
04/19/09			1				1
04/20/09				1			1
04/25/09	1			1			2
TOTAL	4	21	24	24	15	10	98
Number Resting	1	7	1	1	1	0	11
Number Foraging	0	5	2	3	0	0	10
Activity Not Recorded	3	9	21	20	14	10	77

Table 5.
Hutchinson Island, Florida
Anecdotal Sightings of Piping Plovers - North of St. Lucie Inlet
September 2007 - April 2009.

Survey Date	North Side of St. Lucie Inlet	Atlantic Beaches Near Jetty	Other Atlantic Beaches	Location Not Recorded	Total
09/21/07	2	3			5
05/25/08		1			1
09/03/08			1		1
09/25/08	1	1			2
10/01/08	2	1			3
10/02/08	1	2			3
10/07/08		2			2
03/07/09	15				15
03/09/09	11				11
03/20/09	7				7
03/27/09	1				1
04/07/09	2				2
04/23/09		2			2
TOTAL	42	12	1	0	55
Number Resting	13	2	0	0	15
Number Foraging	16	0	0	0	16
Activity Not Recorded	13	10	1	0	24

Table 6.
Avifauna Identified During Dedicated Surveys of the St. Lucie Inlet Flood Shoal, January - May 2009.

Species	Survey Date															Grand Total
	09 Jan	12 Jan	19 Jan	23 Jan	26 Jan	28 Jan	31 Jan	09 Feb	19 Feb	26 Feb	05 Mar	16 Mar	30 Mar	10 Apr	05 May	
Bald Eagle														1		1
Black Skimmer					7					30			6	35		78
Black Vulture									1							1
Black-bellied Plover	6	1	2	9	6	8	42	42		2	53	7	51	66	3	298
Brown Pelican		4		3		2	2	4			1	1	6	37	3	63
Caspian Tern													1		1	2
Cattle Egret														1		1
Double-crested Cormorant		1												10	1	12
Dunlin			1			10							8	20	57	96
Fish Crow				2											1	3
Forster's Tern	1			4	1			2		1	1					10
Great Blue Heron		1	1	1	1		2	1					7	3	4	21
Great Egret														1	1	2
Great Black-backed Gull							1		1			1				3
Herring Gull		2		1							1	2				6
Killdeer			2	4	4	3				1					3	17
Laughing Gull	10	13	1	1	57	1	6	22		4	7		6	14		142
Least Sandpiper	2	18		1	1		12				2	1	4	15		56
Least Tern													18	116	6	140
Lesser Black-backed Gull												6				6
Little Blue Heron			2								1	1				4
Magnificent Frigatebird						2										2
Mottled Duck													1			1
Osprey		4	3	2	1		3	1		1			2			17
Peregrine Falcon						1										1
Piping Plover	13				8	11					10		6			48
Red-breasted Merganser					1											1
Ring-billed Gull	2	10	7	8	2	3	6	7	4	1	4	7	3	1		65
Royal Tern	1		1	100			45	9		49	4	26	35	17	1	288

Table 6.
Avifauna Identified During Dedicated Surveys of the St. Lucie Inlet Flood Shoal, January - May 2009.

Species	Survey Date															Grand Total
	09 Jan	12 Jan	19 Jan	23 Jan	26 Jan	28 Jan	31 Jan	09 Feb	19 Feb	26 Feb	05 Mar	16 Mar	30 Mar	10 Apr	05 May	
Ruddy Turnstone	6	5	3	21	4	3	25	7		3	18	19	11	27	11	163
Sanderling	2			45	107	18	56	43		52	33	55	133	208	13	765
Sandwich Tern								1					1	2		4
Semipalmated Plover				6	11	1										18
Short-billed Dowitcher													8	2		10
Snowy Egret													1		1	2
White Ibis		1														1
Willet	6			3	15	17	31	73		30	9	6	6	43		239
Grand Total	49	60	23	211	226	80	231	212	6	174	144	132	314	619	106	2,587

Table 7.

