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5/4/95

**FINDING OF NO SIGNIFICANT IMPACT
MINERALS MANAGEMENT SERVICE
DUVAL COUNTY SHORE PROTECTION PROJECT
THIRD RENOURISHMENT FOR BEACHES 2-3-4**

Finding of "No Significant Impact"

I have considered the leasing of 1.24 million cubic yards of sand resources on the Outer Continental Shelf off Duval County, Florida, and, based on the environmental analysis contained in the U. S. Army Corps of Engineers (USCE) Environmental Assessment (EA), dated December 1993, and the attached Minerals Management Service (MMS) information, find no evidence to indicate that the proposed action will significantly (40 CFR 1508.27) affect the quality of the human environment. Thus the preparation of an environmental impact statement is not required.

Signed:



John Goll

Date: 5/3/95

Chief, Environmental Policy and Programs Division

MMS Proposal

P.L. 103-426 authorizes the Secretary of the Interior to negotiate agreements for the use of OCS sand, gravel, and shell when such use is connected with certain public works projects, like shore protection. The City of Jacksonville/Duval County asked MMS to negotiate a noncompetitive lease agreement for sand resources from the OCS. Therefore, the MMS proposes to lease the sand resources for use in the USCE Duval County Shore Protection Project - third renourishment for Beaches 2-3-4.

The USCE prepared an EA on the Project which documents the effects of the action on the environment. The EA addresses the impacts of the activity on the beach and sand resource borrow area. The MMS reviewed the USCE EA, and, in accordance with 40 CFR 1506, hereby adopts the USCE EA, supplemented by the attached MMS information, for its action.

Lessee/Operator Environmental Stipulations Required by MMS

Besides the requirements of the USCE on the project, the MMS will require additional conditions of the lessee/operator. The operator is required to conduct a study of the benthic repopulation of the borrow area. The MMS also will require the operator to conduct the activities in accordance with the MMS regulations at 30 CFR 282.

The following supplement the USCE EA FONSI summary.

- * Federal water and air quality standards will be met.
- * Closer examination of the potential for archaeological and cultural resources determined that there were no known shipwreck sites and the magnetic anomaly clusters will be avoided by the activity.
- * Monitoring of the effects on the benthic environment will be conducted.

NOTE

5/1/95

To: John Goll
Bob LaBelle

From: Melanie Stright

Subject: EA for Duval County Shore Protection Project

I have reviewed the Cultural, Historic, and Archaeological Resource Sections in the EA for the Duval County Shore Protection Project. The EA states that there will be no impact to any sites listed on, or eligible for inclusion in the National Register of Historic Places. Such a statement implies that no real archaeological analysis of the project area has been conducted, but rather that the National Register was consulted to see if there are any known sites already listed on the National Register within the project area. The assessment in the EA also focuses on the areas of beach to be enriched, not the borrow area where the major impacts will occur. The only statement about the offshore barrier island that is to be used as the borrow area is that it has been disturbed by previous dredging activities and, therefore, is not likely to contain significant cultural resources. Just because an area has been previously disturbed does not mean that all archaeological resources present within the disturbed area are necessarily destroyed. It depends on the type and extent of the disturbance.

Historic Resources

I checked the results of our 1981 archaeological resource baseline study of the continental shelf from Cape Hatteras to Key West. As far as I can determine from the maps I have been given, our baseline study does not show any known historic shipwrecks within the borrow area or along the portions of coastline where sand is to be placed. A magnetometer survey of the borrow area was conducted in 1990 for the purpose of locating any large debris on the sea floor left by earlier dredging activities. According to the archaeologist for the U.S. Army Corps of Engineers, Jacksonville District, the survey was conducted at 50-foot linespacing and the magnetometer sensor was towed within 15 feet of the sea floor. Fifty-one magnetic anomalies ranging in intensity from 3 to 64 gammas were recorded within the proposed borrow area. Most of these anomalies formed discrete clusters and were calculated to represent ferrous objects at the sea floor of between 50 and 2,000 pounds. The archaeologist for the Jacksonville District of the Army Corps of Engineers stated that these anomaly clusters would be avoided by dredge activities to prevent damage to the dredges. There appear to be no plans to investigate the anomaly clusters with divers prior to dredge activities.

