APPENDIX A

BIOLOGICAL ASSESSMENT AND SUPPLEMENTARY INFORMATION

Gulf Islands National Seashore

Fort Pickens Pier and Ferry Service

Biological Assessment

PMIS #56129, PEPC #24578, PO #5320090105

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Prepared for the National Park Service, U.S. Department of the Interior

by

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Responsible Agencies:

USDOC National Marine Fisheries Service (NMFS)

USDOI U.S. Fish and Wildlife Service (USFWS)

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ACRONYMS

ADA	Americans with Disabilities Act
BA	Biological Assessment
BMP	Best Management Practice
COSEE	Center for Ocean Sciences Education Excellence
ESA	Endangered Species Act
FDEP	Florida Department of Environmental Protection
FNAI	Florida Natural Areas Inventory
FWC	Florida Fish and Wildlife Conservation Commission
GUIS	Gulf Islands National Seashore
MMSC	Marine Mammal Stranding Center
NMFS	National Marine Fisheries Services
NPCA	National Parks Conservation Association
NPS	National Park Service
USC	U.S. Code
USDOC	U.S. Department of Commerce
USDOI	U.S. Department of the Interior
USFWS	U.S. Fish and Wildlife Services
USGS	U.S. Geological Survey

1. INTRODUCTION

This Biological Assessment (BA) has been prepared in accordance with the *Final ESA Section 7 Consultation Handbook* (March 1998 edition) (U.S. Fish and Wildlife Service [USFWS], 1998) for the U.S. Department of the Interior (USDOI), National Park Service (NPS), for informal consultation with USFWS and the National Marine Fisheries Service (NMFS) in order to comply with Section 7 of the Endangered Species Act (ESA). Documentation of correspondence with USFWS, NMFS, and the Florida Fish and Wildlife Conservation Commission (FWC) is located in Appendix A. The effects analysis in this BA is for activities proposed by NPS to design and construct a pier in the Fort Pickens National Historic District of Gulf Islands National Seashore (GUIS) to accommodate a ferry service to the Fort Pickens Area and allow NPS boats to access Fort Pickens.

PURPOSE

The purpose of the BA is to:

1. Evaluate the potential effects of the action on federally listed and proposed species and designated and proposed critical habitat.
2. Evaluate the potential effects of the action on State (FL) listed species of special management concern.
3. Determine whether any such species or habitat is likely to be adversely affected by the action.
4. Determine whether formal consultation or a conference with USFWS is necessary (50 Code of Federal Regulations 402).

PROJECT LOCATION

GUIS of Florida and Mississippi was established in 1971, and encompasses two island chains off the coast of Mississippi and Florida's panhandle. These scenic barrier islands offer historic forts, white sand beaches, and endless opportunities to learn and recreate. GUIS' forts were built over a span of approximately 150 years. Recreational opportunities abound at GUIS and include camping, fishing, swimming, sunbathing, snorkeling, hiking, biking, and birdwatching along miles of pristine shoreline (National Parks Conservation Association [NPCA], 2010).

GUIS is located along the Northern Gulf Coast of Florida and Mississippi south of Interstate 10. The proposed project area is located in the Fort Pickens Area of Santa Rosa Island, a long, narrow barrier island, off the coast of the Florida panhandle (Figure 1). Santa Rosa Island is located south of Pensacola, Florida; Pensacola Bay; and the Intracoastal Waterway. The Fort Pickens Area of GUIS is located near Pensacola Beach, Escambia County, Florida, and covers more than 1,700 acres of Santa Rosa Island. The GUIS authorized boundary also includes a marine component, which extends one mile beyond the shoreline of all island areas administered by the agency. The Fort Pickens Area is located on the bay side in the westernmost area of the island. The approximate coordinates of the project site are 87.288886°W and 30.329835°N, which is located in Section 19, Township 3S, Range 30W. The street address closest to the project area is Fort Pickens Road, Santa Rosa Island, Florida. The project area is depicted in Figure 1.

The project area can be described as coastal strand and open water. The land areas surrounding the proposed project area are beach and urban (*e.g.*, parking, visitor center, and bathrooms) (Figure 2). The urban land is associated with roads and parking lots for Fort Pickens and the museum. The open water is Pensacola Bay.

Figure 1 Site Location Map

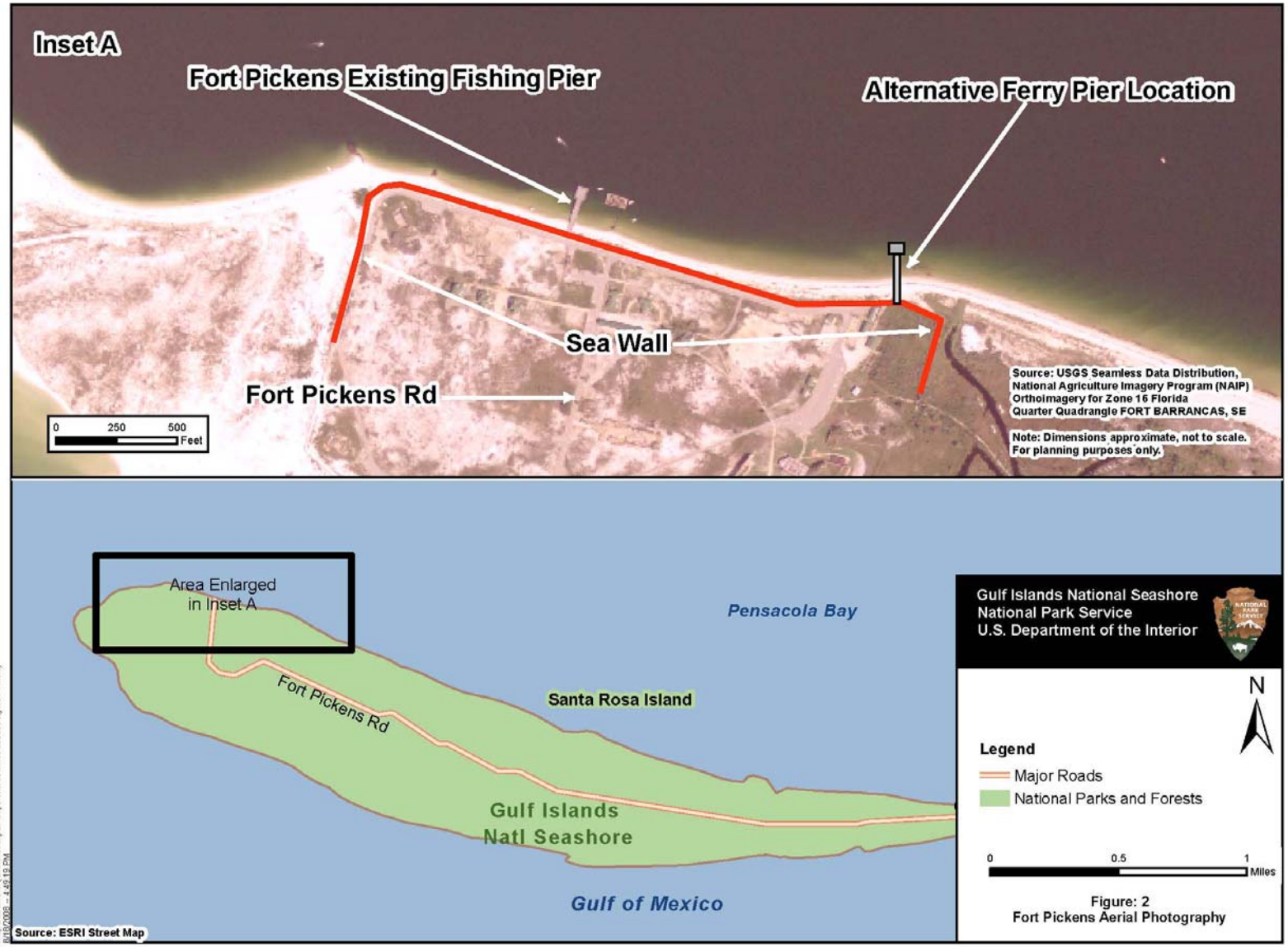


Figure 2 Fort Pickens Aerial Photography (Existing and Proposed Piers)

PROPOSED ACTION

GUIS proposes to design and construct a permanent pier in the Fort Pickens Area of GUIS as part of the implementation of the recommendations from the 2009 Fort Pickens Area/Gateway Community Alternative Transportation Study, specifically the recommendation to accommodate pedestrian ferry service to the Fort Pickens Area from the mainland. The purpose of the proposed action is to provide an alternative means of visitor access, in addition to the existing roadway, and to meet the NPS obligation under the Organic Act (16 USC § 1 et. seq.) to provide opportunities for visitor use and enjoyment of the national parks while protecting park resources unimpaired for future generations. The action is also intended to fulfill the Seashore's enabling legislation, which directs NPS to preserve for public use and enjoyment certain areas possessing outstanding natural, historic and recreational values (Public Law 91-660 (1971)) and to preserve Fort Pickens for the inspiration and benefit of the people of the United States (16 USC § 461). Establishing a passenger ferry pier at Fort Pickens will augment existing vehicular access, which can be and has been susceptible to interruption due to major impacts to roadways caused by tropical storm events.

2. PROJECT DESCRIPTION

GUIS proposes to design and construct a permanent pier in the Fort Pickens Area of GUIS as part of a new regional water transportation system and to accommodate pedestrian ferry service to the Fort Pickens Area from the mainland. Pensacola Harbor is the proposed mainland site as the landward location of the Fort Pickens ferry route. Several mainland sites are under consideration as the landward location of this transportation system, including existing piers in the City of Pensacola and Pensacola Beach. An existing pier with appropriate parking and access infrastructure would be utilized as the landward piece of the transportation system. The proposed pier and infrastructure at Fort Pickens is a key piece for the success of the regional system, and is GUIS' primary contribution to the system.

GUIS is located in Florida (Escambia, Santa Rosa, and Okaloosa Counties) and Mississippi (Jackson and Harrison Counties), and was established as a National Seashore in 1971. Fort Pickens is a pentagonal historic U.S. military fort on Santa Rosa Island in the Pensacola, Florida, area. The Fort Pickens Area represents one of the greatest concentrations of coastal defense fortifications in the country. It is named after American Revolutionary War hero Andrew Pickens. The fort was completed in 1834 and remained in use until 1947. In addition to unique cultural artifacts, the Fort Pickens Area also contains diverse marine and island ecosystems. While many visitors come to the Fort Pickens Area to experience the historic or natural resources, many also come for the excellent recreational opportunities. Fishing, beachcombing, bicycling, hiking, surfing, and camping are accommodated in the Fort Pickens Area.

The diverse attractions in the Fort Pickens Area and its proximity to multiple population centers — Gulf Breeze, Navarre, Pensacola Beach, the City of Pensacola, and Pensacola Naval Air Station — help make the Fort Pickens Area a major local and regional tourist attraction. When fully operational, the Fort Pickens Area hosts more than 700,000 visitors per year and generates more than $1.3 million annually in park revenue. However, since hurricanes in 2004 and 2005 damaged Fort Pickens Road, access has been limited to use by only hikers, bikers, private boats, and a few small commercial providers, drastically reducing visitation.

PROPOSED ACTION AND ALTERNATIVES

GUIS is developing alternative concepts for alternative access to the Fort Pickens Area of GUIS. Three conceptual design alternatives are being evaluated concurrently, and this BA was prepared to discuss effects on protected species for all three alternatives. All of the alternatives would include construction of a permanent pier in the Fort Pickens Area of GUIS, and operation of a passenger ferry that would make no more than four roundtrip runs daily between the landward terminus and Fort Pickens. The ferry pier would be located in a site with existing walkways that already connect to the Fort Pickens area trail system and comply with the Americans with Disabilities Act (ADA). No additional construction or improvements to the pier access ramps, walkways, or area trails would be required for this project, unless the existing facilities are deemed non-

Example of damage to Fort Pickens Road (on Santa Rosa Island). View to west.

compliant with NPS building standards and/or ADA requirements. It should be noted that the proposed action would not involve construction of additional support facilities (*e.g.*, boat repair, fuel station, restrooms, or snack bar).

The three conceptual design alternatives for the ferry pier are:

- Retrofit the existing Fort Pickens fishing pier by attaching a floating dock to the side of the existing pier (Figure 2).
- Construct a new fixed pier along the Fort Pickens seawall (Figure 2).
- Construct a new floating pier along the Fort Pickens seawall (same location as previous alternative, but with different design).

Construction of any of these alternative designs would involve:

- Potential upgrade of existing pilings.
- Permanent installation of pilings constructed of concrete.
- Installation or retrofit of a permanent pier (floating or fixed) for the ferry that measures up to 260 by 20 feet.
- Installation of a smaller, floating "T" pier attached to the ferry pier, to accommodate smaller boats.
- Collection of sediment core samples to assist engineers in determining depth of new pilings
- Three to four roundtrip ferry crossings per day of a passenger ferry (maximum capacity of 50 passengers) across Pensacola Bay.
- Construction activities taking place from barges and other equipment will be conducted from the water as much as possible.
- Occasional docking of additional (non-ferry) vessels at the pier (NPS boats). The number of boats and number of boat trips for these additional vessels are unknown, but based on information provided by NPS, the number of NPS boats that may use the pier is likely to be low, because most of the NPS boats would continue to use the existing pier at the nearby Lifesaving Station. Private watercraft may be allowed to use the pier on a restricted basis after the establishment of a commercial ferry system. Similar restrictions are in place at Ship Island, where GUIS has placed restrictions on private use of the dock in the Superintendent's Compendium:

  > "The northern most 120 feet of the Ship Island dock, as indicated by signs, is closed to docking of private vessels between March 1 & October 31. Determination: The National Park Service's contract with the tour boat concessionaire requires sufficient dock space be reserved for the safe and efficient loading and offloading of passengers. The northern portion of the Ship Island pier is required since these tour boats are 72 feet to 110 feet in length and require deep water and sufficient space for maneuverability."

- Improvement of existing paths and trails to make them ADA-compliant (*e.g.*, installation of handrails and installation of a boardwalk or hard surface on the existing paths and from existing paths to the pier landing)

Existing 4×4 dirt trail to seawall and beach would used to be access new floating or fixed pier to top of seawall (end of trail indicated by arrow). Trail would require upgrade for ADA compliance. View to north.

Construction of a new pier and operation of a passenger ferry service would <u>not</u> involve:

- Dredging of sediment
- Fuel or chemical storage in the Fort Pickens Area
- Land access through the Fort Pickens Area to the construction site by construction contractors or their equipment (construction activities and placement of heavy equipment would take place from a barge as much as possible)
- Land-based vehicles on the beach in the vicinity of the project area after construction

Same view as above, but view to south, from beach. Floating or fixed pier would connect to land and cross beach at this location.

3. EXISTING CONDITIONS AND ACTION AREA

Santa Rosa Island consists of approximately 99 percent quartz sand. This sand is medium-grain, 0.60 to 0.43 millimeters in diameter with few fine particles; silt; and few course particles, pebbles, or shell hash (USDOI, 2006). The terrestrial vegetation on Santa Rosa Island is the result of salt spray, sand deposition, wind flow, erosion, and human and meteorological disturbances. Vegetative communities within GUIS include dunes, forests, salt marshes, and bayous. A beach environment is present on the Gulf of Mexico side of the island, and shoreline vegetation is minimal because of continual wave and visitor activity. Vegetation that is present in the shoreline area is mainly sea oats in a dune environment (mainly the landward side of the seawall). The sea oat is tolerant of a high-salt environment. The Fort Pickens Area is mainly beach and beach dune habitat, inhabited by sea oats and other pioneer species (USDOI, 2006).

The waters surrounding the Florida District of GUIS contain approximately 1,930 acres of potential seagrass habitat in the Perdido Key area and waters north of Santa Rosa Island. Potential seagrass habitat within GUIS consists of shallow areas less than 7 feet deep, with stable sediments and slow currents. Documented seagrass species in GUIS waters include turtle grass (*Thalassia testudinum*), manatee grass (*Syringodium filliforme*), shoal grass (*Halodule wrightii*), and widgeon grass (*Ruppia maritime*). In 1949, seagrass beds in the Pensacola Bay system were extensive, but by 1975, these beds were documented to have receded or disappeared. Seagrass decline in these areas was attributed to increased turbidity caused by dredge and fill activities; boat traffic; shoreline modification; reduced water quality from residential, commercial, and industrial development; and hurricane-related effects. The area north of Santa Rosa Island is one of the only water bodies within the Pensacola Bay watershed that still contain moderately diverse seagrass beds (Florida Department of Environmental Protection [FDEP], 2001). Figure 3 depicts documented seagrass beds and the proposed ferry route (U.S. Geological Survey [USGS], 2003). Based on the USGS 2003 mapping and observations in the project area by the GUIS Natural Resource Management Specialist (Hoggard, 2009), there are no seagrass beds in the proposed project area.

The project action area would include:

1. The existing fishing pier area and general vicinity at Fort Pickens, which would be expanded to accommodate ferry boat traffic (see photos on page 3-3).
2. The coastal strand adjacent to the pier, which would be shaded by the enlarged pier structure and scoured by ferry propellers.
3. Disturbance of bottom substrate due to collection of sediment coring samples.
4. Open waters of Pensacola Bay that would be crossed by the ferry boat.
5. Open waters of Pensacola Bay that would receive a short-term increase in turbidity from construction operations.
6. Airspace that would carry construction noise.
7. The beach area between the proposed new pier and existing trail network, which would be covered by a permanent hard walkway (ADA-compliant) or pier structure.
8. Potential disturbance of the Santa Rosa beach mouse and its habitat (vegetation).

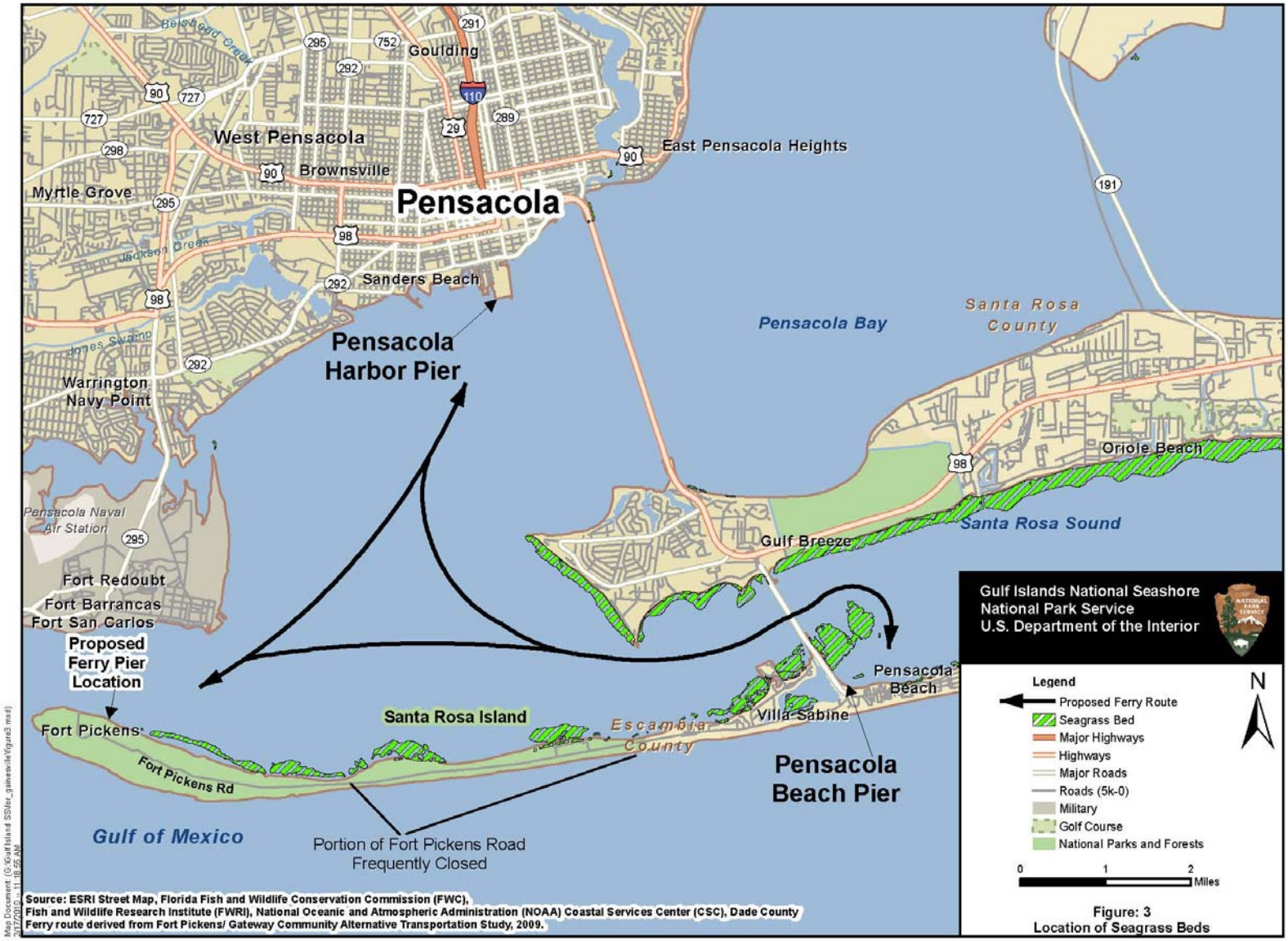


Figure 3 Location of Seagrass Beds

Existing Fort Pickens fishing pier and boardwalk. View to west.

Boardwalk from existing Fort Pickens fishing pier connecting to paved parking area. View to west-southwest.

Fishing on existing Fort Pickens fishing pier.

4. SPECIES/CRITICAL HABITAT CONSIDERED

Pensacola Bay has been designated as an Outstanding Florida Water (OFW), indicating this body of water is worthy of special protection due to natural attributes. An OFW is designated by the Florida Environmental Regulation Commission (ERC), a non-salaried, seven-member board, who represent agriculture, the development industry, local government, the environmental community, citizens, and members of the scientific and technical community. Once it is determined that the environmental, social, and economic benefits of the Special Water status outweigh the environmental, social, and economic costs (Rule 62-302.700(5), Florida Administrative Code [F.A.C.]), the ERC may designate a water of the State as a Special Water, an OFW. The Florida Department of Environmental Regulation (FDEP) is granted the authority by Section 403.061(27), Florida Statutes (F.S.) to establish rules for OFW, which are deemed worthy of special protection due to the natural attributes of the OFW.