Avifauna Identified Within Surveyed Habitats in the Vicinity of the St. Lucie Inlet Flood Shoal, January - May, 2009.¹

Species	Survey Date															Grand Total
	09 Jan	12 Jan	19 Jan	23 Jan	26 Jan	28 Jan	31 Jan	09 Feb	19 Feb	26 Feb	05 Mar	16 Mar	30 Mar	10 Apr	05 May	
American Oystercatcher			1						2							3
Anhinga				2												2
Bald Eagle			1						1							2
Belted Kingfisher	1		1			1			1							4
Black Skimmer							25									25
Black Vulture	2			1												3
Black-bellied Plover		1	1	1	2			1	6		4	3	3		24	46
Bonaparte's Gull			7													7
Brown Pelican	7	6	3	2	4					16		18	4	15		75
Double-crested Cormarant			2			1					1	1				5
Dowitcher	1	1							2							4
Dunlin		1	1						1				1			4
Fish Crow										37		1	2		2	42
Forster's Tern	1	1	2								1					5
Great Blue Heron	1	1	2	5	1	1		1	1		3	3				19
Great Egret		1			1										4	6
Great Black-backed Gull	3						1		1							5
Herring Gull	1							1								2
Killdeer		12	9	10	15	16		31		6	9	7	4	1	1	121
Laughing Gull	15	5	1		1							26			1	49
Least Sandpiper		1							2							3
Least Tern													3	3	2	8
Lesser Black-backed Gull	1			1												2
Little Blue Heron	2							2				3			2	9
Mottled Duck													1		2	3
Mourning Dove															1	1
Osprey	1	1	5	6	1	6		1	2	1	3	1				28
Peregrine Falcon									1							1
Piping Plover		13	2						9	10			5			39

Table 7.

Avifauna Identified Within Surveyed Habitats in the Vicinity of the St. Lucie Inlet Flood Shoal, January - May, 2009.¹

Species	Survey Date															Grand Total
	09 Jan	12 Jan	19 Jan	23 Jan	26 Jan	28 Jan	31 Jan	09 Feb	19 Feb	26 Feb	05 Mar	16 Mar	30 Mar	10 Apr	05 May	
Ring-billed Gull		8	13	1	5				1	4	1					33
Rock Pigeon			1	2						3			3			9
Royal Tern			27	30	2	1				2	1	1	3			67
Ruddy Turnstone	3	1	16		1	1		6	1	5	9		3		8	54
Sanderling		1	28	22	1			1	1	6	5		30	27	58	180
Sandwich Tern				1												1
Semipalmated Plover	1									3						4
Snowy Egret	1							1								2
Spotted Sandpiper	1					1										2
Turkey Vulture	6	1	2	7				8								24
Western Sandpiper									1							1
White Ibis	4	1	3	11	8	5		2		4	1				1	40
White-winged Scoter			2													2
Willet	12		8	22		1		1	1			8	2	1	1	57
Yellow-crowned Night Heron															1	1
Grand Total	64	56	138	124	42	34	26	56	34	97	38	72	64	47	108	1,000

¹Within the intertidal flats north of the flood shoal, accurate counts were not always possible, and in some cases only presence was noted. Thus, these numbers are conservative (except for piping plovers), representing the minimum numbers of birds sighted during the surveys.



Photo 1

Banded piping plover photographed within flood shoal Borrow Site A.
Date of photo: January 28, 2009 by G. Braun



Photo 2

Banded piping plover photographed on grass/mud flats
north of the St. Lucie Inlet Flood Shoal.
Date of photo: February 19, 2009 by L. McDowell



Photo 3

Birds of various species were often found together on the tidal shoals within portions of Borrow Site A that were exposed at low tide.

View looking east toward St. Lucie Inlet.

Date of photo: April 10, 2009 by J. Kearman



Photo 4

Close-up view of resting shorebirds, including sanderlings and least terns, utilizing intertidal portion of Borrow Site A exposed at low tide.

Date of photo: April 10, 2009 by G. Braun.



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

OCT 06 2011

Planning and Policy Division
Environmental Branch

Mr. Fred Dayhoff, Tribal Representative
NAGPRA, Section 106
Miccosukee Tribe of Indians of Florida
Post Office Box 440021
Tamiami Station
Miami, Florida 33144

Dear Mr. Dayhoff:

The U.S. Army Corps of Engineers (Corps), Jacksonville District, is proposing to conduct channel maintenance dredging to remove recent accumulation of shoaled materials from Entrance Channel Cut-1 and the impoundment basin located near the entrance of St. Lucie Inlet in Martin County, Florida. The dredged material consists of recent sand accretion into previously dredged areas and represents maintenance work to restore the channel to required depths of 16 feet. Excavated material will be transported to an approximate 5,000 foot long beach disposal area located at Hobe Sound National Refuge beach south of St. Lucie Inlet between DEP Monuments R-61 and R-67 (Figure 1). Transport will occur either via a pipeline down the beach or by barge down the intracoastal waterway with crossover at an existing footpath (near R 65) at Peck's Lake at Hobe South National Wildlife Refuge. Channel maintenance dredging and beach disposal in this same project location was previously conducted by Martin County in 2007 (DEP Permit No. 43-294982-9)

The Corps has reviewed this project for any potential to cause any effects to historic properties. As part of this review, the Corps has taken into account previous surveys conducted within the project area. The Corps maintains its determination of no historic properties affected (DHR Project File No. 992804).

If there are any questions, please contact Ms. Wendy Weaver at 904-232-2137 or e-mail at wendy.weaver@usace.army.mil.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

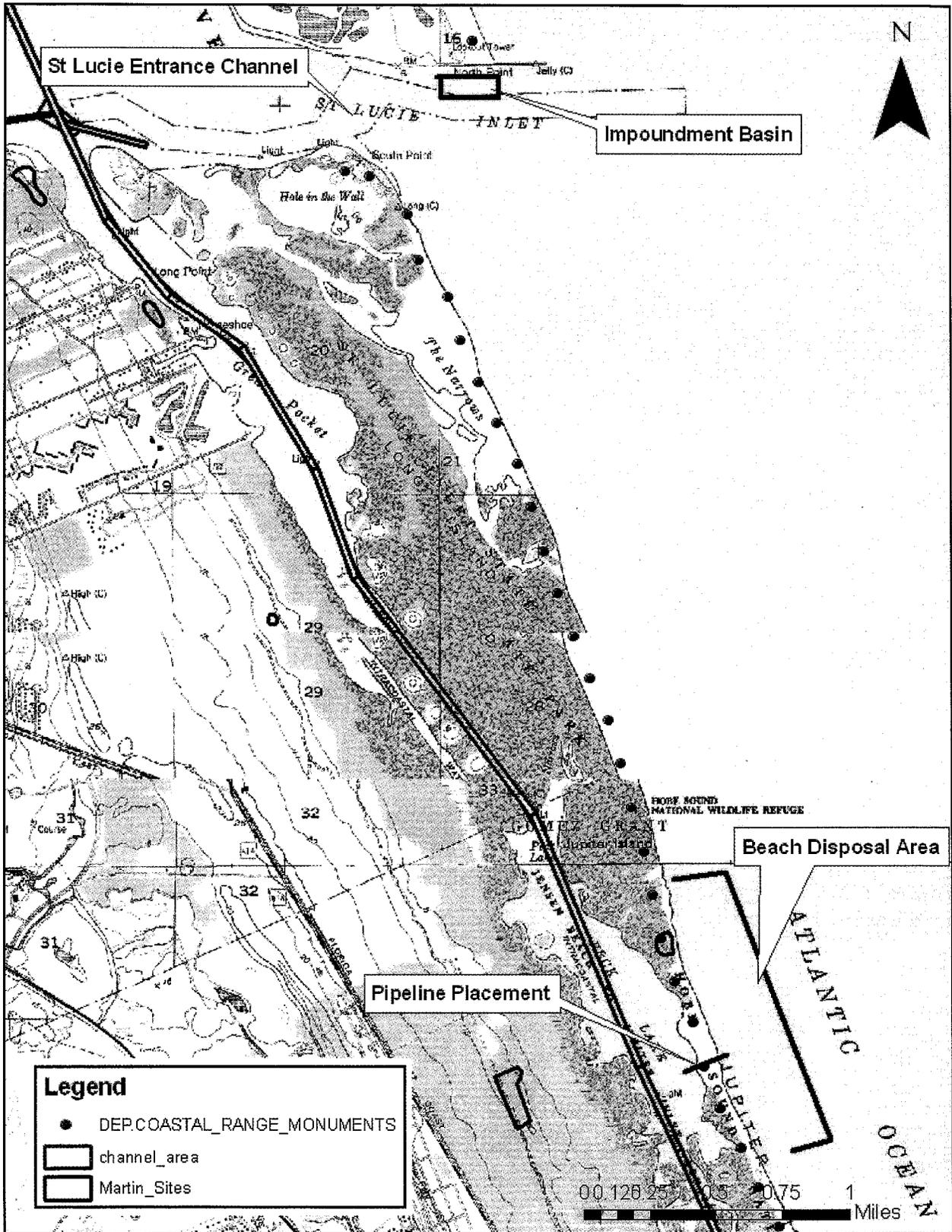


Figure 1. St. Lucie Operation and Maintenance Project Area



FLORIDA DEPARTMENT OF STATE
Kurt S. Browning
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Mr. Eric Summa
Planning Division
Jacksonville Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