Other waters, Santa Rosa Sound and the Gulf of Mexico surrounding GUIS area also designated as OFWs. The purpose of the designation as an OFW is to protect existing good water quality. FDEP will not issue permits for direct pollutant discharges to OFWs which would lower ambient (existing) water quality or for indirect discharge which would significantly degrade the OFW. With mitigation measures (Section 7), and the small footprint for construction of the Fort Pickens Pier, it is unlikely the proposed action will result in long-term adverse effects to the outstanding Florida waters surroundings Santa Rosa Island.

In or in the vicinity of GUIS, several terrestrial and marine species are listed as protected by USFWS, FWC, and NMFS. Federal and state endangered and threatened species and species of concern documented to occur in GUIS are listed in Table 1 (USFWS, 2009a, 2010; NMFS, 2009a, 2009b; FWC, 2009).

PROTECTED SPECIES OBSERVED AT GUIS THAT ARE NOT LIKELY TO BE PRESENT IN THE PROJECT AREA

It is highly unlikely that many of the listed species reported or documented at GUIS (Table 1) utilize the project site, because of a lack of suitable habitat and/or prey. Regular and re-occurring annual surveys conducted by GUIS biologists have not found many of these species in the area of interest. Protected species for which there is no suitable habitat in the project area includes Florida black bear, Perdido beach mouse, gopher tortoise, salt marsh topminnow, smalltooth sawfish, coastal plain honeycomb head, large-leaved jointweed, Cruise's goldenaster, Godfrey's goldenaster, and perforated reindeer lichen. Because these species are unlikely to occur in the project area, they are not discussed further in this BA.

PROTECTED SPECIES AND CRITICAL HABITAT LIKELY TO BE PRESENT IN THE PROJECT AREA

The following subsections present information concerning species likely to be present in the project area. Establishment of the likely presence of species in the project area is based on research regarding species' preferred habitat and personal communication with GUIS, USFWS, and NMFS staff.

Florida Manatee

The Florida manatee (*Trichechus manatus latirostrus*), a subspecies of the West Indian manatee, is listed as a federally endangered species. The main threat to the Florida manatee is increased boat traffic and other accidents associated with expanding development in Florida. Manatees are found in coastal waters, bays, rivers, and (occasionally) lakes, where they feed on seagrass and other aquatic vegetation. Manatees may be found in any coastal or estuarine waters in Florida, but are most common in peninsular Florida

Table 1: List of Documented Occurrences of Protected Species and Critical Habitat in or near Gulf Islands National Seashore

Listed Species	Scientific Name	Federal Status	State of Florida Status	Likely Found in Project Area (a)
Terrestrial Mammals				
Florida black bear	*Ursus americanus floridanus*		T	
Perdido Key beach mouse	*Peromyscus polionotus trissyllepsis*	E	E	
Santa Rosa beach mouse	*Peromyscus polionotus leucocephalus*	SOC		X
Birds				
American oystercatcher	*Haematopus palliatus*		SSC	X
Black skimmer	*Rynchops niger*		SSC	X
Brown pelican	*Pelecanus occidentalis*		SSC	X
Least tern	*Sterna antillarum*		T	X
Little blue heron	*Egretta caerulea*		SSC	X
Osprey	*Pandion haliaetus*		SSC	X
Piping plover	*Charadrius melodus*	T	T	X
Reddish egret	*Egretta rufescens*		SSC	X
Snowy egret	*Egretta thula*		SSC	X
Southeastern snowy plover	*Charadrius alexandrinus tenuirostris*		T	X
Tricolored heron	*Egretta tricolor*		SSC	X
White ibis	*Eudocimus albus*		SSC	X
Marine Mammals				
Florida manatee	*Trichechus manatus latirostris*	E		X
Reptiles				
American alligator	*Alligator mississippiensis*		SSC*	X
Atlantic green sea turtle	*Chelonia mydas*	E	E	X
Atlantic loggerhead sea turtle	*Caretta caretta*	T	T	X
Gopher tortoise	*Gopherus polyphemus*		T	
Hawksbill sea turtle	*Eretmochelys imbricata*	E	E	X
Kemp's Ridley sea turtle	*Lepidochelus kempii*	E	E	X
Leatherback sea turtle	*Dermochelys coriacea*	E	E	X
Fish				
Gulf sturgeon	*Acipenser oxyriynchus desotoi*	T	SSC	X
Saltmarsh topminnow	*Fundulus jenkinsi*		SSC	
Smalltooth sawfish	*Pristis pectinata*	E	E	
Plants				
Coastal plain honeycomb head	*Balduina angustifolia*		SSC	
Cruise's goldenaster	*Chrysopsis gossypina*		SSC	
Godfrey's goldenaster	*Chrysopsis godfreyi*		E	
Large-leaved jointweed	*Polygonella macrophylla*		SSC	
Perforated reindeer lichen	*Cladonia perforata*	E	E	
Critical Habitat				
Gulf sturgeon Critical Habitat				
Essential Fish Habitat				

Source: NMFS, 2009a, 2009b; USFWS, 2009a, 2010; FWC, 2009.
Prepared by: SEM Checked by: JMR
T=Threatened
E=Endangered
SSC= Species of special concern
SOC=Species of concern
*Because of similarity of appearance.
(a) Based on personal communication with GUIS Natural Resource Management Specialist (Hoggard, 2009) and research regarding preferred habitat.

(Florida Natural Areas Inventory [FNAI], 2001). At GUIS, manatee sightings are rare but have been documented in the Gulf of Mexico and Pensacola Bay. Most manatee sightings are in the waters of the Gulf of Mexico, although some individuals have been documented in Pensacola Bay and likely in the area north of Santa Rosa Island (east of the project area) and the Perdido Key area (as stated above, Perdido Key is also located within GUIS), where seagrass beds are present (Hoggard, 2009).

Sea Turtles

Five species of federally listed sea turtles are found in the Gulf of Mexico: Atlantic loggerhead turtle (*Caretta caretta*), Atlantic green turtle (*Chelonia mydas*), leatherback turtle (*Dermochelys coriacea*), hawksbill turtle (*Eretmochelys imbricate*), and Kemp's Ridley turtle (*Lepidochelys kempi*). All five species have been observed within GUIS nesting, swimming, or feeding on the Gulf side of Santa Rosa Island (Figure 4) or swimming or feeding on seagrass on the bay side of Santa Rosa Island (Hoggard, 2009). Turtle nesting typically occurs on sandy beaches during the months of May through August, with hatching occurring from late July through October. The Gulf side of Santa Rosa Island is a designated sea turtle nesting beach. Figure 4 depicts the sea turtle nesting beaches along Santa Rosa Island and strandings in the Fort Pickens area. The term "stranding" as it relates to sea turtles is defined as sea turtles that are found on the beach either dead or alive (Marine Mammal Stranding Center [MMSC], 2010).

Atlantic green sea turtle

The Atlantic green sea turtle breeding populations in Florida and on the Pacific Coast of Mexico are federally listed as endangered. All other populations are federally listed as threatened. The main threat to the Atlantic green sea turtle is long-term harvest of eggs and adults on beaches, and juveniles and adults on feeding grounds (NMFS, 2009b). In the Gulf of Mexico, green sea turtles are found in offshore and near-shore waters. Atlantic green sea turtles are herbivorous, feeding mainly on seagrasses and algae. In the southeastern United States, nesting generally occurs between June and September on sandy beaches, including islands. Females nest at approximately two-week intervals, laying an average of five clutches. Eggs hatch approximately two months later. Hatchlings swim to offshore areas, where they live for several years. As the juvenile mature, they return to near-shore foraging grounds, where they become almost exclusively herbivorous (NMFS, 2009b). Atlantic green sea turtles nest on the Gulf side of Santa Rosa Island (the proposed project area is located on the Pensacola Bay side of Santa Rosa Island). Atlantic green sea turtles have been observed near Santa Rosa Island in Pensacola Bay, foraging in shallow areas where seagrass is present (Hoggard, 2009).

Atlantic Loggerhead Turtle

The Atlantic loggerhead turtle, federally listed as threatened, is the most abundant sea turtle found in U.S. coastal waters. Recent analysis of nesting data from the Index Nesting Beach Survey program (Witherington *et al.*, 2009) in southeast Florida show that the population is declining. Main threats to loggerheads include incidental capture in fishing gear and direct harvest in many places of the world. In the southeastern United States, mating occurs between late March and early June, and nesting occurs between late April and early September. Turtles hatch from eggs between late June and mid-November (NMFS, 2009b). Loggerheads nest on ocean beaches, generally preferring high-energy, relatively narrow, steeply sloped, coarse-grain beaches. Post-hatchling loggerheads commonly linger for months in waters just off the nesting beach. Eventually juveniles are transported by ocean currents farther offshore. Between the ages of 7 and 12 years, juveniles migrate to near-shore coastal areas and continue maturing to adulthood (NMFS, 2009b). The loggerhead turtle is the most common sea turtle to nest on the Gulf side of Santa Rosa Island. The loggerhead turtle has been observed near Santa Rosa Island in Pensacola Bay, foraging in shallow areas where seagrass is present (Hoggard, 2009).

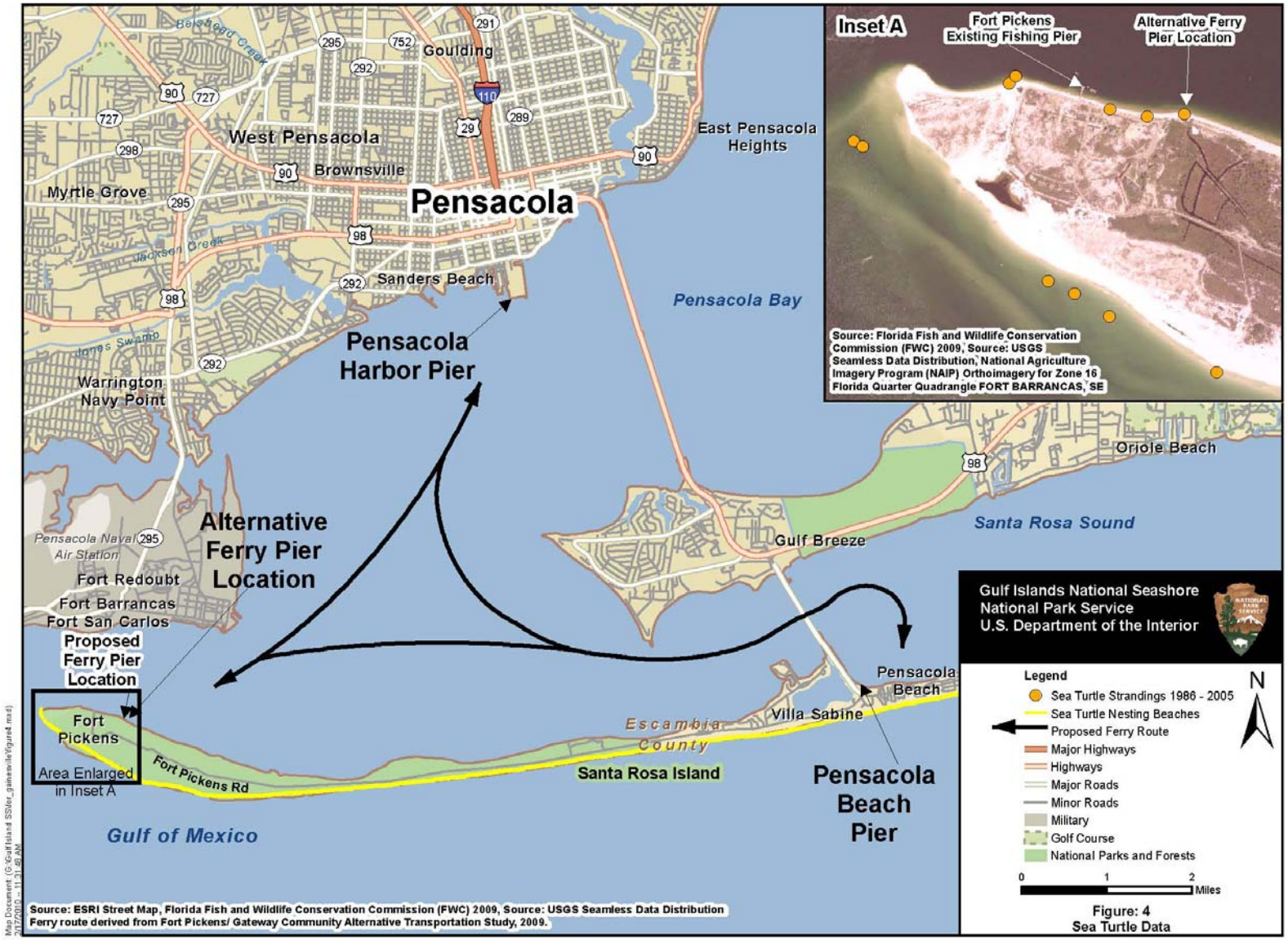


Figure 4 Sea Turtle Data

Kemp's Ridley sea turtle

Kemp's Ridley sea turtle, federally listed as endangered and the most critically endangered of all five of the listed sea turtle species endemic to the area is distributed throughout the Gulf of Mexico and U.S. Atlantic seaboard. The main threat to Kemp's Ridley sea turtle is the incidental capture in fishing gear (NMFS, 2009b). Nesting occurs from May to July, with an incubation period of 50 to 60 days. Adult Kemp's Ridley turtles are typically found in near-shore muddy or sand bottom habitats. Their diet consists mainly of swimming crabs, fish, jellyfish, and mollusks. Post-hatchlings travel offshore to avoid predation in shallow waters. Once the Kemp's Ridley turtle reach a carapace length of approximately 8 inches, it returns to near-shore waters to feed and develop (NMFS, 2009b). This turtle has experienced a dramatic decrease in documented nesting sites over the past 60 years; however, today the Kemp's Ridley turtle population appears to be in the early stages of recovery (NMFS, 2009b). The Kemp's Ridley turtle is known to nest on the Gulf side of Santa Rosa Island and has been observed in the water on the bay side of the island, likely foraging in seagrass beds (Hoggard, 2009).

Leatherback sea turtles

Leatherback sea turtles are federally listed as endangered. Main threats to leatherback turtles are long-term harvest and incidental capture in fishing gear (NMFS, 2009b). The Leatherback turtle mates in the waters adjacent to nesting beaches and along turtle migratory corridors. Females nest on sandy, tropical beaches several times during a nesting season, which occurs from March to July, typically at 8- to 12-day intervals. Incubation time is approximately 60 to 65 days. Leatherback turtles are common in offshore waters, but also forage in coastal waters. After nesting, females migrate from tropical waters to more temperate waters. Leatherback turtles rarely nest on Santa Rosa Island; however, GUIS documented its first leatherback nest in 2000 (NPS, 2007).

Hawksbill sea turtle

The Hawksbill sea turtle, federally listed as endangered, is circumtropical (worldwide distribution, but likely to occur between the Tropic of Cancer and the Tropic of Capricorn). The main threat to hawksbills is habitat loss of coral reef communities (NMFS, 2009b). In the continental United States, nesting is limited to the southeast coast of Florida and the Florida Keys (NMFS, 2009b). Although the panhandle of Florida is north of the Tropic of Cancer, Hawksbill sea turtles have been observed in GUIS, but they are very rare and nesting on Santa Rosa Island has never been reported or documented (Hoggard, 2009).

American alligator

The American alligator, *Alligator mississippiensis*, formerly on the federal endangered species list, is now considered fully recovered and is listed as threatened because of similarity of appearance to other crocodilians. The American alligator is also listed as a species of special concern by the State of Florida because of similarity of appearance. The American alligator inhabits permanent bodies of fresh waters, occasionally wandering into brackish and salt waters. Harvest of alligators and eggs is regulated by FWC (FNAI, 2001). Although brackish and salt waters surround Santa Rosa Island, GUIS only occasionally receives reports of alligator sightings in the water and on the beach (Hoggard, 2009).

Gulf Sturgeon and Gulf Sturgeon Critical Habitat

The Gulf sturgeon, *Acipenser oxyrinchus*, is federally listed as a threatened species. The Gulf sturgeon historically was threatened because of overfishing and then by habitat loss due to construction of water control structures, dredging, groundwater extraction, and flow alterations. The Gulf sturgeon is an anadromous fish that migrates from salt water into coastal rivers during the warmer months to spawn. The sturgeon often stays in the Gulf of Mexico and its estuaries and bays in cooler months. Adults range in size from 4 to 8 feet in length and can live for up to 60 years. The Gulf sturgeon is a bottom feeder that

only forages in brackish or marine habitats, eating primarily macroinvertebrates. Prey species are often associated with sandy substrates. In 2003, USFWS and NMFS designated critical habitat for the Gulf sturgeon for 14 geographic areas along the Gulf of Mexico and in rivers and tributaries feeding the Gulf of Mexico (NMFS, 2009a). The ESA requires the federal government to designate critical habitat for any species under the ESA. Critical habitat is defined as specific areas within a geographic area occupied by the species at the time it becomes a listed species. The waters of the project site, and surrounding waters, are located within Gulf sturgeon critical habitat in a designated geographic area (Figure 5). The Gulf sturgeon utilizes Pensacola Bay as a migratory corridor from breeding grounds to winter foraging grounds. The Gulf sturgeon has been observed in the waters of GUIS (Hoggard, 2009).

The action addressed within this BA falls within critical habitat for Gulf sturgeon (Figure 5). USFWS and NMFS designated critical habitat for the Gulf sturgeon for 14 geographic areas among the rivers and tributaries of the Gulf of Mexico. Near-shore waters within 1 nautical mile of the mainland from Pensacola Pass to Apalachicola Bay, the Perdido Key area, and the area north of Santa Rosa Island were designated as critical habitat, because they are believed to be important migratory pathways for feeding and genetic exchange between Pensacola Bay and the Gulf of Mexico (NMFS, 2009a).

Essential Fish Habitat

The 1996 Magnuson-Stevens Act requires cooperation among the National Marine Fisheries Services (NMFS), fishers, and federal and state agencies to protect, conserve, and enhance essential fish habitats (EFH). EFH is defined as those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity. The designation and conservation of EFH seeks to minimize adverse effects on habitat caused by fishing and non-fishing activities. All of Pensacola Bay and waters surrounding GUIS are designated as EFH. Therefore, EFH is present in the vicinity of the proposed ferry pier and the ferry operation routes. EFH in Pensacola Bay provides habitat for several species of fish and shellfish including: brown shrimp (*Penaeus aztecus),* gray snapper (*Lutjanus griseus),* Gulf stone crab (*Menippe adina),* pink shrimp (*Penaeus duorarum),* red drum *(Sciaenops ocellatus),* Spanish mackerel (*Scomberomorus maceulates),* spiny lobster (*Panulirus argus),* and white shrimp (*Penaeus setiferus).* Coastal and marine habitats are being physically destroyed as well as degraded by indirect impacts. Many habitats are lost due to human-related threats including pollution, coastal development, dredging, and inappropriate fishing techniques. The designation of EFH in coastal and marine waters aims to protect these habitats from further destruction. Any Federal Agency that takes an action that could adversely affect EFH by reducing the quantity or quality of habitat must work with NOAA Fisheries to identify impacts. NOAA Fisheries must then provide recommendations for conserving the habitat and reducing the impact of that action.

Santa Rosa Beach Mouse

The Santa Rosa beach mouse, *Peromyscus polionotus leucocephalus*, a federally listed species of concern (USFWS, 2010), occurs only on Santa Rosa Island, and according to a 1920 report (Howell, in FWC, 2008), the mouse formerly occupied dune habitat throughout the 47 miles of the island. Gore and Schaeffer (1993, in FWC, 2008) state that land development at Pensacola Beach, Navarre Beach, and Fort Walton Beach (Okaloosa Island) fragmented the single original population into four separate populations, as reflected in the exhibit that follows Figure 5.

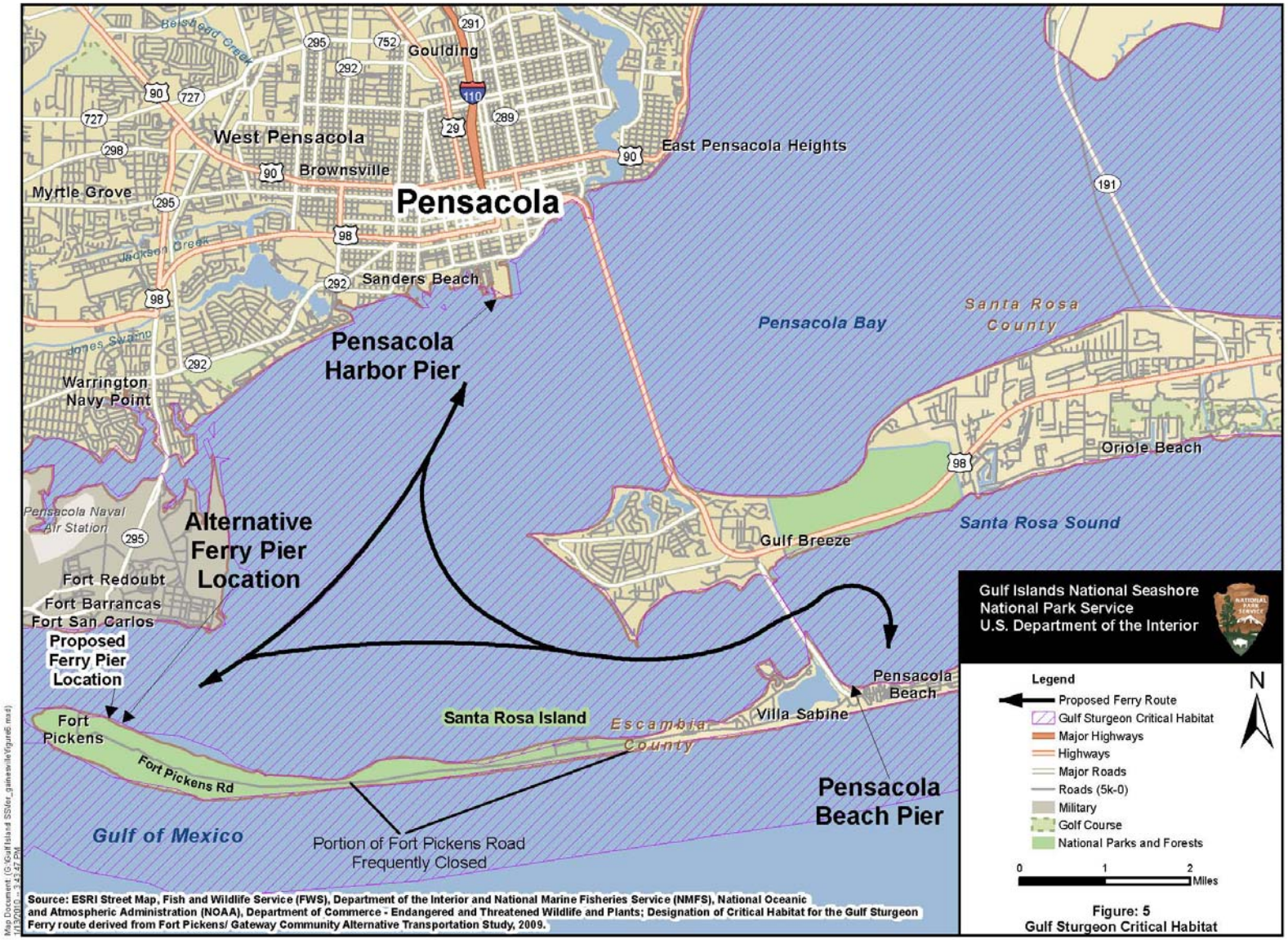
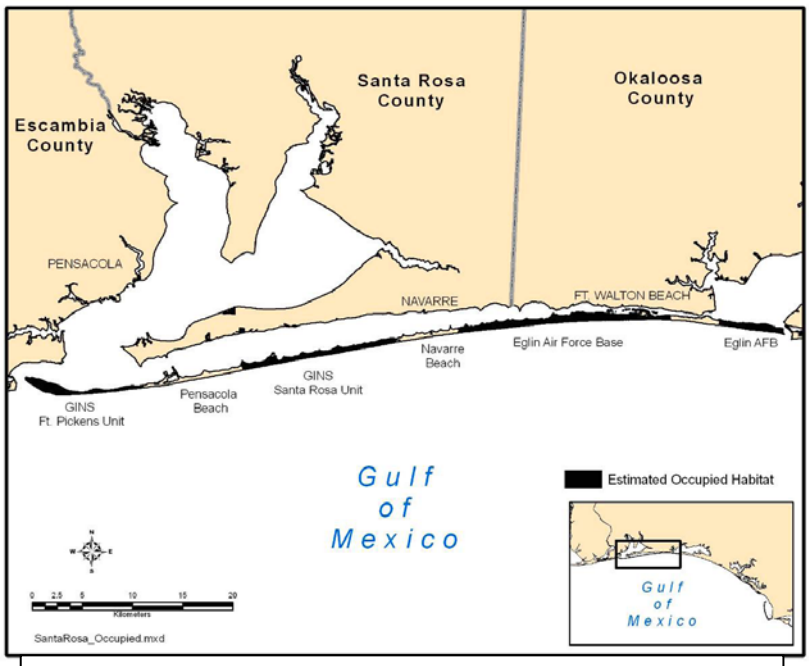


Figure 5 Gulf Sturgeon Critical Habitat

USFWS staff (Kelly, 2009) reported that a survey for the Santa Rosa beach mouse was conducted in 2007 (FWC, 2008), and 25 Santa Rosa beach mice were identified in the Fort Pickens Area of GUIS at that time. Mice were trapped during the study, and tracks were recorded in the sand of the Fort Pickens Area of GUIS. Santa Rosa Island was severely damaged by Hurricane Ivan in 2004, but sand tracks indicate that mice persist on GUIS property from Navarre Beach to Fort Pickens (Nicholas, in FWC, 2008). The Santa Rosa beach mouse typically inhabits primary, secondary, and occasionally tertiary sand dunes with a moderate cover of grasses and forbs (FNAI, 2000), and other typical dune vegetation. Reportedly, Santa Rosa beach mouse habitat is found in several areas of Santa Rosa Island, including the Fort Pickens Area. In the proposed project area, there is limited Santa Rosa beach mouse habitat (Hoggard, 2009). The USFWS encourages avoidance to any native coastal vegetation, when feasible; impacts to beach mouse habitat could threaten the population stability of the Santa Rosa beach mouse.



Areas occupied by Santa Rosa beach mice, Santa Rosa Island, Florida, 1993. Source: FWC, 2008.

Shorebirds

In late 2004, Hurricane Ivan battered the panhandle coast of Florida, including GUIS, which caused extensive storm surge and flooding that destroyed a number of buildings, roads, and other infrastructure, as well as felled numerous trees. The majority of GUIS lands located on Santa Rosa Island was washed over (*i.e.*, dunes washed away, leaving large open areas of flat, non-vegetated terrain. These flat areas of GUIS temporarily became excellent habitat for nesting shorebirds, such as plovers, terns, skimmers, and gulls (USDOI, 2006). The federally listed piping plover (*Charadrius melodus*) was observed over wintering during monitoring surveys. The piping plover use bayside shorelines for feeding and roosting during migration and winter months, and GUIS staff has documented the presence of the piping plover on Fort Pickens. Areas used by the piping plover are ephemeral in nature and these habitats can change over time. The proposed project could affect the food base for the piping plover and decrease habitat value, if the proposed project is located within or adjacent to preferred piping plover habitat. While natural successional processes is resulting in the island ecosystem reaching equilibrium, including revegetation, the area in general still contains broad expanses of open habitat ideally suited for nesting shorebirds. That said, however, ideal nesting habitat is not present in the proposed area for the passenger ferry pier, based on NPS surveys and data from FWC (Figure 6). Some of the historic nest locations depicted on Figure 6 are now submerged as a result of beach erosion from tropical storms and hurricanes since 2004 (Figure 6 reflects 2007 imagery). Nesting habitat is still present and common place within the broad open areas of Santa Rosa Island (Gulf and Sound sides of the island). During nesting season (March through August), GUIS biologists locate, count, and monitor nests of the least tern (*Sterna antillarum*), snowy plover (*Charadrius alexandrinus tenuirostris*), and black skimmer (*Rhynchops niger*). To protect these nesting shorebirds, GUIS temporarily closes nesting areas above the beach (Hoggard, 2009). Other shorebirds and wading birds that are known to occasionally forage in the Fort Pickens area include American

Figure 6 Sea Bird Nesting Locations

oystercatcher, black skimmer, least tern, little blue heron, reddish egret, snowy egret, southeastern snowy plover, tricolored heron, and white ibis. All these additional listed species are currently not known to nest in the project area (Hoggard, 2009).

Brown pelicans are observed foraging and loafing on the Gulf beach side and Sound side of Santa Rosa Island year-round; however, they do not nest in GUIS (Hoggard, 2009).

Snowy plovers, least terns, and other migratory bird species are protected by the Migratory Bird Treaty Act (MBTA); it is illegal to hunt, take, capture or kill any migratory bird, except as permitted by the USFWS. Frequent disturbances of birds on the beach, especially disturbances that cause birds to take flight, may threaten their survival.

Seagrass

The Endangered Species Act protects only one species of seagrass, Johnson's seagrass (*Halophilia johnsonii*) which is found only in the Indian River Lagoon, Florida, not in the Gulf waters of the Florida panhandle. Although other seagrass species are not protected species in the same manner as the state and federally listed species reflected in Table 1, other species of seagrass are protected as critical for fish habitat, and national and local laws help protect seagrass in a variety of ways. Section 404 of the Clean Water Act protects seagrass by controlling the disposal of dredge materials (sediment), which can block light and kill seagrass. Section 10 of the Rivers and Harbors Act protects seagrass by regulating the building of structures in the water, which can block light or water flow to seagrass and potentially kill the seagrass. Local laws often protect seagrass by limiting boating and fishing access in sensitive areas (COSEE, 2010).

The waters surrounding the Florida Districts of GUIS contain approximately 1,930 acres of potential seagrass habitat in the Perdido Key area and waters north of Santa Rosa Island according to FDEP's Seagrass Management Plan for Big Lagoon and Santa Rosa Island (2001). Potential seagrass habitat within GUIS consists of shallow areas less than ten feet deep with stable sediments and slow currents. Seagrass species in GUIS waters include turtle grass, *Thalassia testudinum*, manatee grass, *Syringodium filliforme*, shoal grass, *Halodule wrightii*, and widgeon grass, *Ruppia maritima*. The area north of Santa Rosa Island is one of the only water bodies within the Pensacola Bay watershed that still contain moderately diverse seagrass beds (FDEP, 2001). Figure 3 shows documented seagrass beds, depicted less than one-half mile east of the proposed new pier.

5. EFFECTS ANALYSIS

The proposed construction alternatives for locating a new ferry pier at GUIS would include the following:

- Retrofit the existing Fort Pickens fishing pier.
- Construct a new fixed pier along the Fort Pickens seawall.
- Construct a new floating pier along the Fort Pickens seawall.

FLORIDA MANATEE

Under the proposed action, manatees could be affected by the proposed action in the following ways:

- Potential injury or disturbance of manatees during construction activities.
- Potential injury of manatees caused by ferry-manatee collisions in the proposed ferry route in Pensacola Bay.

The noise and activity associated with proposed construction activity (*e.g*., construction equipment, personnel, work boats, and placing and securing pier structure) may temporarily disturb manatees in the vicinity of the project area through temporary impacts on water quality (turbidity) and underwater noise; may temporarily increase the potential for manatee-boat collisions in the project area during construction; may permanently increase the potential for manatee-ferry collisions on the ferry route once the proposed ferry is operational; and may permanently increase the potential for manatee-boat collisions with NPS and recreational boats. Although GUIS does not monitor for the species, in the Florida District of GUIS, manatee sightings are reported as rare but have been documented in the Gulf of Mexico and Pensacola Bay (USDOI, 2006). Most manatee sightings are in the waters of the Gulf of Mexico, although some manatees have been documented in Pensacola Bay. Most manatee sightings that occur in GUIS waters are in late spring and summer, when water temperatures range from the upper 70s to low 80s (USDOI, 2006).

The proposed ferry service and NPS and recreational boats utilizing the new pier would introduce additional vessel traffic into Pensacola Bay, the channel between the project area and the Pensacola Harbor pier, and the channel between the project area and the Pensacola Beach pier (approximately three to four roundtrip ferry voyages daily). Currently, recreational and commercial boating traffic is present within Pensacola Bay. The new pier would increase the number of boat trips in Pensacola Bay (three to four roundtrips by the proposed ferry and potential increased boat trips by NPS), and increase the boating activity in the vicinity of the proposed pier. Although the manatee is sometimes observed feeding in seagrass beds located in Santa Rosa Sound north of Santa Rosa Island (which is within Pensacola Bay, but east of the proposed project area) (Figure 3), seagrass would not be present in the channel because of the channel depth and lack of light for seagrass to grow (as discussed in Section 4.2.7). Seagrass prefers to grow in water depths of 10 feet or less. Therefore, it is anticipated that if the manatee is present or observed in the project area, then it would not be feeding or mating but would be a transient species in the proposed project area or the ferry route.

With mitigation actions (Section 7), the proposed action **may affect, but is not likely to adversely affect,** the manatee.

SEA TURTLE

Five species of sea turtles occur in the waters of GUIS, and each of the five species is federally threatened or endangered (Section 4.2.2) (Table 1). Under the proposed action, sea turtles could be affected in the following ways:

- Potential injury or disturbance of sea turtles during construction activities.
- Potential injury of sea turtles on the ferry route in Pensacola Bay and in the vicinity of the proposed pier.
- Potential disturbance of sea turtles by lights, if utilized, associated with construction or operation of the ferry/ferry pier.

The noise and activity associated with proposed construction (*e.g*., construction equipment, personnel, boats, and placing and securing the pier structure) may temporarily disturb or injure the sea turtle, if present, during construction due to:

- The use of vehicles on the beach in the vicinity of the project area.
- Construction activity in the water in the vicinity of the project area.
- Temporary degradation of water quality (turbidity).

The activity associated with the new pier may permanently disturb or injure the sea turtle because of:

- Potential for sea turtle injury when the ferry is operational (ferry route across Pensacola Bay and in the vicinity of the pier).
- Potential for sea turtle injury created by NPS boats utilizing the proposed new pier, although NPS usage of the ferry pier is anticipated to be infrequent.
- Potential for sea turtle injury created by recreational boats utilizing the proposed new pier, if recreational use is allowed.
- In the unlikely event that permanent lighting is installed, it has the potential to disorient sea turtles.
- Permanent degradation of water quality (turbidity) caused by the boats utilizing the new pier.

In general, sea turtle populations are adversely impacted by loss and alteration of nesting habitat, increased mortality from boat strikes, and entanglement in commercial fishing gear. Each year, numerous adult and sub-adult sea turtles are found dead in GUIS and the surrounding waters. Death is typically caused by boat strikes, ingestion of commercial fishing longline hooks and line, drowning (in commercial fishing gear), and natural causes (USDOI, 2006).

Sea turtles are known to be present in GUIS waters, but GUIS does not collect monitoring data regarding the abundance and distribution of sea turtles in GUIS waters. In the Florida District of GUIS, sea turtles are mainly observed in Gulf of Mexico waters. However, jellyfish are a common sea turtle prey item (USFWS, 2009b), which may also attract sea turtles into the Perdido Key area (west of Santa Rosa Island) and the area north of Santa Rosa Island. Additionally, Atlantic green turtles are likely attracted to feed in the seagrass beds in the Perdido Key area and the area north of Santa Rosa Island (east of the project area) (USDOI, 2006)..

Sea turtles are known to nest on the beaches within GUIS during spring and summer, including Santa Rosa Island (Figure 4). According to USDOI (2006), loggerhead turtles constitute the majority of sea turtle nesting in the GUIS Florida District. Atlantic green sea turtles occasionally nest in the GUIS Florida District, and five Kemp's Ridley nests and one leatherback sea turtle nest have been documented in recent years. Park biologists along with a cadre of volunteers mark nests, track dates, and monitor nests.

There is potential for sea turtle encounters with the proposed ferry, ferry pier, and other NPS boats and private vessels using the pier. Ferry service would introduce additional vessel traffic into Pensacola Bay (up to four roundtrip ferry voyages daily), which may lead to increased degradation of water quality. The new pier would increase the number of boat trips in Pensacola Bay, would increase the boating activity in the vicinity of the proposed pier, and could increase the potential for watercraft collisions with sea turtles. Currently, recreational and commercial boating traffic is present in Pensacola Bay, and the proposed action would increase the boating traffic in Pensacola Bay.

Sea turtles are generally highly mobile and generally react quickly to the presence of water vessels. Sea turtles do not appear to be overly disturbed by the physical presence of and sounds produced by vessels and vessel traffic. They simply dive when approached by a vessel and avoid areas of intensive human activity (NMFS, 2002). Additionally, it is anticipated that these highly mobile species, if present, would avoid the project site during construction activities because of construction noise, the physical presence of machinery and generally higher concentrations of people at any given time. Therefore, the proposed action is not anticipated to substantially increase the potential for watercraft collisions with sea turtles. However, if sea turtles are dozing and loafing at the sea surface, they can be vulnerable to boat strikes. Cooler winter water temperatures can also leave sea turtles more vulnerable to boat strikes.

No additional commercial fishing is anticipated under the proposed action, so no additional sea turtle mortality due to entanglement with commercial fishing line or commercial fishing gear is anticipated.

With mitigation (Section 7), it is anticipated that the proposed action **may affect, but is not likely to adversely affect,** the protected sea turtle species.

AMERICAN ALLIGATOR

Under the proposed action, it is not anticipated that the American alligator would be affected by the proposed action.

The American alligator was formerly on the federal endangered species list but is now considered fully recovered and is listed as a Florida species of special concern because of similarity of appearance to other crocodilians.

GUIS does not have monitoring data documenting population (relative abundance and density) trends for the American alligator, but it is known to be present in the wetlands in the Fort Pickens and Naval Live Oaks Areas. GUIS occasionally receives reports of alligators sighted on the beach, and the American alligator is fully able to swim in marine waters and is known to inhabit brackish lagoons and wetlands on islands (USDOI, 2006).

The proposed project area is not located in a wetland or brackish lagoon, although a wetland is located just east of the project area. Alligators, unless they are comfortable with the presence of humans (*i.e.*, have become habituated due to feeding by humans), typically avoid human contact. Because of the noise and people associated with construction of the proposed pier and operation of the ferry, the American alligator would likely avoid the project area. Potential degradation of water quality due to construction activity and operation of the ferry is not anticipated to affect the alligator, because it is found in almost any water body (*e.g.*, lakes, rivers, canals, ditches, and stormwater ponds) throughout the State of Florida. Adults and young feed on a variety of animals, including fish, turtles, and other aquatic organisms.

Based on the effects analysis of the proposed action, it is anticipated the proposed action would have **no effect** on the protected American alligator.

GULF STURGEON AND GULF STURGEON CRITICAL HABITAT

The Gulf sturgeon, a highly mobile species, would very likely avoid the project site during construction activities because of construction noise and the physical presence of machinery. Gulf sturgeon critical habitat is located in the water area of the proposed action (Figure 5). The proposed action (pier) and associated ferry route would be located within Gulf sturgeon critical habitat Unit 9. Water quality may be affected by pier construction through a temporary increase in turbidity. The modification of $\leq$ 5,200 square feet of non-vegetated bay bottom would be affected in this unit. The proposed action could affect water quality and prey abundance. The new pier would increase the number of boat trips in Pensacola Bay (three to four roundtrips by the proposed ferry), would increase the boating activity in the vicinity of the proposed pier, and could increase potential for watercraft collisions with the Gulf sturgeon. However, telemetry studies have indicated the Gulf sturgeon congregates around barrier island passes during their migrations to saltwater and are not likely to be found in high-energy littoral zones (NMFS, 2009c). When the tide changes, the water in the vicinity of the proposed project area becomes quite rough; therefore, the Gulf sturgeon is not likely to frequent the proposed project area. The Gulf sturgeon does not appear to be disturbed by the physical presence of, and sounds produced by, vessels and vessel traffic. The sturgeon is a bottom-dwelling fish with a hard, armored body. However, based on the bottom-dwelling nature of the sturgeon, operation of the ferry would unlikely increase the potential for collisions with the Gulf sturgeon.

Gulf sturgeon prey items in the proposed project area are unknown; thus, there is potential to temporarily affect prey abundance in the area during construction because of substrate displacement. Prey items may be buried or destroyed by the placement of the pier pilings; however, prey in the surrounding area would not be affected. There would be abundant alternative foraging resources during construction, and the sturgeon would still be able to forage in the area after construction ends.

With mitigation (Section 7), it is anticipated that the proposed action **may affect, but is not likely to adversely affect,** the Gulf sturgeon or Gulf sturgeon critical habitat.

Essential Fish Habitat

Essential Fish Habitat is present in the waters surrounding GUIS. These waters include Pensacola Bay, the Gulf of Mexico and Santa Rosa Sound. These areas are designated as EFH to minimize adverse effects on habitat caused by fishing and non-fishing activities. The proposed action does not include additional fishing activities; however, there is potential to temporarily affect fish habitat and prey abundance in the proposed action area during construction because of substrate displacement. There would be abundant alternative foraging resources during construction, and fish would still be able to forage in the area after construction ends.

With mitigation measures (Section 7), it is anticipated that the proposed action **may affect, but is not likely to adversely affect**, Essential Fish Habitat.

Santa Rosa Beach Mouse

The Santa Rosa beach mouse inhabits the beach and interior vegetated dunes of Santa Rosa Island. It is not anticipated that construction activities would occur in habitat occupied by the Santa Rosa beach mouse population currently located on the beach near the landward edge of the project area. Existing back dune habitat would not be disturbed by pier construction. After construction, the operation of the ferry would not directly impact the Santa Rosa mouse, but could cause indirect effects with the improvement to existing paths: installation of a hardened surface or low boardwalk, and/or handrails (ADA-compliant). The areas adjacent to the existing pathways could be considered Santa Rosa beach mouse habitat, although the pathways themselves are not. Care must be taken to avoid impacts on habitat

during the construction associated with path improvement. An increase in pedestrian foot traffic created by ferry service may also affect the Santa Rosa beach mouse.

With mitigation (Section 7), the proposed action **may effect, but is not likely to adversely affect,** the Santa Rosa beach mouse.

BIRD SPECIES

The proposed project area does not provide suitable nesting habitat for any of the listed bird species likely to occur in the area. The project area will be assessed for potential piping plover habitat, and if present, mitigation to avoid impacts to the piping plover would be implemented. Birds that may forage in the area may be disturbed by the proposed construction activity, and activity associated with the ferry, but as highly mobile species, foraging birds would likely temporarily shift to other nearby foraging areas in Pensacola Bay and the Gulf of Mexico.

It is anticipated that the project action **may affect, but is not likely to adversely affect,** the listed bird species.

SEAGRASS

Seagrass is present in some areas of GUIS. It is specifically located in Big Lagoon in the Perdido Key area (key located west of Santa Rosa Island) and the area north of Santa Rosa Island (east of the proposed project area). These are the only water bodies within the Pensacola Bay watershed that still contain moderately diverse and expansive seagrass beds. The FDEP (2001) *Seagrass Management Plan for Big Lagoon and Santa Rosa Island* does not reflect the presence of seagrass in the project area. Based on the USGS 2003 mapping and observations in the project area by the GUIS Natural Resource Management Specialist (Hoggard, 2009), there are no seagrass beds in the proposed project area.

It is anticipated that the proposed action **is not likely to adversely affect** seagrasses.

6. TAKE ANALYSIS

No direct take is anticipated due to the results of this assessment.

7. CONSERVATION AND MITIGATION MEASURES

GUIS contains unique or important fish and wildlife habitat and protected species. Although no direct take is anticipated, the following measures will be implemented to reduce or eliminate potential wildlife impacts or other environmental matters of concern associated with the proposed action.

The following measures are proposed for implementation before construction activities and operation of the ferry system to reduce or eliminate potential impacts on protected species from the proposed activity.