November 18, 2011

Re: DHR Project File No.: 2011-04595/ Received: October 10, 2011
St. Lucie Operation and Maintenance Project Area
Counties: Martin

Dear Mr. Summa:

Our office received and reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended and 36 CFR Part 800. The State Historic Preservation Officer is to advise and assist federal agencies when identifying historic properties (archaeological, architectural, and historical resources) listed, or eligible for listing, in the National Register of Historic Places, assessing the project's effects, and considering alternatives to avoid or minimize adverse effects.

Because of the nature of the project, this office concurs that no historic properties eligible for listing in the National Register will be adversely affected.

If you have any questions concerning our comments, please contact Michael Hart, Historic Sites Specialist, by phone at 850.245.6333, or by electronic mail at mrhart@dos.state.fl.us. Your continued interest in protecting Florida's historic properties is appreciated.

Sincerely,

Laura A. Kammerer
Deputy State Historic Preservation Officer
For Review and Compliance



FLORIDA DEPARTMENT OF STATE
Kurt S. Browning
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Mr. Eric Summa
Planning Division
Jacksonville Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

November 30, 2011

Re: DHR Project File No.: 2011-05140/ Received: October 28, 2011
Peck's Lake Staging Area, Operations and Maintenance Activities for St. Lucie Inlet
County: Martin

Dear Mr. Summa:

Our office received and reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended and 36 CFR Part 800. The State Historic Preservation Officer is to advise and assist federal agencies when identifying historic properties (archaeological, architectural, and historical resources) listed, or eligible for listing, in the National Register of Historic Places, assessing the project's effects, and considering alternatives to avoid or minimize adverse effects.

Our review of the Florida Master Site File indicates that because of the location and nature of the project in the Peck's Lake staging area component it is unlikely that historic properties will be affected.

If you have any questions concerning our comments, please contact Michael Hart, Historic Sites Specialist, by phone at 850.245.6333, or by electronic mail at mrhart@dos.state.fl.us. Your continued interest in protecting Florida's historic properties is appreciated.

Sincerely,

Laura A. Kammerer
Deputy State Historic Preservation Officer
For Review and Compliance



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
(727) 824-5317; FAX (727) 824-5300
<http://sero.nmfs.noaa.gov/>

November 28, 2011

F/SER4:JK/pw

(Sent via Electronic Mail)

Colonel Alfred Pantano, Commander
U.S. Army Corps of Engineers, Jacksonville District
Jacksonville Planning Division
PO Box 4970
Jacksonville, Florida 32232

Attention: Patrick Griffin

Dear Colonel Pantano:

NOAA's National Marine Fisheries Service (NMFS) reviewed the draft supplemental Environmental Assessment (EA) prepared by the Jacksonville District for the maintenance of St. Lucie Inlet and the adjoining Intracoastal Waterway (IWW) using Peck's Lake Staging Area, which is south of the inlet and in Martin County. The draft supplemental EA only covers use of Peck's Lake Staging Area; maintenance of the inlet and adjoining IWW and the related beach disposal was examined in an EA prepared by the District in 2000 and in SAJ-1996-05620. In the draft supplemental EA, the Jacksonville District proposes to use a barge to transfer dredged material from the inlet and adjoining IWW to Peck's Lake and to then add water to the material within the barge to reslurry the sediments so they can be hydraulically transferred via pipeline across the berm to the beach disposal area. The Jacksonville District's initial determination is that the proposed action would not have a substantial adverse effect on federally managed fisheries or essential fish habitat (EFH), including seagrass, which the South Atlantic Fishery Management Council (SAFMC) designates as a Habitat Area of Particular Concern (HAPC). As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, the following comments and recommendations are provided pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