MANATEE MITIGATION MEASURES

1. Conduct construction activities in accordance with Standard Manatee Construction Conditions for In-Water Work (FWC, 2005) (Appendix C), which include, but are not limited to the following Best Management Practices (BMP).
    - Use siltation barriers made of material that will not entrap/entangle the manatee, and will not impede manatee movement. Barriers will be properly secured and routinely monitored to ensure manatees are not entangled.
    - Water vessels associated with construction will operate at "no wake/idle" speeds at all times in the construction area, and in water depths where the draft of the vessel provides less than a four-foot clearance from the sediment.
2. Restrict in-water construction activities to the winter months, when manatees are least likely to be in the project vicinity.
3. Keep construction noise low (in air and in water) to the greatest extent possible.
4. Instruct all personnel associated with the construction and operational phases of the project in the potential presence of manatees in the water. Furthermore, advise construction site personnel associated with operating the ferry of the civil and criminal penalties for harming, harassing, or killing species that are protected under the Marine Mammal Protection Act, the ESA, and the Florida Manatee Sanctuary Act.

5. Maintain spill response kits on board during construction.
6. If a manatee comes within 50 feet of the construction area or barrier, activities would cease until the animal has moved on its own volition beyond the 50-foot radius of the project operation. The animals would not be herded away or harassed into leaving.
7. In the event of a collision with a manatee, the on-site construction manager or ferry operations manager would immediately notify NMFS and the FWC.
8. Temporary signs (FWC-approved) concerning manatees would be posted before and during in-water project construction activities. For example, the sign depicted in this

document would be 8.5 inches high by 11 inches wide, on laminated paper or metal (rounded corners with radius 0.75 inch).

9. Permanent signs would be posted on the pier, advising boat operators of the potential presence of manatees, including a posted "no wake" zone at the pier.

SEA TURTLE MITIGATION MEASURES

1. Conduct construction activities in accordance with Sea Turtle and Smalltoothed Sawfish Construction Conditions (NMFS, 2006) (Appendix B), which include, but are not limited to the following Best Management Practices (BMP):
   - Use siltation barriers made of material that will not entrap/entangle a sea turtle, and do not block sea turtle access from designated critical habitat. Barriers will be properly secured and routinely monitored to ensure turtles are not entangled.
   - Water vessels associated with construction will operate at "no wake/idle" speeds at all times in the construction area, and in water depths where the draft of the vessel provides less than a four-foot clearance from the sediment.
2. Restrict construction activities to the winter months when turtles are not likely to be nesting and hatchlings not likely to be leaving the nest.
3. Train and instruct all personnel associated with the construction and operational phases of the project in the potential presence of protected sea turtles. Furthermore, inform the construction site personnel and personnel associated with operating the ferry of the civil and criminal penalties for harming, harassing, or killing species that are protected.
4. No construction vehicle or equipment would directly access the site from land. Access would be from water-based equipment. Supplies for handrails and other structures would be transported to the site using existing paved parking areas.
5. Construction activities would occur during daylight hours only. No nighttime construction activities would be conducted.
6. Ferry operation would be restricted to daylight hours only.
7. If lighting is deemed necessary, install acceptable "turtle friendly" low-pressure, sodium lighting that is directed downwards, as is commonly used on the sea turtle nesting beaches of Florida (approved by FWC and USFWS). It is not anticipated the standard 180° red lens light for marking a pier would impact the sea turtle.
8. Keep construction noise low (in air and in water) to the greatest extent possible.
9. Construct the pier from a floating barge using floating turbidity barriers made of materials that would not allow sea turtles to become entangled. Maintain spill response kits on board during construction.
10. In the unlikely event that a protected sea turtle species approaches the near-shore, littoral area of the proposed project, work would immediately cease until the turtle moves at least 50 feet (radius) away from the project area on its own volition.

ALLIGATOR MITIGATION MEASURES

As stated in Section 5, Effects Analysis, no adverse effects are anticipated for the alligator; therefore, no mitigation for the alligator is necessary.

GULF STURGEON MITIGATION MEASURES

1. Instruct all personnel associated with the construction and operational phases of the project in the potential presence of protected Gulf sturgeon. Furthermore, inform the construction site personnel and personnel associated with operating the ferry of the civil and criminal penalties for harming, harassing, or killing species that are protected.
2. Keep construction noise low (in air and in water) to the greatest extent possible.
3. Construct the pier from a floating barge using floating turbidity barriers made of materials that would not allow gulf sturgeon to become entangled. Barriers would be properly secured and would be monitored regularly so that no animals are entangled or trapped.
4. Care shall be taken in lowering equipment or material below the water surface and into the sediment. These precautions will be taken to ensure no harm occurs to any sturgeon which may have entered the construction area undetected.
5. Maintain spill response kits on board during construction.
6. In the unlikely event that a protected Gulf sturgeon approaches the near-shore, littoral area of the proposed project, work would immediately cease until the sturgeon moves away from the area on its own volition.

ESSENTIAL FISH HABITAT MITIGATION MEASURES

1. Work with NOAA Fisheries prior to construction activities to conserve EFH and reduce the potential impact, if any, of the proposed action.
2. Minimize runoff from construction activities
3. Avoid/minimize dredging activities; these activities can be highly disruptive, disturbing the habitat upon which fish depend.
4. Construction activities would occur during daylight hours only. No nighttime construction activities would be conducted.
5. Construct the pier from a floating barge using floating turbidity barriers.
6. Maintain spill response kits on board during construction.

SANTA ROSA BEACH MOUSE MITIGATION MEASURES

Mitigation for the potential impacts to the Santa Rosa beach mouse would involve avoidance of impacts to the mouse habitat.

1. Native vegetation on the beach and dune would be preserved during construction by primarily accessing the construction site from the water.
2. Native vegetation on the beach and dunes would be preserved after construction by using existing trails, and pier and seawall access ramps and walkways to access the new ferry pier.
3. Construction-related vehicles would access the construction site from the water. Supplies for handrails and other structures would be hand carried from existing paved parking areas.

4. Instruct all personnel associated with the construction phase (of the pier and the existing pathway improvements) of the potential presence of the protected Santa Rosa beach mouse and its habitat (beach and dune vegetation).
5. Post educational signs along the existing pathway informing visitors of the rarity of the Santa Rosa beach mouse, beach mouse habitat, and importance (or enforcement) of not walking in the dune area along the paths to the proposed pier.

If it is determined that the mouse is present on or along the embarkation trails that may be improved to accommodate the ferry passengers, NPS would develop a mitigation plan that addresses USFWS' species protection and recovery plans.

SHOREBIRD MITIGATION MEASURES

Construction will be conducted in accordance with the Florida Fish and Wildlife Conservation Commission's guidelines developed to protect against potential impacts to nesting shorebirds during the periods from February 15th through August 31st, as outlined below:

1. Maintain at least a 300-foot distance from shorebird nesting areas during breeding season, or if birds appear agitated or take flight,
2. Keep out of posted nesting areas.
3. Never intentionally force birds to fly.
4. Avoid running equipment or watercraft close to shore in potential nesting areas.

Personnel associated with the construction and operational phases of the project will be instructed and trained regarding the protection of shorebirds, and personnel will be informed of the civil and criminal penalties for harming, harassing, or killing species that are protected.

SEAGRASS MITIGATION MEASURES

1. Before initiation of the proposed action (pier construction), conduct a benthic resource survey in the vicinity of the project area to confirm the absence (or presence) of seagrass and stage all construction barges and vessel traffic to avoid these resources.
2. If seagrass is found during this survey, develop a seagrass mitigation plan, which may include replanting or additional planting of seagrass in nearby known beds of seagrass.
3. Ferry operation will utilize existing, maintained channels as much as possible.
4. If ferry operation traverses in or near seagrass resources, an environmental protection plan for ferry operation will be developed, which may include establishing a no wake zone over sea grass beds and trimming the motor in water less than 10 feet deep.

MISCELLANEOUS MITIGATION MEASURES

Conduct all construction vehicle washing and maintenance off-site.

8. DETERMINATION OF EFFECT

The implementation of the Endangered Species Act often requires an evaluation of the effects of human activity on listed species and their habitats. The potential for hindering the attainment of a properly functioning environment for protected species is an example of one of questions posed by the dichotomous key for making a determination of effect. Potential impediments to a properly functioning environment may include physical barriers, and impacts to water quality, species disturbance, and habitat, for example. The following questions were reviewed and addressed as part of the decision-making process to make the determination of effect:

Are there any proposed/listed species and/or proposed or designated critical habitat in the project area or downstream from the project area?

Answer: Yes.

Does the proposed action have the potential to hinder attainment of relevant properly functioning indicators?

Answer: No.

Does the proposed action have the potential to result in "take" of proposed/listed species or destruction/adverse modification of proposed/designated critical habitat?

Answer: Yes, but not likely with mitigation (Section 7).

The information available for the project has been analyzed, and it has been concluded that the proposed action would have a negligible probability of take of listed species, which is summarized in Table 2. The rationale for each of these determinations is discussed in detail in Section 5.

Table 2 Listed Species/Critical Habitat and Determination of Effect

Listed Species/Critical Habitat	Determination of Effect
Florida manatee	Not likely to adversely effect
Atlantic green turtle	Not likely to adversely effect
Atlantic loggerhead sea turtle	Not likely to adversely effect
Kemp's Ridley sea turtle	Not likely to adversely effect
Leatherback sea turtle	Not likely to adversely effect
Hawksbill turtle	Not likely to adversely effect
American alligator	No effect
Gulf sturgeon	Not likely to adversely effect
Gulf sturgeon critical habitat	Not likely to adversely effect
Essential Fish Habitat	Not likely to adversely effect
Santa Rosa beach mouse	Not likely to adversely effect
Shorebirds	Not likely to adversely effect
Seagrass and seagrass habitat	Not likely to adversely effect

9. REFERENCES

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APPENDIX A

AGENCY CORRESPONDENCE

McMorrow, Shannon

From: Patricia_Kelly@fws.gov
Sent: Friday, December 04, 2009 3:37 PM
To: Ryan, Joy
Subject: Re: map with possible location areas
Attachments: pic12053.gif

Hi Joy
Only the Santa Rosa beach mouse needs consideration in the areas you have marked. A survey in 2007 located 25 in the Ft Pickens area. This species
is not Federally protected but is considered a federal "species at risk", so consideration to minimize impacts are encouraged. This will only be
an issue if vegetation removal is necessary and how far inland clearing in needed. If the site is mostly vegetation free, not an issue.

The only other species we think you need to consider are Manatees (guidelines sent earlier to avoid going formal) and Gulf sturgeon (critical habitat and
species impacts) that you will need to address with NOAA (contact given to you yesterday- Stephania Bolden).

Overall, we see this as a positive step forward if it lightens the road traffic especially during shorebird nesting season. Patty.

Patty Kelly
US Fish and Wildlife Service
1601 Balboa Avenue
Panama City, FL 32405

e-mail: patricia_kelly@fws.gov
Ph: 850/769-0552 x228
fax: 850/763-2177

"Ryan, Joy" <JMRYAN@mactec.com>

"Ryan, Joy"
<JMRYAN@mactec.com>

12/04/2009 01:07 PM

To<Patricia_Kelly@fws.gov>

cc

Subjectmap with possible location areas

Patty,
Attached is a map/figure of the Ft. Pickens area.
I circled two fairly broad areas on the intracoastal side of the island under consideration for dock location.
Alternative actions are still being determined, so nothing is definite at this point.

Sometime soon, the USFWS will receive a notification of the action, but for now, I am just trying to gather information to write the Biological Assessment.

Please look at the attached map and let me know about the possible, probable, and actual T&E species in these areas (terrestrial and marine), and if any of the species are of particular concern by USFWS.

I don't want to increase your workload, but if you have any reports on the island, the state park or national park, T&E species in the area, etc. that might be helpful for writing the BA, I would appreciate an electronic copy.

Thank you so much.

Joy Ryan
MACTEC Engineering and Consulting, Inc.
Office, Direct Line 352-333-1629
Email jmryan@mactec.com
Please consider the environment before printing this e-mail.

From: Patricia_Kelly@fws.gov [mailto:Patricia_Kelly@fws.gov]
Sent: Thursday, December 03, 2009 12:19 PM
To: Ryan, Joy
Subject: BE format

Hi Joy
I have attached guidance and outline on constructing a BA/BE. Please let me know you have received this so I know I wrote the email address correctly. If you have questions, please call. Patty.
(See attached file: BA guidelines.PDF)

Patty Kelly
US Fish and Wildlife Service
1601 Balboa Avenue
Panama City, FL 32405

e-mail: patricia_kelly@fws.gov
Ph: 850/769-0552 x228
fax: 850/763-2177[attachment "Ft. Pickens-possible dock locations-hand sketch.pdf" deleted by Patricia Kelly/R4/FWS/DOI]

From: Bourdeau, Jonathan
Sent: Tuesday, January 05, 2010 7:05 AM
To: Shortelle, Ann; Ryan, Joy; McMorrow, Shannon
Cc: Jenkins, Josh
Subject: FW: Follow-up Contact w/ FLFWC Re. State Listed Species Letter of Inquiry

-----Original Message-----
From: Rick_Clark@nps.gov [mailto:Rick_Clark@nps.gov]
Sent: Monday, January 04, 2010 4:55 PM
To: Riley_Hoggard@nps.gov; Bourdeau, Jonathan; Jenkins, Josh
Cc: Nina_Kelson@nps.gov; Mark_Nicholas@nps.gov
Subject: Follow-up Contact w/ FLFWC Re. State Listed Species Letter of Inquiry

All: F.Y.I.

I responded to below inquiry today (1/4). FLFWC to provide a GIS shape file map showing distribution of listed (State) species known to occur in the area. EA and formal request for concurrence determination re. State (FL) coastal zone consistency will then need to be routed as part of the interagency review and comment period to the FL State clearinghouse for final review and comment. By procedure/protocol the State requires up to a 90-day review period before rendering a determination.

Point of contact at the FLFWC who will be providing the information referenced above is Jan Stearns, who can be reached by calling 850-488-0588.

Rick

Rick Clark
Chief of Science & Resources Management
Gulf Islands National Seashore
1801 Gulf Breeze Parkway
Gulf Breeze, FL 32561
Voice: 850-916-3011
FAX: 850-932-9654
email: rick_clark@nps.gov

"Poole, MaryAnn" <MaryAnn.Poole@MyFWC.com>
12/23/2009 02:55 PM

To "Rick_Clark@nps.gov" <Rick_Clark@nps.gov>, "Riley_Hoggard@nps.gov" <Riley_Hoggard@nps.gov>

cc "Mark_Nicholas@nps.gov" <Mark_Nicholas@nps.gov>, "Nina_Kelson@nps.gov" <Nina_Kelson@nps.gov>, "Chabre, Jane" <jane.chabre@MyFWC.com>

Subject RE: EA/Ft. Pickens Pier

Rick and Riley -

There are a couple of ways we could provide you with input; both have their strengths and
weaknesses, so I wanted to get up with you to find out which option would suit your needs the
best.

I look forward to hearing from you after the New Year.

-----Original Message-----
From: Nina_Kelson@nps.gov [mailto:Nina_Kelson@nps.gov]
Sent: Wednesday, December 23, 2009 11:56 AM
To: Rick_Clark@nps.gov; Riley_Hoggard@nps.gov
Cc: Poole, MaryAnn; Mark_Nicholas@nps.gov
Subject: EA/Ft. Pickens Pier

Rick/Riley: I had a call today from Ms. Mary Ann Poole with FFWCS. The
12/17 letter regarding the EA for the pier that we sent to Billie Clayton was forwarded to her. She
had some questions about the approach she may use to respond and I told her that one of you
would contact her when you return. Her phone number is 850-488-8783.

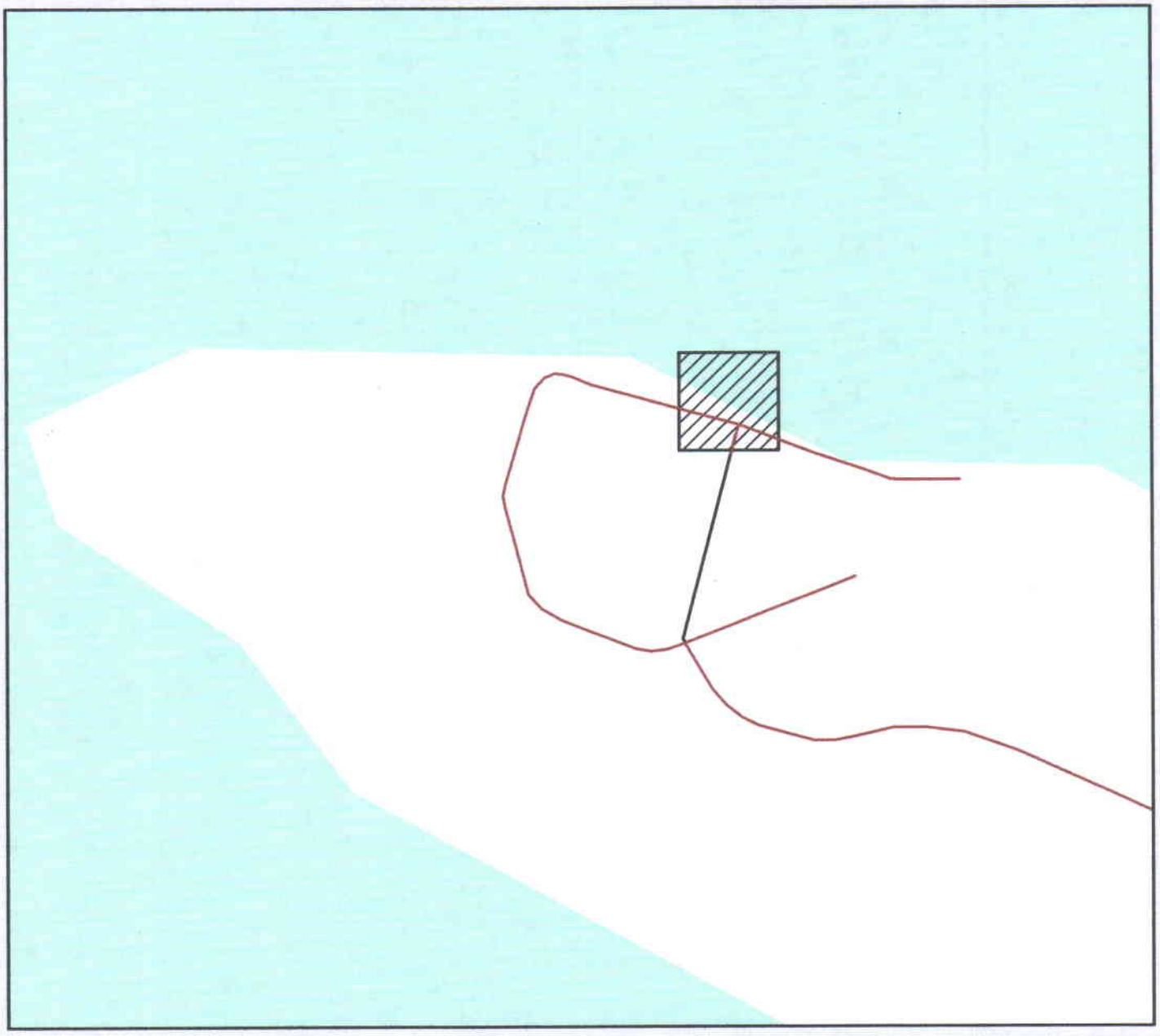
Thanks,

Nina

Nina Kelson
Deputy Superintendent
Voice: 850-934-2606
FAX: 850-916-3026

Gulf Sturgeon Critical Habitat

Fort Pickens Passenger Ferry Pier and Shelter



Gulf Sturgeon Critical Habitat
County Boundary
Project Site

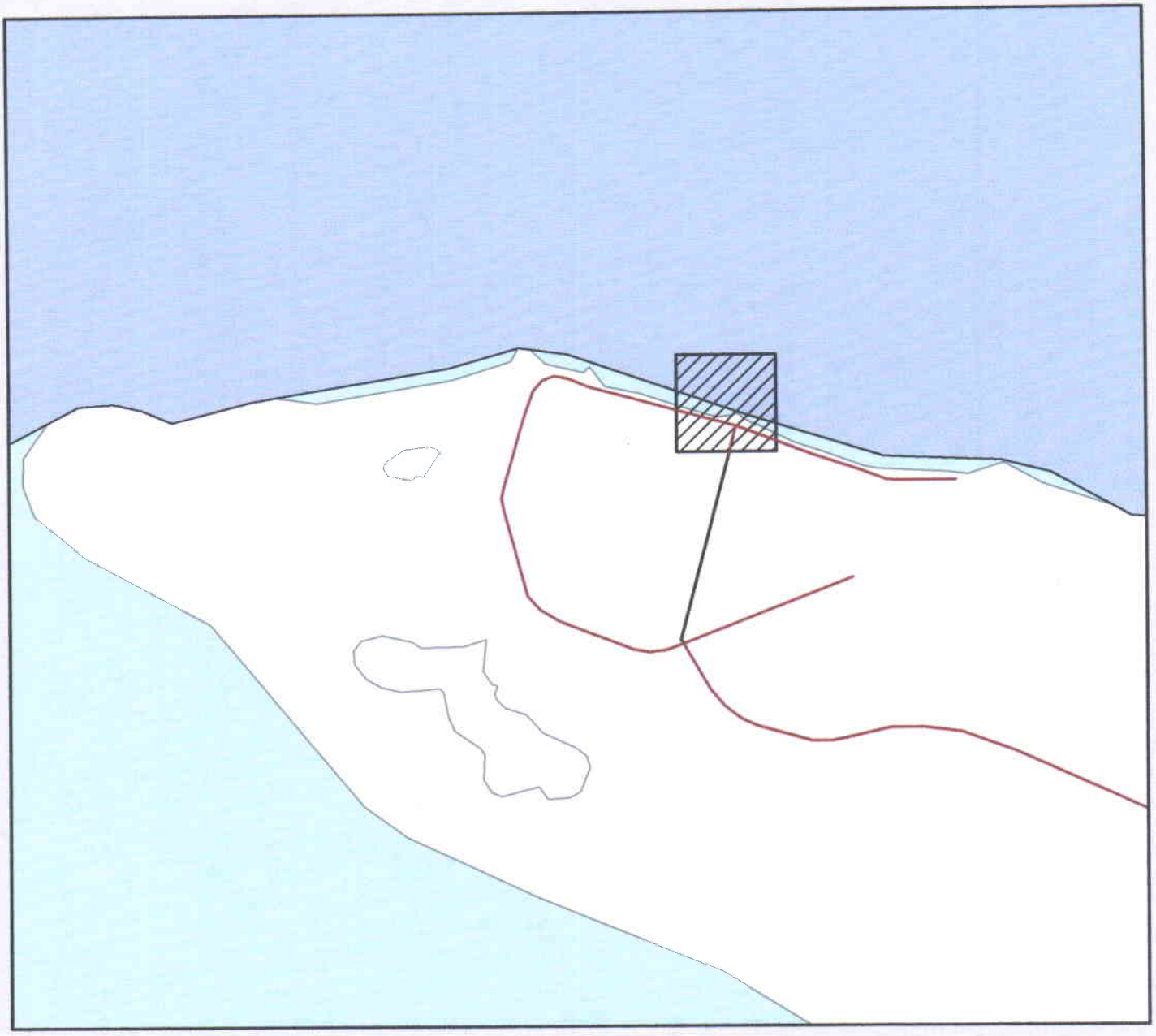
Miles
0 0.1 0.2 0.3

N

2010_5434

Imperiled Fish Habitat

Fort Pickens Passenger Ferry Pier and Shelter



Imperiled Fish Habitat
Project Site
County Boundary

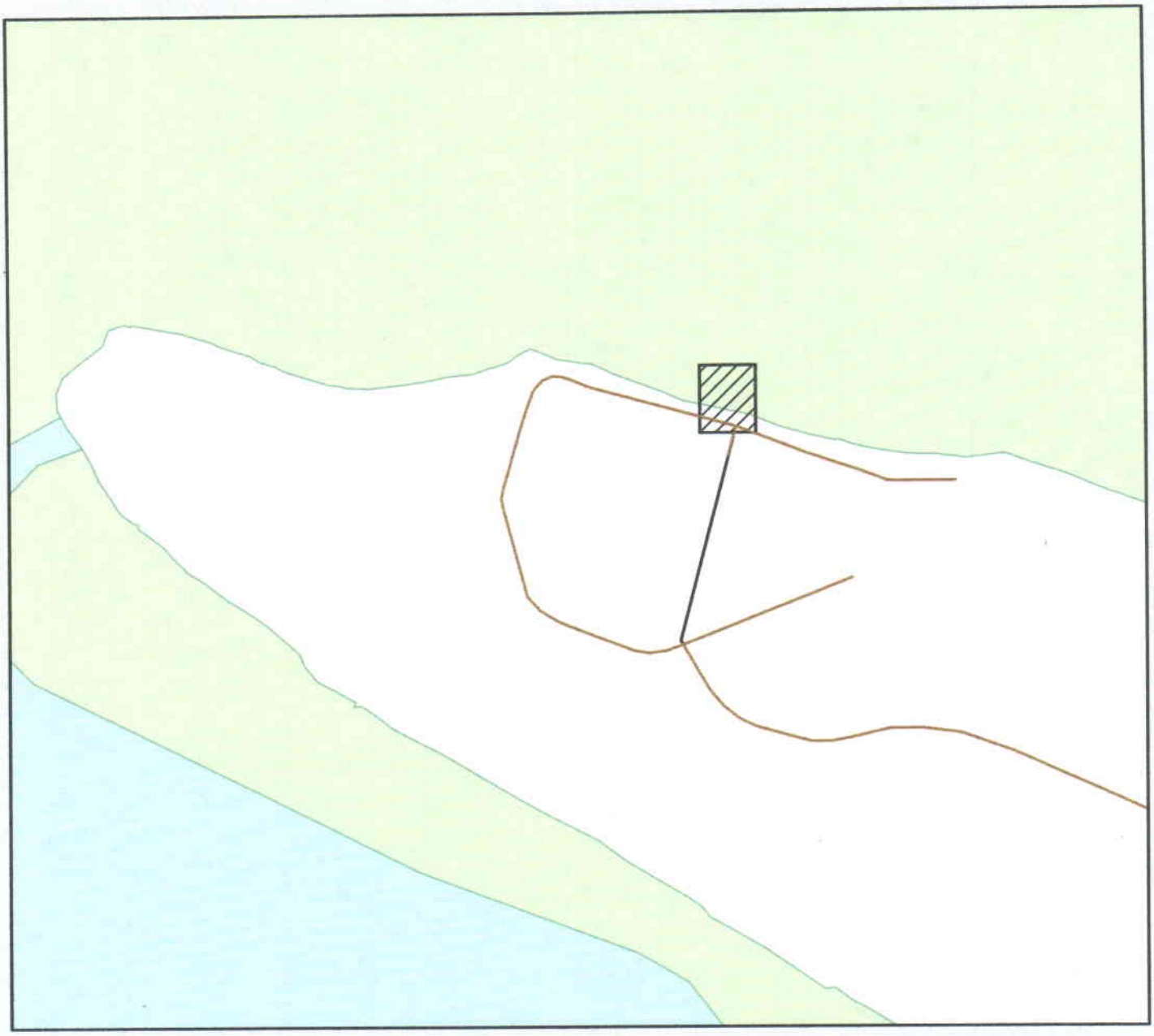
Miles
0 0.1 0.2 0.3

N

2010_5434

Ecosystem Management Areas

Fort Pickens Passenger Ferry Pier and Shelter



Ecosystem Management Areas
County Boundary
Project Site

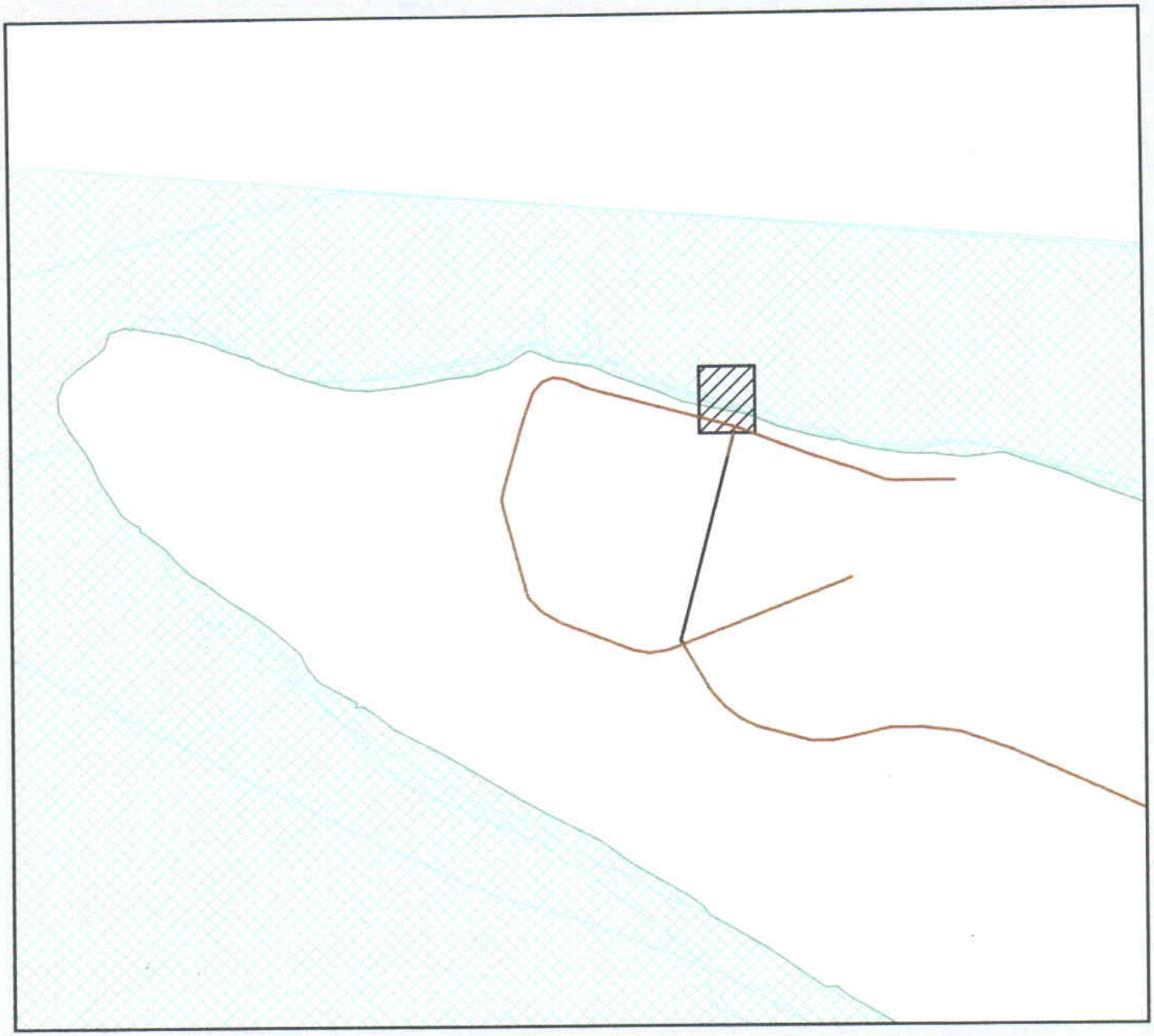
Miles
0 0.1 0.2 0.3

K

2010_5434

Marine Protected Areas

Fort Pickens Passenger Ferry Pier and Shelter



Marine Protectred Areas
County Boundary
Project Site

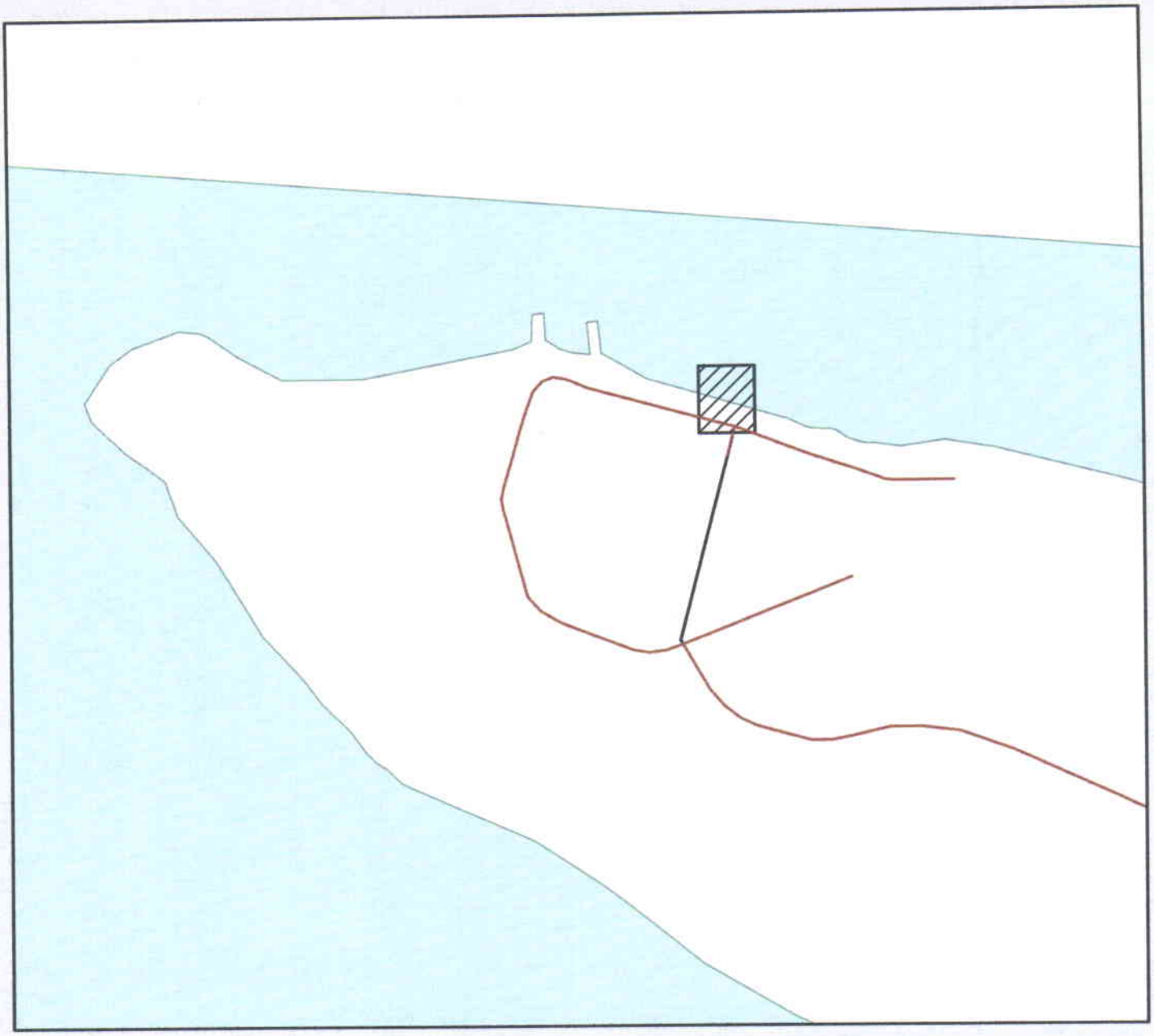
Miles
0 0.1 0.2 0.3

K

2010_5434

Aquatic Preserves

Fort Pickens Passenger Ferry Pier and Shelter



Aquatic Preserves
Project Site
County Boundary

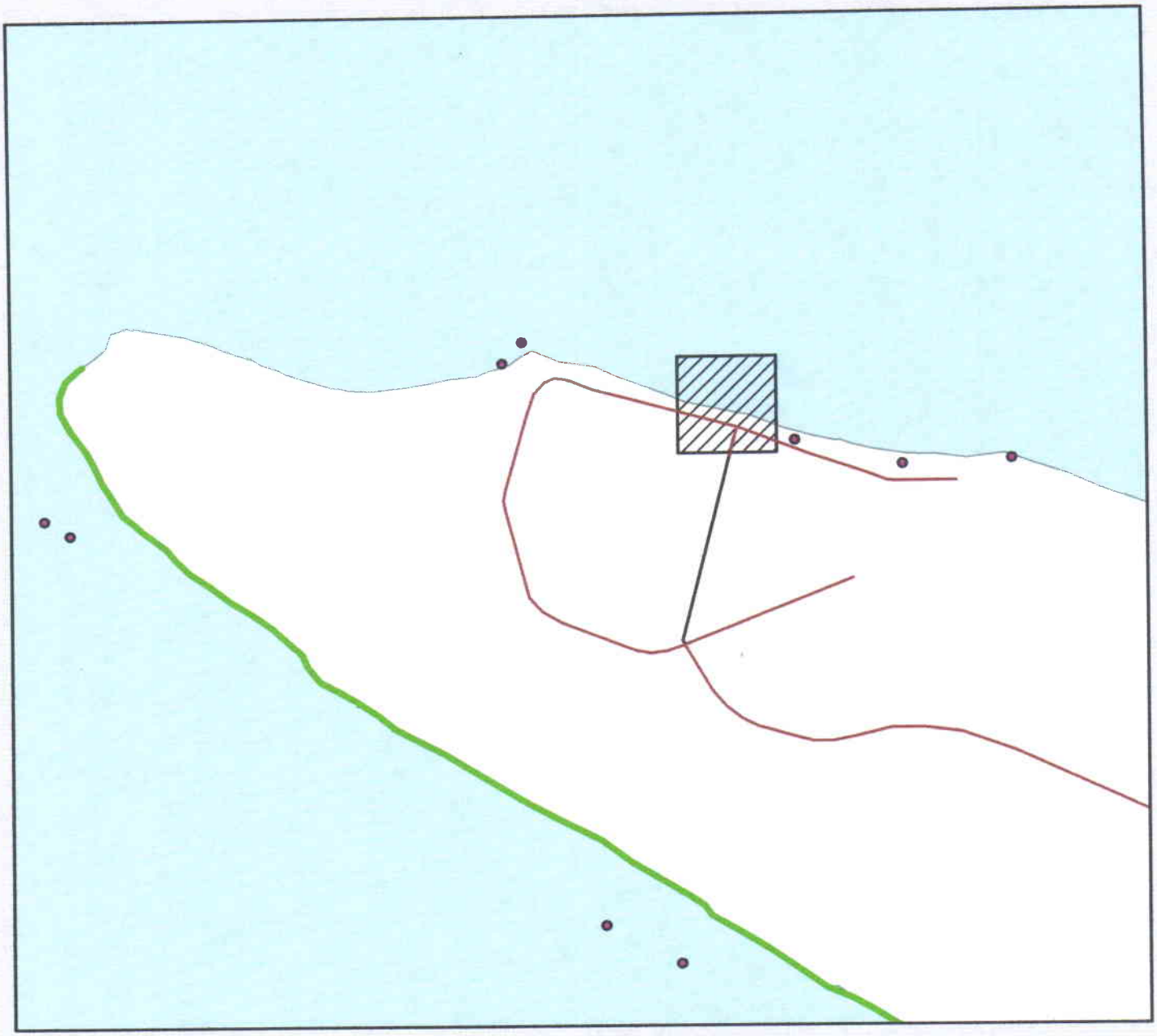
Miles
0 0.1 0.2 0.3

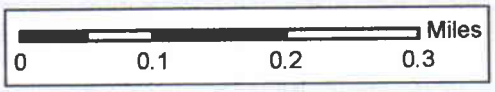
K

2010_5434

Sea Turtles Nests and Strandings

Fort Pickens Passenger Ferry Pier and Shelter





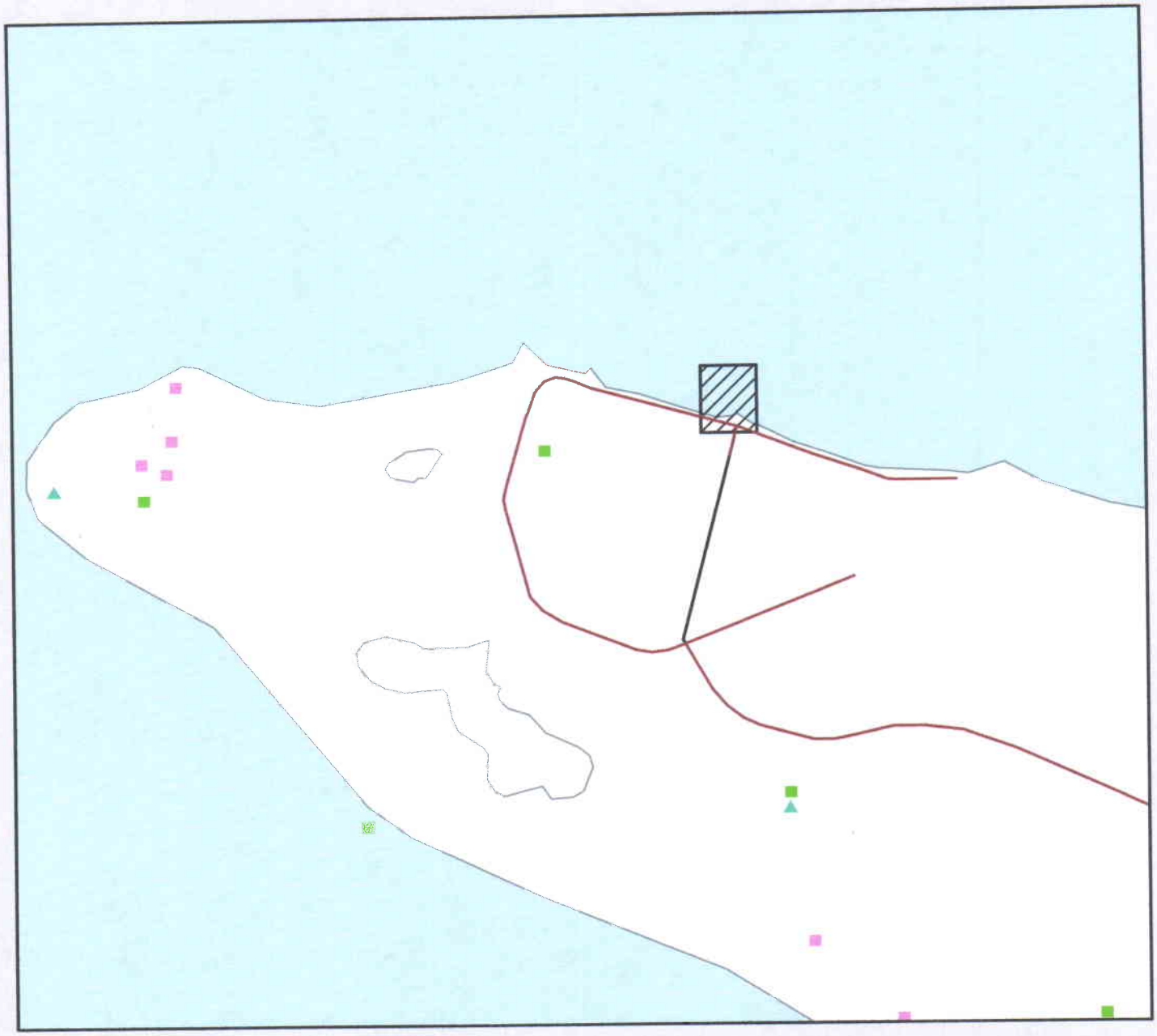
FMRI.counties24k_shore12k_poly

Project Site

2010_5434

Species Occurrence

Fort Pickens Passenger Ferry Pier and Shelter



Shore Birds Nests 2002
Snowy Plover Nests 2002-2006
Florida Natural Inventory Areas
Project Site
County Boundary