Essential Fish Habitat within the Project Area

Habitats in the proposed transfer area within Peck's Lake include seagrass and unconsolidated estuarine bottom. SAFMC identifies seagrass or estuarine bottom as EFH for several species, including adult white grunt (*Haemulon plumieri*), juvenile and adult gray snapper (*Lutjanus griseus*), juvenile mutton snapper (*Lutjanus analis*), and juvenile pink shrimp (*Farfantepenaeus duorarum*). SAFMC also identifies seagrass as a HAPC for several species within the snapper-grouper complex. HAPCs are subsets of EFH that are either rare, particularly susceptible to human-induced degradation, especially important ecologically, or located in an environmentally stressed area. The site of the proposed project is within the Jensen Beach to Jupiter Inlet Aquatic Preserve, which is a state-designated nursery area and an HAPC under SAFMC's EFH and HAPC designations.



Seagrass habitats directly benefit fishery resources by providing nursery habitat. Seagrass also provide important water quality maintenance functions (such as pollution uptake), stabilize sediments, attenuate wave action, and produce and export detritus (decaying organic material), which is an important component of marine and estuarine food chains. Seagrass is part of a habitat complex that includes mangroves and hardbottoms, and the cumulative loss of these habitats continues to reduce fisheries production within Florida waters.

An agent for the applicant conducted a seagrass survey in July 2009. The drawings show the area includes a mosaic of unvegetated estuarine bottom and seagrass. The vegetated bottom at the site of the proposed project consists of turtle grass (*Thalassia testudinum*), manatee grass (*Syringodium filiforme*), star grass (*Halophila englemanii*), paddle grass (*Halophila decipiens*), and widgeon grass (*Ruppia maritima*). NMFS verified the results of the survey with information available from the Florida Fish and Wildlife Research Institute.

Impacts to Essential Fish Habitat

The draft supplemental EA indicates that seagrass would be avoided by the barge and equipment used to reslurry the material and transfer it to the beach, however the buffers between seagrass habitat and the proposed work areas are not shown, so we cannot evaluate the effectiveness of the proposed habitat protection measure. In addition, impacts to seagrass may occur when the material within the barge is reslurried and overflow of the barge occurs. This overflow may have high concentrations of suspended sediments can bury seagrass during settlement. The draft supplemental EA states the District will require pre- and post-construction seagrass surveys to determine if any adverse effects to seagrass have occurred. While not stated explicitly in the draft supplemental EA, presumably the District would take action to address any damage shown to have occurred.

EFH Conservation Recommendations

We appreciate the efforts by the District to minimize impacts to EFH by incorporating buffers into the project design and by monitoring the seagrass beds, however NMFS believes that additional best management practices are needed to ensure that seagrass habitat will not be degraded. Accordingly, NMFS finds the project would have adverse impacts on EFH. Section 305(b)(4)(A) of the Magnuson-Stevens Act requires NMFS to provide EFH conservation recommendations when an activity is expected to adversely impact EFH. Based on this requirement, NMFS provides the following:

EFH Conservation Recommendations

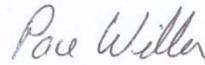
1. No construction equipment shall be allowed to stage or anchor over seagrass. In addition, we recommend that the construction crew be informed of the locations of seagrass beds and that these areas are marked prior to beginning work to avoid loss or damage resulting from construction equipment or activities.
2. Turbidity screens or curtains shall be used to contain effluent from the barge.
3. In the case that pile installation is proposed, pile driving (as opposed to pile jetting) shall be used to install all piles at the site.
4. A minimum buffer of 100 feet shall be maintained between construction activities and seagrass habitats.
5. The pre- and post construction seagrass surveys the District does to demarcate avoidance areas and to determine if the project impacted seagrass shall be conducted between June 1 and September 30 to balance the physical factors that maximize the ability to detect seagrass (mostly water clarity) and the time of year that yields peak biomass and wide distribution.

Section 305(b)(4)(B) of the Magnuson-Stevens Act and implementing regulation at 50 CFR Section 600.920(k) require your office to provide a written response to this letter within 30 days of its receipt. If

it is not possible to provide a substantive response within 30 days, in accordance with our “findings” with your Planning Functions Branch, an interim response should be provided to NMFS. A detailed response then must be provided prior to final approval of the action. Your detailed response must include a description of measures proposed by your agency to avoid, mitigate, or offset the adverse impacts of the activity. If your response is inconsistent with our EFH Conservation Recommendation, you must provide a substantive discussion justifying the reasons for not following the recommendation.