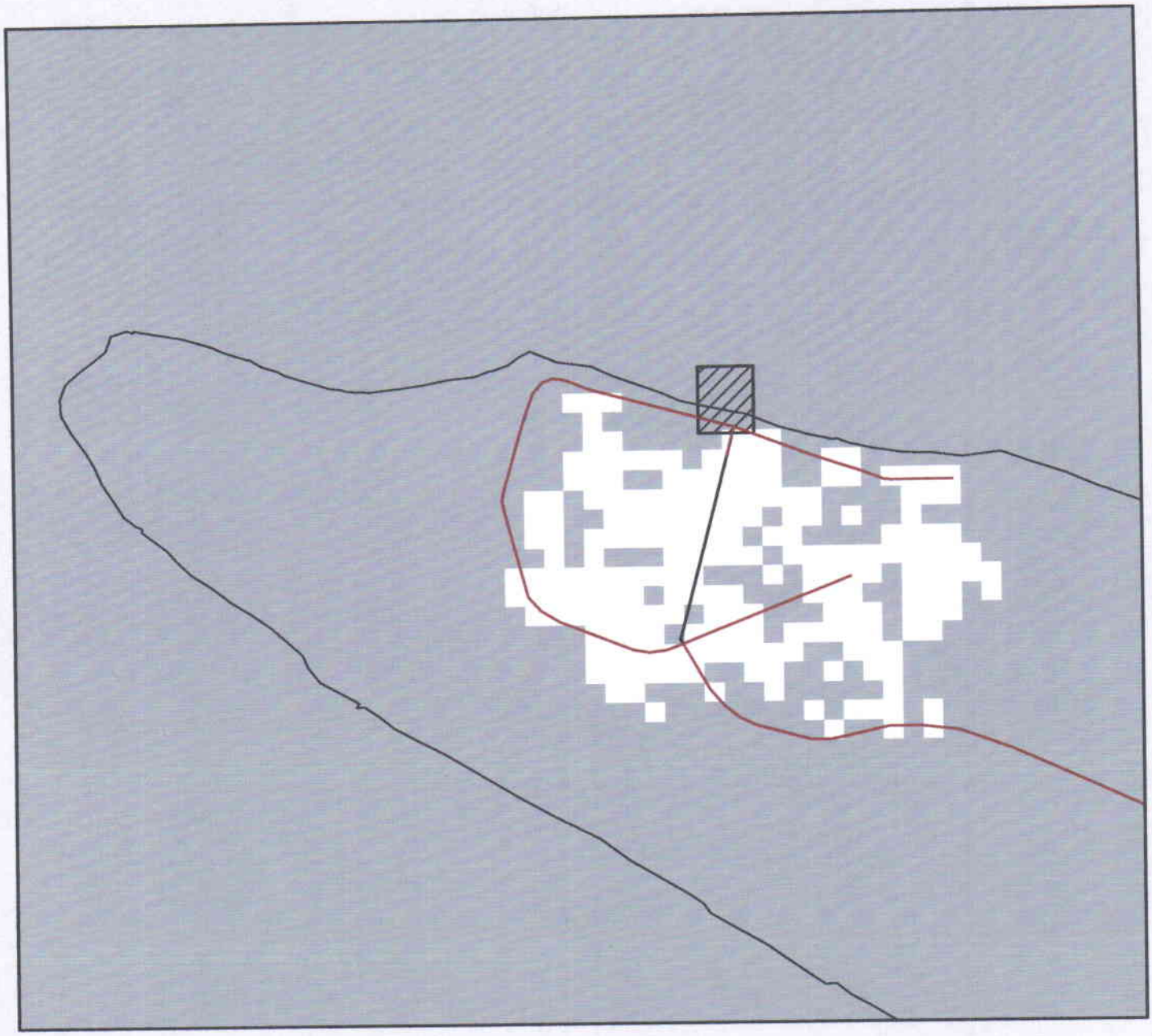
Miles
0 0.1 0.2 0.3

N

2010_5434

Species Richness

Fort Pickens Passenger Ferry Pier and Shelter



Species Richness
- 1 - 3
- 4 - 6
- 7 - 9
- 10 - 13

County Boundary
Project Site

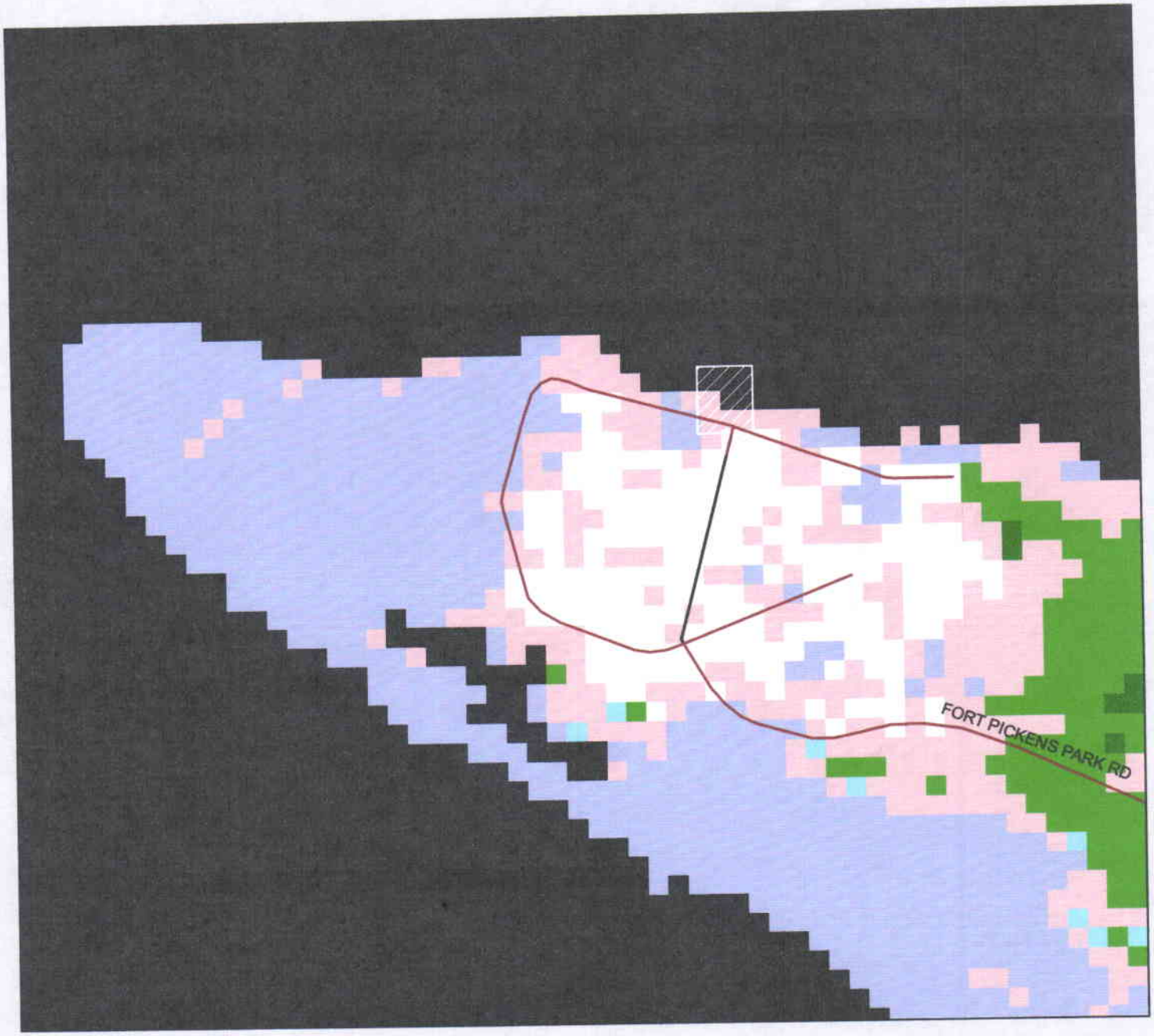
Miles
0 0.1 0.2 0.3

K

2010_5434

Florida Land Cover - 2003

Fort Pickens Passenger Ferry Pier and Shelter



Project Site

Coastal Strand
Sand/Beach
Xeric Oak Scrub
Sand Pine Scrub
Sandhill
Dry Prairie
Mixed Pine-Hardwood Forest
Hardwood Hammocks and Forest
Pinelands
Cabbage Palm-Live Oak Hammock
Tropical Hardwood Hammock
Freshwater Marsh and Wet Prairie
Sawgrass Marsh

Major Roads

Cattail Marsh
Shrub Swamp
Bay Swamp
Cypress Swamp
Cypress/Pine/Cabbage Palm
Mixed Wetland Forest
Hardwood Swamp
Hydric Hammock
Bottomland Hardwood Forest
Salt Marsh
Mangrove Swamp
Scrub Mangrove

County Boundary

Tidal Flat
Open Water
Shrub and Brushland
Grassland
Bare Soil/Clearcut
Improved Pasture
Unimproved Pasture
Other Agriculture
Citrus
Exotic Plants
High and Low Impact Urban
Extractive

Miles
0 0.08 0.16

K

2010-5434

Bourdeau, Jonathan

From: Rick_Clark@nps.gov
Sent: Tuesday, April 13, 2010 4:27 PM
To: Noah Silverman
Cc: Ryan, Joy; Jenkins, Josh; Bourdeau, Jonathan; Riley_Hoggard@nps.gov; Nina_Kelson@nps.gov; Mark_Nicholas@nps.gov
Subject: Coordination - NOAA, NMFS Sec. 7 T&E Review Re. Fort Pickens Passenger Ferry Pier
Attachments: Figure 10_Craft et al.pdf

Noah,

Thank you for the opportunity to discuss in more detail the environmental assessment and associated biological assessment related to the proposed ferry pier within the Fort Pickens area of Gulf Islands National Seashore.
As I shared with you, MACTEC Engineering and Consulting is working under contract for the agency and operating as our agent in completing the above referenced documents. The Park will continue to coordinate closely with MACTEC to provide you with a comprehensive and consolidated response to the information outlined in your attached message. In the interim, biologists and other natural resources professionals from MACTEC may have reason to contact you to coordinate further for additional clarification prior to our compiling and submitting the additional information requested. As such, rest assured MACTEC has our full support in making these contacts on the Park's behalf.

We expect to soon be back in contact with you to coordinate further re.
this matter.

Thanks,

Rick

Rick Clark
Chief of Science & Resources Management
Gulf Islands National Seashore
1801 Gulf Breeze Parkway
Gulf Breeze, FL 32561
Voice: 850-916-3011
FAX: 850-932-9654
email: rick_clark@nps.gov

Noah Silverman
<Noah.Silverman@n
oaa.gov>
04/13/2010 02:19
PM

To
rick_clark@nps.gov
cc
"Ryan, Joy" <JMRYAN@mactec.com>
Subject
Fort Pickens Passenger Ferry Pier

Hello Rick,

Thanks for talking with me yesterday about your project. Please find attached a Figure from a 2001 study which used various bio-telemetry techniques to track and identify the movement and congregation areas for the Pensacola Bay population of Gulf Sturgeon. Figure 10 indicates that a major Gulf sturgeon overwintering/congregation area is directly adjacent to your proposed project area.

In order to better determine the potential routes of effect from the proposed project I will need to know the following information:

1. How do you intend to construct the fishing pier (i.e. will pilings be pounded or jet blasted in-place, will barges and cranes be used, where will the construction staging areas be located, etc.)?
2. What is the maximum amount of time necessary to construction the in-water portion of the project?
3. Can the in-water portions of the pier be constructed during the summer months (May 1 - September 30)?
4. Will the NPS comply with NMFS Seaturtle and Smalltooth Sawfish Construction Conditions dated March 2006?
5. Will the use of appropriate turbidity barriers be required?
6. Provide a detailed map and any relevant data indicating sea turtle nesting locations?
7. Provide a detailed discussion of sea turtle nest monitoring and restoration efforts undertaken by NPS?
8. Will any construction activities take place after dusk or before dawn during summer months? If so, will there be lighting of any type associated with the construction activities?

I realize that the NPS is in the initial stages of developing their Environmental Assessment and may not have all of the requested information.
It may be necessary to delay section 7 consultation for the proposed project until preferred alternatives have been identified and construction details have been developed. I am available to assist the NPS in evaluating different project and construction alternatives in order to help avoid and minimize any adverse effects to listed species.

Thank you,
Noah

P.S. I tried to send a copy of the entire study but the file size was to large for your e-mail.

Noah Silverman
Natural Resource Specialist
National Marine Fisheries Service
263 13th Avenue South
St. Petersburg, FL 33701
Main: (727) 824-5312
Direct: (727) 824-5353
Fax: (727) 824-5309
e-mail: noah.silverman@noaa.gov (See attached file: Figure 10_Craft et al.pdf)

MACTEC

engineering and constructing a better tomorrow

July 9, 2010

Mr. Noah Silverman
National Oceanic and Atmospheric Administration
NOAA Fisheries Service
Southeast Regional Office
263 13th Avenue South
Saint Petersburg, Florida 33701

Re: Biological Assessment, Ft. Pickens Proposed Ferry Service and Ferry Pier Supplementary Information Request

Dear Mr. Silverman:

This letter has been prepared by MACTEC Engineering and Consulting, Inc. (MACTEC) on behalf of the National Park Service (NPS), Gulf Islands National Seashore (GUIS – the Park) in response to a request (April 21, 2010) from NOAA to provide supplementary information to the Biological Assessment report (post-review by NOAA).

Thank you for your comments and your April 13, 2010, email message regarding the Biological Assessment (BA) for the proposed Fort Pickens ferry and ferry pier. Mr. Rick Clark, Chief of Science and Resources Management at GUIS, subsequently discussed with you in more detail the Environmental Assessment (EA) and associated BA related to the proposed ferry pier within the Fort Pickens area of GUIS. As a result of this discussion, the Park understands the Gulf sturgeon (GS) and the sturgeon's migration route to upriver locations are of primary concern to NOAA.

MACTEC is working under contract for NPS and is operating as the GUIS agent in completing the BA and EA. Attachment I is the supplementary information to the Ft. Pickens Proposed Ferry Service and Ferry Pier BA. The attachment represents the synopsis of your April 21, 2010 conversation with MACTEC scientist, Joy Ryan and the Park's response to the information outlined in your April 13, 2010 email message to Rick Clark at GUIS.

The provided information should address your concerns regarding the proposed project. If you have additional questions or concerns, please contact Josh Jenkins at (770) 421-3412 or Ann Shortelle, Ph.D., at (352) 333-2623.

Sincerely,

MACTEC ENGINEERING AND CONSULTING, INC.

For Ann B. Shortelle
with permission

Nancy R. Bales

Josh Jenkins
Project Manager

Ann B. Shortelle, PhD
Project Principal

cc: Mr. Rick Clark, GUIS

Attachment

Attachment I- Supplementary Information

Response to NOAA Comments on Biological Assessment- Ft. Pickens Proposed Ferry Service and Ferry Pier, Gulf Islands National Seashore

The responses are organized in the same order as NOAA email comments, with NOAA comments/questions in bold and NPS response in normal font.

1. **How do you intend to construct the fishing pier (i.e. will pilings be pounded or jet blasted in-place, will barges and cranes be used, where will the construction staging areas be located, etc.?**

   Complete details regarding construction are not known at this time. The Park anticipates the proposed pier will be approximately the same length as the existing fishing pier (approximately 260 feet long). It is the Park's understanding, based on your conversation with Ms. Ryan, that if the construction can take place during the timeframe May 1 through September 30, NOAA would not be concerned with construction methods. However, if construction cannot occur during that time period, construction methods must be evaluated to determine the best approach to avoid impacts to the GS. MACTEC's communications with Patricia Kelly (USFWS, Panama City office), indicate that USFWS had no issue with construction occurring during the May 1 through September 30 timeframe. Additionally, no permanent impacts/alterations to the substrate in the area of the new pier, with the exception of the pilings, are anticipated. Although shading from the pier decking would occur after construction, there is no seagrass in this area, so no impact is anticipated from shading.

2. **What is the maximum amount of time necessary to construction the in-water portion of the project?**

   A rough estimate of in-water construction is 3 to 4 months. Completion of the pier is estimated to take approximately 1 year. As stated in item 1 above, firm construction plans are not available at this time, so these time periods are only estimates.

3. **Can the in-water portions of the pier be constructed during the summer months (May 1 – September 30)?**

   Yes, based on the estimated in-water construction period (item 2 above).

4. **Will the NPS comply with the NMFS Sea turtle and Smalltooth Sawfish Construction Conditions dated March 2006?**

   Yes, this is discussed in the BA; page 7-2, *Sea Turtle Mitigation Measures*, item 1.

5. **Will the use of appropriate turbidity barriers be required?**

   Yes, this is discussed in the BA; page 7-1, *Manatee Mitigation Measures*, item 1; and page 7-2, *Sea Turtle Mitigation Measures*, item 1; page 7-3, *Gulf Sturgeon Mitigation Measures*, item 3.

6. **Provide a detailed map and any relevant data indicating sea turtle nesting locations?**

See revised Figure 3-3, at the end of this document. This figure represents recent (2008 and 2009) turtle nest locations in the vicinity of the Ft. Pickens project area. These data show that there were no turtle nests in recent history in the project area.

7. **Provide a detailed discussion of sea turtle nest monitoring and restoration efforts undertaken by NPS?**

Current monitoring of the sea turtle at the Park began in 1994 (daily surveys during the nesting and hatching season) and has grown over the years. The purpose of the daily survey patrols is to identify all nest events, monitor the incubation period and ensure that the hatchlings safely reach the Gulf of Mexico (GOM). The majority of turtle species that nest within GUIS are loggerheads (*Caretta caretta*), but greens (*Chelonia mydas*), Kemp's Ridleys (*Lepidochelys kempii*) and leatherbacks (*Dermochelys coriacea*) have also nested inside park boundaries. There are three separate beaches used by marine turtles for nesting: Santa Rosa, Fort Pickens and Perdido Key. The revised Figure 3-3 (attached) reflects historic (1986 – 2005) and recent (2008 – 2009) sea turtle nesting and strandings. Please note there are no nesting sites (historic or recent) on the Bay side of the Santa Rosa Island, and few turtle strandings (prior to 2005) within the project area. The closest sea turtle nest is located on the Gulf side of the island, approximately 1.5 miles southeast of the project area.

Methodology for Monitoring Sea Turtles

The information provided in the methodology section of this letter is from the Park's 2006-2007 *Sea Turtle Nesting Report*. NPS biological staff members and volunteers (under the direction of NPS staff) work together to monitor for sea turtle nests, and watch nests during hatch time to help prevent depredation and disorientation of the hatchlings. NPS biological science technicians work with complete commitment to sea turtle preservation at all hours of the day and night.

Morning turtle patrol activity is typically conducted from May 15 to mid-September between the hours 0530 to 0800. The patrol surveys are conducted by All Terrain Vehicles (ATVs) and the surveyor makes two complete circuits of the beach, one above the high tide line and one below the high tide line. This method ensures that even the shortest of false crawls will not be missed. Turtle observers document all turtle events on a turtle data sheet, including false crawls. The data sheet contains a checklist to ensure all the appropriate information is recorded. Location of the observations/incidents is recorded using beach half-mile markers or other known locations (i.e. Fort Pickens Lifesaving Station) as reference points.

Where a nest is observed, a sign is posted and two reference stakes are placed behind the nest. NPS has developed a sequential nest numbering system which includes the date observed. Each nest is monitored daily by the turtle patrol to detect any disturbance by high waters, humans, or predators. Where interference by predators such as raccoons, coyote, fox, or armadillo, is observed, the Park biologists are notified and predator screens are placed just below the surface of the sand to prevent further disturbance of the egg chamber. Nest sites are examined by Park Resource Management (RM) staff and egg cavities are located to ensure accurate marking of the nest. Eggs are then covered with sand, and nest locations are marked with a GPS unit. During morning patrols, volunteers or staff members listen to the nest for signs of hatching. Additional monitoring is conducted by park staff in the afternoon; and, when hatching is thought to be imminent, nightly checks of the nest are conducted.

In the interest of successful hatch rates, nests are sometime moved (with extreme care) by Park biologists, for example, if the nest is below the high tide line. This will generally prevent low hatch success rates or complete loss of the eggs. When hatchlings experience disorientation, the direction and severity of the disorientation is documented, and the disoriented hatchlings are aided in reaching the GOM. Disorientation events are reported to the state.

Seventy-two hours after the initial hatching event, nests are assessed by Park biologists. The assessments occur just after sundown so that any turtles found alive in the nest can be released immediately into the GOM. The nest is excavated and the hatchlings (live or dead) in the nest are noted.

NPS collects annual data regarding the sea turtle for several data points:

- Mean incubation days
- First nest dates and last nest dates
- Nest relocation data
- Number of hatchlings entering gulf
- Disorientation levels
- Number of marine turtle nests

In reference to a question about turtles hatched on the Gulf side of Santa Rosa Island that have turned away from the Gulf and walked across the island toward the Bay; yes, there have been hatchlings that go north (across the island) rather than south, due to disorientation from light pollution. There have also been instances of adult turtles becoming confused from light pollution after nesting; turtles have crossed the Fort Pickens Road and then gone into the bay, or wandered on the island until morning when NPS located them and guided or pulled them on tarp back to the Gulf. These incidents typically occur east of the Lifesaving Station, which is located four miles from the eastern boundary at the Fort Pickens unit. In the area east of the Lifesaving Station, the island is very narrow and lights from the north are readily seen. However, west of the Lifesaving Station, the island becomes wider, there are forests, and thus less light can be seen directly from the beach. Therefore, it is not anticipated that adult sea turtles or hatchlings will become disoriented on the western (project) side of Santa Rosa Island.

As stated in the BA, the Park believes potential effects on sea turtle nesting is likely insignificant, since the sea turtle species have not nested on the Bay side of the island since nesting was first documented (1986), and construction will be conducted in accordance with the NMFS Sea Turtle and Smalltooth Sawfish Construction Conditions dated March 2006. Additionally, there will be no vessel or construction traffic on the Gulf side of Santa Rosa Island during construction.

8. **Will any construction activities take place after dusk or before dawn during summer months? If so, will there be lighting of any type associated with the construction activities?**

No construction activities will take place after dusk or before dawn. This is discussed in the BA; page 7-2, *Sea Turtle Mitigation Measures*, Items 5, 6, and 7.

The following paragraphs discuss other items of concern mentioned by you during your phone conversation with Ms Ryan on April 21, 2010, and in your April 9, 2010 email message to Rick Clark, Chief of Science and Resources Management at GUIS

Ferry and boating operations

The following statements address NOAA's concerns on ferry and boating operations. Although the Park may utilize the proposed ferry pier at times, the majority of Park boat dockings will continue to be at the Lifesaving Station dock. Park service boats generally approach the Lifesaving Station dock at idle speed with no wake, and would do the same when approaching the ferry pier. No fishing would be allowed from the proposed new ferry pier.

Prior to initiating operation of the ferry, the Park will address potential environmental issues associated with ferry operation. One of these issues is ferry speed. The ferry will be operated at an appropriate speed to minimize impacts with bay resources, and will approach the ferry pier at idle speed, no wake.

Smalltooth Sawfish

The following discussion of the smalltooth sawfish is in response to the email request regarding consideration of the smalltooth sawfish (email message from Noah Silverman (NMFS of NOAA) to Rick Clark (NPS), April 9, 2010).

The smalltooth sawfish, *Pristis pectinata*, is federally listed as an endangered species. Formerly common from Texas to North Carolina its current distribution is mainly restricted to south Florida and the Keys; adults are uncommon in the Florida panhandle (NOAA, 2009a). Female smalltooth sawfish bear live young, probably every 2 years beginning at 10 – 20 years of age. Individuals may live up to 60 years (NOAA, 2009a). Juveniles inhabit shall coastal waters, especially shallow mud banks and mangrove habitats. Very few juveniles have been documented in areas north of the current range of mangroves (i.e. north of 29° N latitude).

Adults are found with juveniles but also in deeper water habitat (NOAA, 2009a). The smalltooth sawfish feeds on fish and some crustaceans. The decline of this species is mainly attributed to mortality as bycatch in commercial and sport fisheries. Critical habitat for the smalltooth sawfish lies between Charlotte Harbor and the Florida Everglades, outside and south of this project site (NOAA, 2009b), therefore critical habitat will not be evaluated further.

Effects Analysis

The smalltooth sawfish, a highly mobile species, would very likely avoid the project site during construction activities because of construction noise and the physical presence of machinery. Water quality may be affected by pier construction through a temporary increase in turbidity. The modification of $\leq$ 5,200 square feet of non-vegetated bay bottom would be affected in this unit. The proposed action could affect water quality and prey abundance. The new pier would increase the number of boat trips in Pensacola Bay (three to four roundtrips by the proposed ferry), would increase the boating activity in the vicinity of the proposed pier, and could increase potential for watercraft collisions with the smalltooth sawfish.

Smalltooth sawfish prey items in the proposed project area are unknown; thus, there is potential to temporarily affect prey abundance in the area during construction because of substrate displacement.

Prey items may be buried or destroyed by the placement of the pier pilings; however, prey in the surrounding area would not be affected. There would be abundant alternative foraging resources during construction, and the smalltooth sawfish would still be able to forage in the area after construction ends.

With appropriate conservation measures, it is anticipated that the proposed action **may affect, but is not likely to adversely affect,** the smalltooth sawfish.

Take Analysis

No direct take is anticipated due to the results of this assessment.

Conservation Measures

Construction activities shall be conducted in accordance with Sea Turtle and Smalltooth Sawfish Construction Conditions (NMFS, 2006) (see Appendix B in the February 17, 2009 BA), which include, but are not limited to the following Best Management Practices (BMP):

- Use siltation barriers made of material that will not entrap/entangle a sea turtle or smalltooth sawfish, and do not block species access from designated critical habitat. Barriers will be properly secured and routinely monitored to ensure turtles are not entangled.
- Water vessels associated with construction will operate at "no wake/idle" speeds at all times in the construction area, and in water depths where the draft of the vessel provides less than a four-foot clearance from the sediment.

Determination of Effect

The implementation of the Endangered Species Act often requires an evaluation of the effects of human activity on listed species and their habitats. The potential for hindering the attainment of a properly functioning environment for protected species is an example of one of questions posed by the dichotomous key for making a determination of effect. Potential impediments to a properly functioning environment may include physical barriers, and impacts to water quality, species disturbance, and habitat, for example. The following questions were reviewed and addressed as part of the decision-making process to make the determination of effect:

> *Are there any proposed/listed species and/or proposed or designated critical habitat in the project area or downstream from the project area?*
> Answer: Yes.
>
> *Does the proposed action have the potential to hinder attainment of relevant properly functioning indicators?*
> Answer: No.
>
> *Does the proposed action have the potential to result in "take" of proposed/listed species or destruction/adverse modification of proposed/designated critical habitat?*
> Answer: Yes, but not likely with appropriate conservation measures.

The information available for the project has been analyzed, and it has been concluded that the proposed action would have a negligible probability of effects on the smalltooth sawfish. It is determined that the proposed action is **Not Likely to Adversely Effect** the smalltooth sawfish.

References for Smalltooth Sawfish Discussion

National Marine Fisheries Service (NMFS). 2006. Sea Turtle and Smalltooth Sawfish Construction Conditions. http://www.dep.state.fl.us/Water/wetlands/forms/spgp/SPGP_IV_Attachment_14-Sawfish_SeaTurtlesConstCond.pdf. Accessed December 29, 2009.

NOAA. 2009a. Smalltooth Sawfish Recovery Plan. Technical Report. 102 pages. http://www.nmfs.noaa.gov/pr/pdfs/recovery/smalltoothsawfish.pdf Accessed: April 12, 2009.

NOAA. 2009b. Endangered and Threatened Species; Critical Habitat for the Endangered Distinct Population Segment of Smalltooth Sawfish. Federal Register. 74: 169. Sept. 22, 2009. http://sero.nmfs.noaa.gov/pr/pdf/sawfish%20web/E9-21186.pdf Accessed: April 12, 2009.

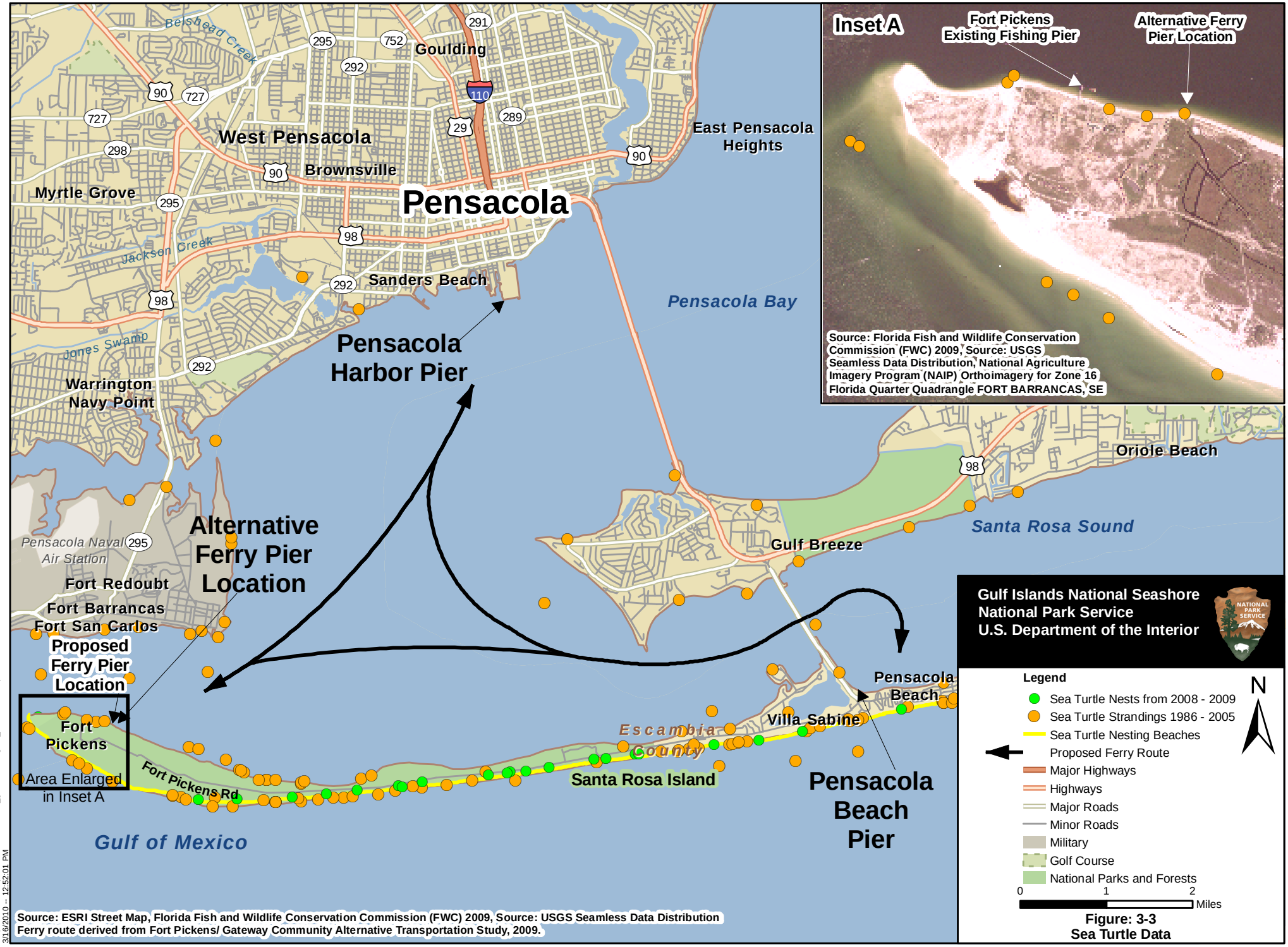


Figure: 3-3
Sea Turtle Data

IN REPLY REFER TO:

United States Department of the Interior

National Park Service
Gulf Islands National Seashore
1801 Gulf Breeze Parkway
Gulf Breeze, Florida 32563

L7617 (GUIS-SRM)

June 23, 2011

Ms. Calusa Horn
National Oceanic and Atmospheric Administration
NOAA Fisheries Service
Southeast Regional Office
263 13th Avenue South
Saint Petersburg, Florida 33701

Re: Biological Assessment and Determination of Effect
Proposed Design and Construction of Fort Pickens Pier and Ferry Service
Gulf Islands National Seashore, Florida

Dear Ms. Horn:

Thank you for taking the time to speak with Gulf Islands National Seashore (GUIS) staff in April regarding the Biological Assessment (BA) for the proposed Fort Pickens pier and ferry service. This letter is a follow up to that conversation as well as your earlier correspondence regarding this subject. We request that you concur with the BA's effects determination that the proposed action may affect but is not likely to adversely affect the manatee, sea turtle species, gulf sturgeon, or essential fish habitat.

Specifically, in response to your questions outlined in your August 2010 correspondence, the following information is provided.

1. Q: Please indicate which design alternative has been selected for the proposed project.
A: Alternative C is the preferred alternative as described in the draft EA. A basic description of the proposed design for the pier at Ft. Pickens is as follows:

As indicated within the attached schematic, a proposed pier in an "F" configuration will be used as the basic design. The foot of the "F" would connect to the seawall and extend approximately 240-feet out into the ocean. The legs of the "F" will extend in the eastern direction approximately 60-feet. A pier width of 16-feet is proposed with pile bents placed at 10-feet on centers and using two to three piles per bent. Pilings will be timber on shore and concrete in the ocean. Proposed pilings shall be 14" by 14" on land or 18" by 18" in water, depending on the location. See the attached drawings for more detail.

TAKE PRIDE IN AMERICA

Additionally, per request of Ben Russell from the Florida Department of Environmental Protection, the following will be implemented:

a. Deck planks will not be any wider than 8 inches
b. Deck plank spacing will be 1/2 inch.
c. The dock height will be a minimum of 5 feet above Mean High Water.

The passenger ferry pier will be located approximately 1,250 feet east of the existing Fort Pickens fishing pier. The location of the proposed ferry pier for Alternative C is shown in enclosed Figure 2-1 and is labeled as the "Alternative Ferry Pier Location." Moorings or bumpers may be installed on the pilings to protect the dock. The proposed pier would tie into the existing seawall and would access existing and/or expanded walkways that connect to the seawall and guide visitors to an adjacent shuttle station and/or other visitor use areas within the greater Fort Pickens area. The pier would be constructed in compliance with the Florida Building Code and ADA accessible standards. The ferry pier would be designed to withstand or sustain Category 3 or 4 storm damage, and provide far more reliable access to the island for visitors should the existing access road be rendered impassable due to future storm events. Bathymetry for the area where the pier is identified to be constructed ranges from water depths of 0 to between 15 and 20 feet at the end of where the pier will be located.

2. Q: We (NOAA) will require detailed schematics and the construction methodology for the proposed project. The project site is located within the boundaries of Gulf sturgeon critical habitat and a detailed construction methodology and project schematics must be provided to determine potential affects to critical habitat features and migratory pathways.

A: As requested, enclosed are the draft/preliminary drawings (Enclosure 1) provided by the U.S. Army Corps of Engineers, Mobile District Office (USACOE) and an overlay of the CAD drawings on an aerial photo of the project area (Enclosure 2).

Construction Methodology: The pier would be constructed from a floating barge using floating turbidity barriers, emergency response spill kits, and other appropriate aquatic construction BMPs as outlined in the BA.

3. Q: Downstream sturgeon migration begins September 1 and continues through November. Construction should NOT occur during September due to potential impediment of a migratory pathway. Upstream migration begins March 1 and continues through May. NMFS recommends that construction occur between the upstream and downstream migration (i.e., June, July, and August OR December, January, and February).

A: USACOE plans to issue a contract for the entire project to be completed within 6 months, and feel confident that the in-water construction work and placement of the pylons will be completed within 3 months, but to allow for weather contingencies, inclement weather, or contractual delays, GUIS requests that in-water construction period be December 1 – March 31. Above water construction, or finishing work, will occur at the same time or after the in-water construction phase, and into late spring/early summer.

4. Q: NMFS is recommending that "No Fishing" signage be posted at the proposed pier.

A: Once construction is completed, "No Fishing" signage will be posted at the ferry pier.

With this additional information, we request your final review and concurrence determination relative to our finding of may affect but is not likely to adversely affect the manatee, sea turtle species, gulf sturgeon, or essential fish habitat. Subsequent to your review of the information provided, should you have any questions or need additional clarification, please contact Rick Clark, Chief of Science & Resources Management, by calling 850-916-3011 or by email at rick_clark@nps.gov, or Jolene Williams, Environmental Protection Specialist, at (228) 230-4132, jolene_williams@nps.gov. Thank you for your time and attention to this matter.

Sincerely,

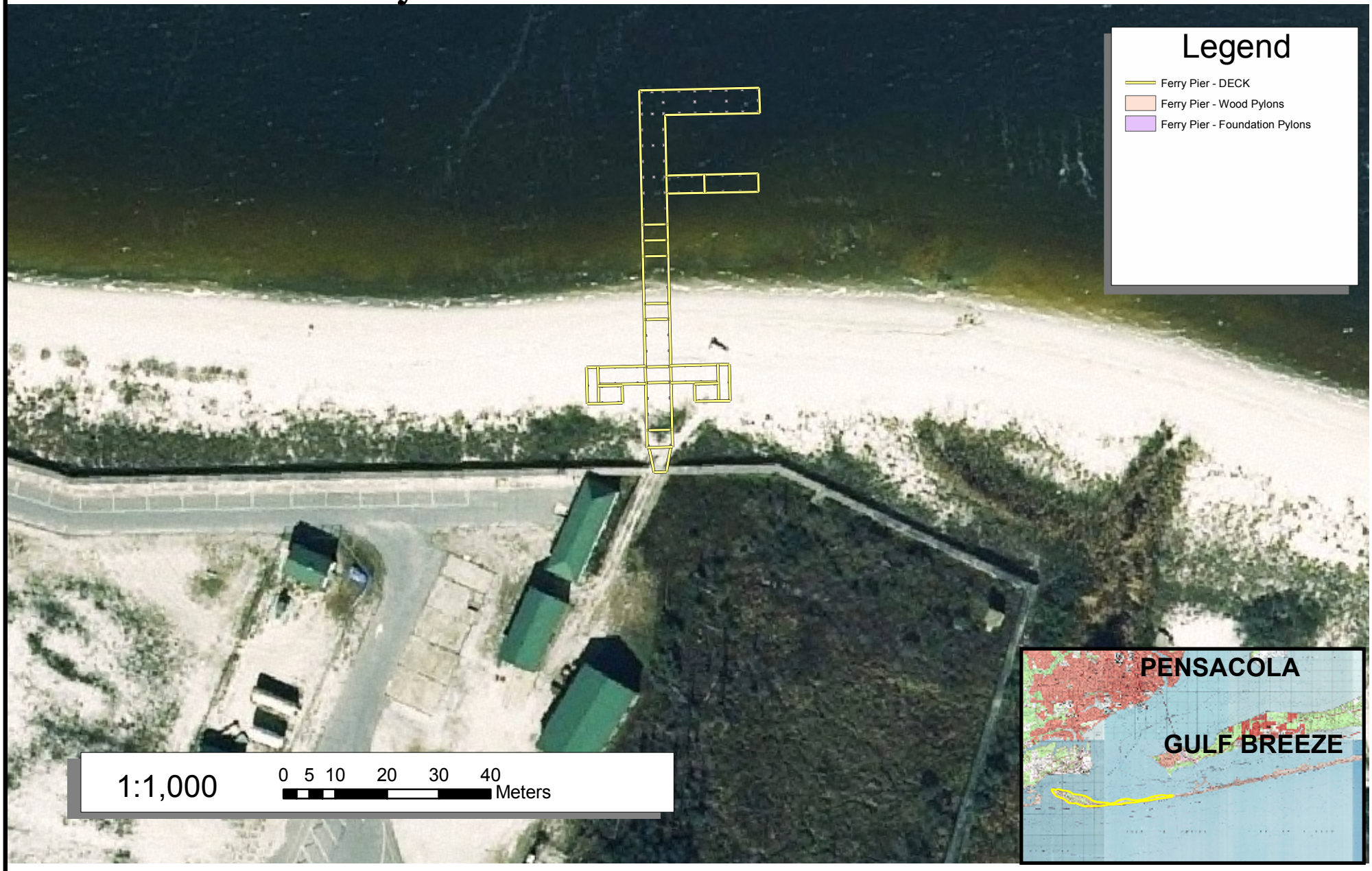
Daniel R. Brown
Superintendent

Enclosures

CC: Mike Malsom
Environmental Quality & Planning
U.S. Army Corps of Engineers
109 St. Joseph Street
Mobile, Alabama 36602

RC:jrc:062711.850.916.3011

Fort Pickens Ferry Pier



Produced by Science & Resources Management Division - Jolene Williams

May 2011

FILE: Master Map.mxd

FOR INTERNAL USE ONLY - CONTAINS SENSITIVE MATERIAL

APPENDIX B

SEA TURTLE AND SMALLTOOTHED SAWFISH CONSTRUCTION CONDITIONS

ATTACHMENT #14
SPGP IV

SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

The permittee shall comply with the following protected species construction conditions:

a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.

b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.

c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.

d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.

e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.

f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.

g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Revised: March 23, 2006
O:\forms\Sea Turtle and Smalltooth Sawfish Construction Conditions.doc

APPENDIX C

STANDARD MANATEE CONSTRUCTION CONDITIONS FOR IN-WATER WORK

STANDARD MANATEE CONDITIONS FOR IN-WATER WORK

July 2005

The permittee shall comply with the following conditions intended to protect manatees from direct project effects:

a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.

d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.

e. Any collision with or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-FWCC. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-232-2580) for north Florida or Vero Beach (1-561-562-3909) for south Florida.

f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Awareness signs that have already been approved for this use by the Florida Fish and Wildlife Conservation Commission (FWC) must be used. One sign measuring at least 3 ft. by 4 ft. which reads *Caution: Manatee Area* must be posted. A second sign measuring at least 81/2" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities.

FWC Approved Manatee Educational Sign Suppliers

ASAP Signs & Designs
624-B Pinellas Street
Clearwater, FL 33756
Phone: (727) 443-4878
Fax: (727) 442-7573

Wilderness Graphics, Inc.
P. O. Box 1635
Tallahassee, FL 32302
Phone: (850) 224-6414
Fax: (850) 561-3943
www.wildernessgraphics.com

Cape Coral Signs & Designs
1311 Del Prado Boulevard
Cape Coral, FL 33990
Phone: (239) 772-9992
Fax: (239) 772-3848

Municipal Supply & Sign Co.
1095 Fifth Avenue, North
P. O. Box 1765
Naples, FL 33939-1765
Phone: (800) 329-5366 or
(239) 262-4639
Fax: (239) 262-4645
www.municipalsigns.com

Vital Signs
104615 Overseas Highway
Key Largo, FL 33037
Phone: (305) 451-5133
Fax: (305) 451-5163

Universal Signs & Accessories
2912 Orange Avenue
Ft. Pierce, FL 34947
Phone: (800) 432-0331 or
(772) 461-0665
Fax: (772) 461-0669

New City Signs
1829 28th Street North
St. Petersburg, FL 33713
Phone: (727) 323-7897
Fax: (727) 323-1897

United Rentals Highway Technologies
309 Angle Road
Ft. Pierce, FL 34947
Phone: (772) 489-8772
or (800) 489-8758 (FL only)
Fax: (772) 489-8757

CAUTION: MANATEE HABITAT

All project vessels

IDLE SPEED / NO WAKE

When a manatee is within 50 feet of work all in-water activities must

SHUT DOWN

Report any collision or injury to:

1-888-404-FWCC (1-888-404-3922)

Florida Fish and Wildlife Conservation Commission

Resource Survey and Investigation of Bathymetry and Currents in the Area of Fort Pickens

Summary report

by

Klaus J. Meyer-Arendt, Ph.D.
Dept. of Environmental Studies
University of West Florida

Submitted to

Federal Highway Administration
Eastern Federal Lands Highway Administration
and
National Park Service
Gulf Islands National Seashore

March 14, 2009

Introduction

The National Park Service, in cooperation with the FHWA proposes to initially install a temporary spud barge/dock and within the next few years remove this temporary barge/dock and install a permanent wood or composite material dock to serve a ferry that will convey passengers between several locations within Pensacola Bay. The study area is outlined on the bathymetric map supplied by the Gulf Islands National Seashore (Fig. 1).

The objectives of this project were to perform investigations and surveys of existing bathymetric, hydrographic, and bottom-sediment conditions and make interpretations and evaluations regarding the impacts to the natural resources, of installation and operation of temporary and permanent dock installations for the described ferry service.

Two field investigations were made in the study area, one on February 9, 2009 and a second on March 11, 2009.