Thank you for the opportunity to provide comments. Related correspondence should be directed to the attention of Ms Jocelyn Karazsia at our West Palm Beach office, which is co-located with the US Environmental Protection Agency at USEPA, 400 North Congress Avenue, Suite 120, West Palm Beach, Florida, 33401. She may be reached by telephone at (561) 616-8880, extension 207, or by e-mail at Jocelyn.Karazsia@noaa.gov.

Sincerely,



/ for

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

cc:

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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
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REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

DEC 02 2011

Ms. Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division
National Marine Fisheries Service
263 13th Avenue South
St. Petersburg, FL 33701-5505

Dear Ms. Fay:

We have received your Essential Fish Habitat Conservation Recommendations provided by letter dated November 28, 2011, regarding the proposed staging area for St. Lucie Inlet Operations and Maintenance at Peck's Lake, Martin County, Florida. As outlined in the Environmental Assessment (EA) provided to your office on 26 October 2011, the preferred alternative proposes to transfer dredged material south down the IWW by barge to a staging area located at Peck's Lake. The staging area at Peck's Lake would include a spudded platform for barges to transfer dredged material hydraulically via pipeline across a berm to the authorized beach template (R 59- R69).

The Corps determined in the EA (section 4.3.2) that any temporary impacts associated with the preferred alternative would not adversely affect EFH and therefore did not request formal consultation per 50 CFR 600.920. As to the recommendations provided in your letter, the Corps would like to provide responses below as a courtesy.

1. No construction equipment shall be allowed to stage or anchor over seagrass. In addition, we recommend that the construction crew be informed of the locations of seagrass beds and that these areas are marked prior to beginning work to avoid loss or damage resulting from construction equipment or activities.

Response: The contractor was provided the most recent seagrass surveys and will be required to stage or anchor outside these areas. The contractor will be required to mark the edges of the grass bed near the staging area to serve as both a visual marker and to serve as a pre-construction survey of grass limits.

2. Turbidity screens or curtains shall be used to contain effluent from the barge.

Response: It is not expected that there will be any overflow from the barges, but as no impacts to seagrasses are allowed under the FDEP permit, minimization techniques will be utilized to prevent such impacts.

3. In the case that pile installation is proposed, pile driving (as opposed to pile jetting) shall be used to install all piles at the site.

Response: The equipment which will spud down in the staging area will not use jetting, it will use the weight to the equipment to push the spud into the sediment.

4. A minimum buffer of 100 feet shall be maintained between construction activities and seagrass habitats.

Response: As no impacts to seagrasses are allowed under the FDEP permit, the contractor will be required to avoid grass beds completely, and any unforeseen impacts would be evident from the post construction survey.

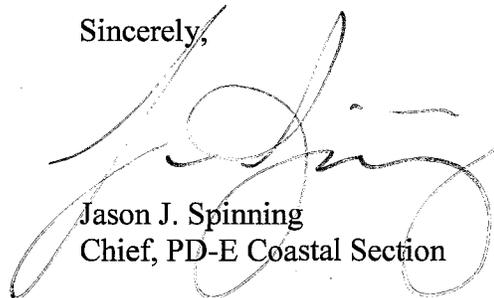
5. The pre- and post construction seagrass surveys the District does to demarcate avoidance areas and to determine if the project impacted seagrass shall be conducted between June 1 and September 30 to balance the physical factors that maximize the ability to detect seagrass (mostly water clarity) and the time of year that yields peak biomass and wide distribution.

Response: As part of the project, there will be delineation of the grass bed limits prior to staging, and after completion of the project. The project will be performed during the winter months and therefore surveys will also be performed in winter months. As there are no dredging or filling features within the Peck's Lake staging area, only transport of material, impacts to grass beds is not expected. The Corps will provide NMFS a copy of the surveys once the project is complete.

In accordance with the previously cited regulations, no further action is required by the Jacksonville District, unless NMFS-HCD plans to elevate to the Department of Army Headquarters in accordance with 50 CFR 600.920(j)(2).

If you have any questions, please contact Pat Griffin at 904-232-2286.

Sincerely,



Jason J. Spinning
Chief, PD-E Coastal Section

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