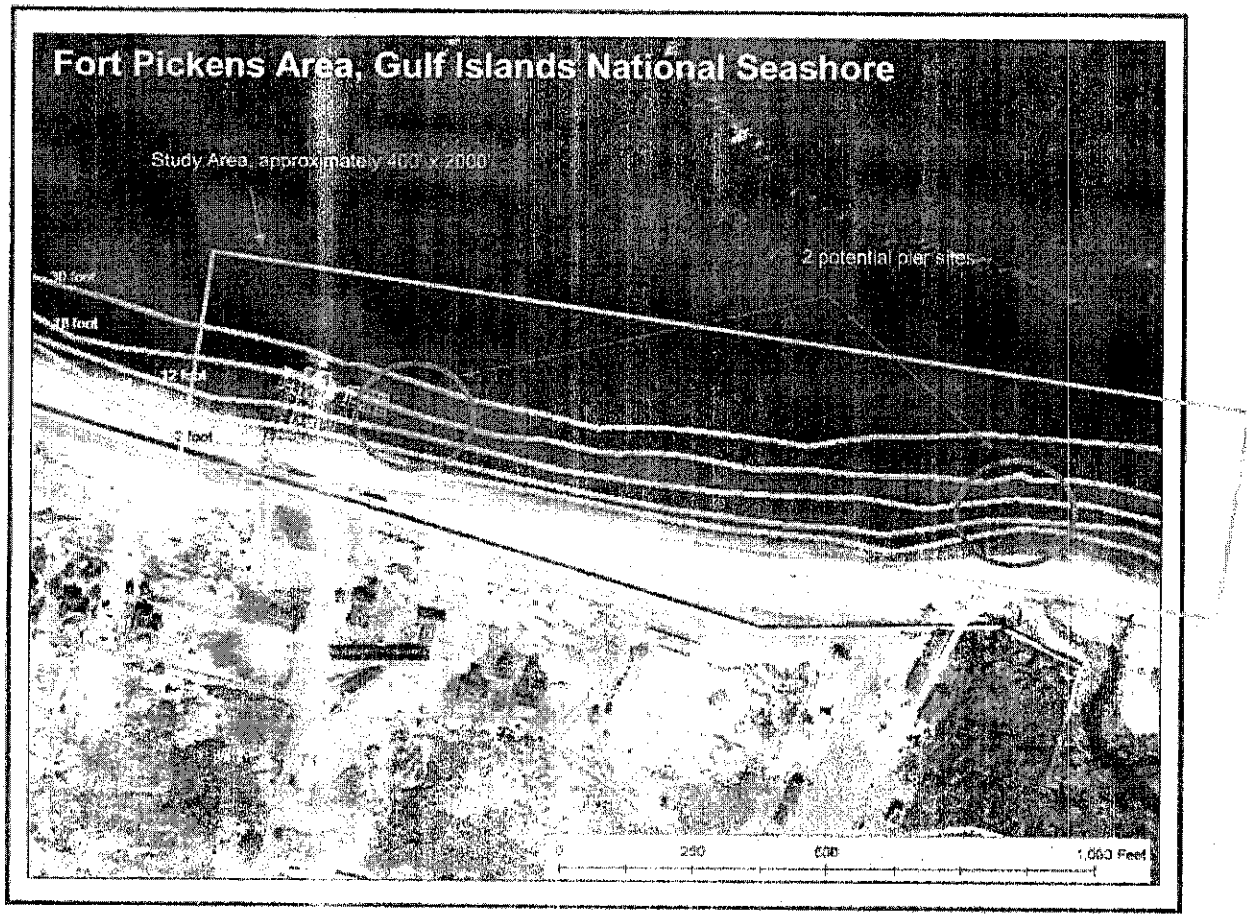


Figure 1. Ft. Pickens study area, Gulf Islands National Seashore

Bathymetry and Current Investigations

The first objective was to delineate the bathymetry (i.e., bottom topography) of the study area and ascertain historic bathymetric changes. Bathymetric data (z values) were collected by boat-mounted fathometer that recorded data electronically. Tied in with the bathymetric data were continuous GPS coordinates (x, y values) generated by a Trimble GPS receiver. Multiple boat runs, both shore-normal and shore-parallel, were made to generate sufficient data to cover the defined study area. The shoreline was mapped on foot during mid-tide conditions. ArcMap software was used to interpolate the resultant data throughout the study, i.e., fill in the sites not directly covered by the boat runs.

The resultant data were used to generate a detailed map (Figure 2). This map shows approximately the same pattern as Figure 1, only at a much finer resolution. Other than some minor changes in shoreline position, it is our opinion that the bathymetry is relatively unchanged.

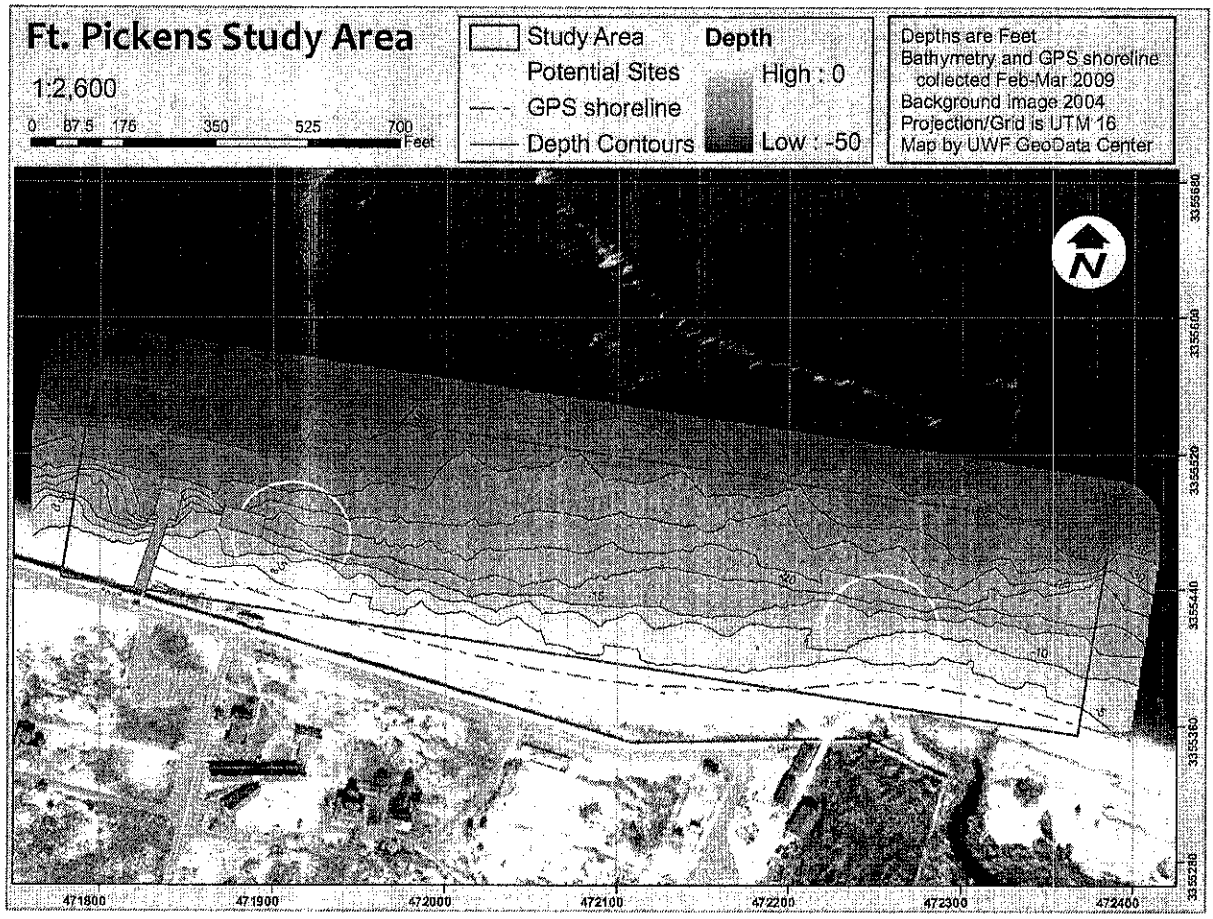


Figure 2. 2009 bathymetry, Ft. Pickens study area, GINS

Consultation of NOAA navigation charts (modern and historic) as well as historic maps of the area reveals little significant change **in this area**. Part of the difficulty in making comparisons between charts is that the level of detail on the medium-scale (or worse) charts is very lo (Figures 3 and 4).

A secondary objective includes characterizing the bay bottom and noting any biological or geological resources or geohazards. Using a grab-sampler, we pulled up surface bottom sediments from about 15-20-ft depths in the vicinity of the two proposed ferry landing sites as well as at one location in between. At all three sites, the bottom was hard and of a coarse sand. At the westernmost site, there was also concrete rubble (pebble-sized and smaller), most probably eroded from the old concrete pier in the area. At all three sites, it was difficult to easily obtain bottom sediment samples because of the hardness of the bottom surface sediments. Fine- or medium-sized sediments (clays, silts) were absent, as was any evidence of bottom vegetation such as sea grass.

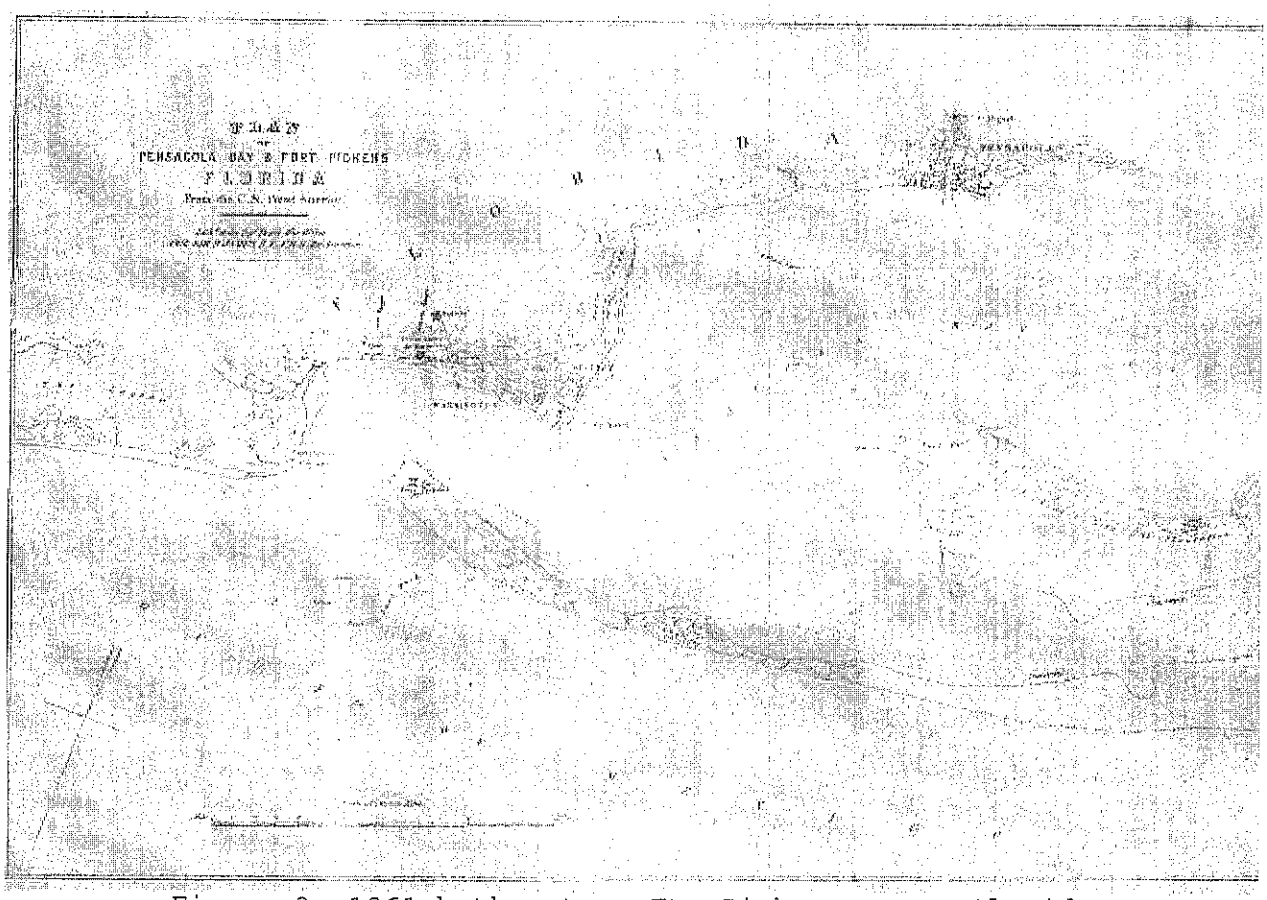


Figure 3. 1861 bathymetry, Ft. Pickens area, Florida

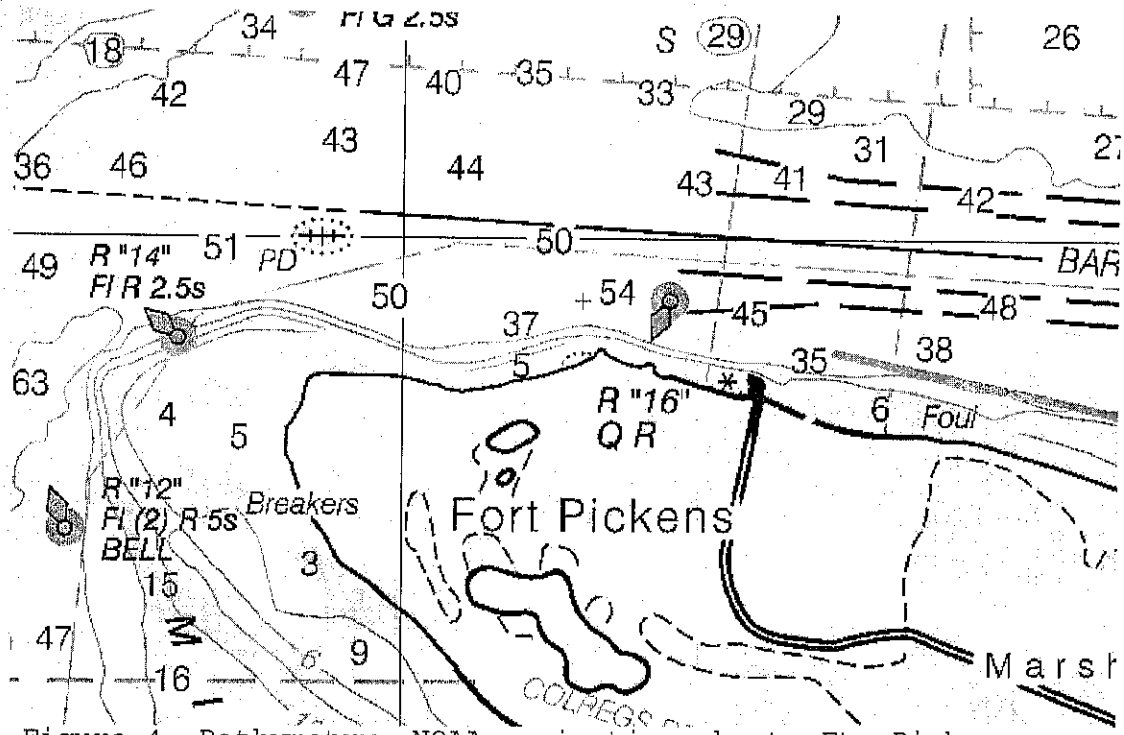


Figure 4. Bathymetry, NOAA navigation chart, Ft. Pickens area

We did not note any geohazards or biological or geological resources in either the use of the grab-sampler or observations in water of less than 20-ft depths. (Beyond 20-ft depths it was difficult to see the bottom clearly.) The only real hazards observed was construction debris, which was in shallow water at three sites: 1) immediately west of the western potential pier site, 2) within the eastern potential pier site, and 3) approximately 200 ft west of the eastern potential pier site (Figure 5).

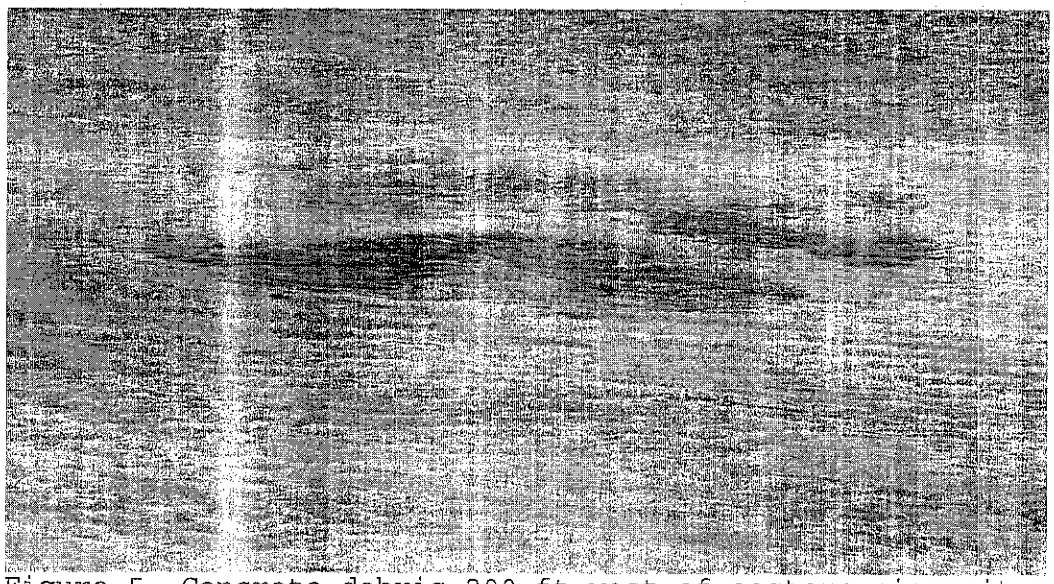


Figure 5. Concrete debris 200 ft west of eastern pier site.

A third objective was to note the general pattern of water flow (mostly tidal currents). On the first field day (Feb. 6, 2009), the timing of the trip was such that we were conducting our work halfway between low and high tides during conditions of spring tide (-0.8 ft at 6:07 am and +1.2 ft at 6:52 pm, or a tide range of 2 feet at Pensacola Pass). The NOAA predictions (http://tidesandcurrents.noaa.gov) indicated a maximum current of 3.0 knots (about 1.5 m/sec) in the main channel by the early afternoon. At that time, we deployed a current meter seaward of the concrete remains of the old pier (near the proposed western pier site), and measured currents at various depths. In spite of the optimal predicted currents in the main channel (not very far away), we detected very little current movement (readings ranged from 0.05 to 0.07 m/sec, practically zero). And while predicted currents do not always match observed currents due largely to unpredictable meteorological events (and demonstrated in R.J. Wahl's 1992 study *Observed Currents from the Entrance of Pensacola Bay to the Vicinity of the Allegheny Pier*), the low readings recorded in 2009 indicate little channel current influence near the proposed docking sites.

Aquatic Resource Survey

Based upon our field observations as well as discussions (on Feb. 24, 2009) with UWF Biology professor Dr. Wayne Bennett (who had previously conducted a detailed fish inventory for Gulf Islands National Seashore), we note the following:

1. The aquatic habitats within the study area are not unique. They are typical of aquatic environments between a major tidal channel and a sandy back-barrier shoreline environment. In terms of habitat, the coarse sand, hard bottom is rather poor except in those areas where structures (piers, etc.) have provided pilings that could support barnacles and oysters and other benthic organisms and attract certain game fish such as mullet or other channel fish. (In fact, we noticed several recreational fishing boats in the vicinity of the old concrete pier. One day, there was a boatload of scuba divers around the base of the pier, apparently observing swimming fish.) In addition, porpoises swim through the main tidal channel on a regular basis (and skirt the northern fringes of the study area).

2. There was no high-value bottom environment, e.g., seagrass habitat, detected within the study area, although further to the east, the bay bottom shoals up and seagrasses are found. Here, according to Dr. Wayne Bennett, one might encounter the rare pygmy pipefish or possum pipefish. But this would be well east of the study area.

3. There was no bottom vegetation seen anywhere within the study area.

4. Ecological communities were not unique, and no species inventory was attempted.

Project Impacts and Mitigation Measures

Based upon our field observations, the long history of pier construction in the area, and the remnant concrete wharf, it is unlikely that a sunken-barge ferry landing will have any negative environmental impacts, such as upon species, existing habitats, water quality, or sedimentary processes. It is more likely that habitat will be created, as channel species of fish—including game fish—will find nooks and crannies to explore in and around the sunken-barge ferry landing.

Since there is no anticipated negative impact, there is no need for mitigation.

Since a sunken-barge ferry landing in the surf zone will function somewhat as a groin and potentially trap sand on its updrift side, there is the possibility of beach accretion. In the past, groins were built in this area to build up the beach and thereby minimize wave action destroying the Ft. Pickens seawall. There is one remaining groin west of the study site, but its effectiveness at sand trapping is questionable. Sands are introduced via longshore drift processes as they "wrap around" the western spit of Santa Rosa Island. However, there has not been a long-term build-up of sand because high water levels and corollary high tidal activity tend to remove sand from this area. We anticipate some temporary beach accretion on the western side of the proposed sunken-barge ferry landing. Because of the relatively steep conditions at the proposed locations (especially at the eastern site), we do not expect the sand accretion to hinder the docking ability of the proposed ferry.

We do recommend post-project monthly monitoring of the sunken-barge ferry landing site for at least one year to further refine projected impacts.

Determinations of Effects (for USFWS listed species)

Based upon existing information, there are no known listed species that specifically utilize the study area, so there should be "no effect" in each category.

Recommendations

Two potential sites have been identified for placement of the sunken-barge ferry landing (see Figure 1). Both sites have been used before as boat-landing sites, and both sites contain debris evidence of that past usage. In the eastern site, that debris may need to be removed prior to barge emplacement, whereas in the western site, the barge would be emplaced immediately east of the debris field.

Both sites are suitable, and perhaps passenger access to Ft. Pickens and other local attractions should be the most important criterion in site selection.

In our opinion, the western site may be most optimal because:

1. Debris may not need to be removed prior to emplacement of the landing facility.
2. The nearshore slope is slightly steeper than at the eastern site, which may (or may not) make ferry docking easier.
3. The steeper gradient is indicative of greater proximity to the main tidal channel and to tidal currents in general. Although very little current activity was measured (during a time of predicted high values), beach sedimentation is expected to be lower because of greater proximity to tidal currents.
4. This site is next to the previous dock (and a walk-on fishing pier). Not only does this establish immediate precedent for such a facility, but a tourist attraction (the fishing pier) is nearby.
5. The other site (the eastern site) is in close proximity to a back-barrier tidal channel and adjacent wetlands (see Figure 1), and engine noise and foot traffic may negatively impact bird and other animal life that uses these habitats.

Qualifications of Personnel

Klaus J. Meyer-Arendt, coastal scientist (Appendix A)
Nathan McKinney, GIS specialist (Appendix B)