Because there are no known historic shipwrecks within the proposed borrow area and because the locations of the magnetic anomaly clusters will be noted and avoided during dredging operations, it is unlikely that any historic shipwreck will be damaged as a result of the proposed dredging operations.

Prehistoric Resources

Relict barrier islands, such as the borrow area for this proposed action, are areas having a high potential for prehistoric archaeological sites. Lagoons that formed behind the barriers, and that were subsequently buried as the barrier migrated shoreward with rising sea level have a particularly high potential for archaeological sites to be preserved.

Ninety geologic cores were taken within the borrow area between 1977 and 1983. I reviewed the geologic descriptions for all of the cores. Seventeen of the cores in the southeastern corner of the proposed borrow area contain peat, wood fragments, increased amounts of shell (some of which were whole), and black organic-stained clays, suggesting a possible back-barrier lagoonal deposit. This area should have been investigated further to rule out the possibility of preserved archaeological deposits before the previous dredging activity heavily disturbed the area. Due to the magnitude of disturbance by the previous dredging activity, the area where these possible back-barrier lagoonal deposits occur is designated as an area of no dredging under this proposal. Therefore, no further impact should occur to this possibly sensitive area as a result of the proposed action. However, this area should be noted as no future dredging allowed here until further archaeological evaluation is undertaken.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

153 1994

Colonel Terrance R. Salt
District Engineer, Jacksonville
P.O. Box 4970
Jacksonville, FL 32232

Attn: Mr. A. J. Selem

Subject: Environmental Assessment (EA) for Duval County Shore
Protection Project Third Renourishment for Reaches 2-4

Dear Colonel Salt:

Pursuant to Section 309 of the Clean Air Act, EPA, Region IV has reviewed the subject document which describes the environmental consequences of placing approximately 1.5M cubic yards of material from Atlantic Boulevard south to the St. Johns County line. The current iteration follows the specifics of the previous renourishments undertaken in 1986 and 1987 to include the same offshore borrow area. On the basis of our review we have not determined any significant and/or long-term objections to implementation of this action.

Thank you for the opportunity to comment. If we can be of further assistance in this matter, Dr. Gerald Miller (404-347-3776) will serve as initial point of contact.

Sincerely,

For Gerald J. Miller

Heinz J. Mueller, Chief
Environmental Policy Section
Federal Activities Branch

FACSIMILE TRANSMITTAL HEADER SHEET					
COMMAND		NAME OFFICE SYMBOL	TELEPHONE NUMBER	AUTHORIZED RELEASER'S SIGNATURE	
FROM: JACKSONVILLE DISTRICT US ARMY CORPS OF ENGRS		CHARLES STEVENS	FAX 904-232-1213 904-232-2113	<i>Charles F. Stevens</i>	
TO: <i>MMS</i>		<i>MR BARRY DRUCKER</i>	<i>FAX 703-787-1284 703-787-1300</i>	DATE-TIME <i>1 1200</i>	MONTH <i>5</i>
CLASSIFICATION <i>R</i>	NO. PGS. <i>2</i>	PRECEDENCE	REMARKS: <i>EPA letter on Duval County Florida</i>		
<i>INCL COVER</i>		SPACE BELOW FOR COMMUNICATIONS CENTER USE ONLY <i>Beach-Erosion Control Project for information</i>			
DA FORM 3918-R 1 AUG 72					

Message:

PROGRAMS AND PROJECT MANAGEMENT DIVISION
FAX 904-232-1213

400 WEST BAY STREET
JACKSONVILLE, FLORIDA 32232-0019



Please call us if you have had any problems receiving or if there are any pages missing.



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

21 attached
Rec 3110195

REPLY TO
ATTENTION OF

DUVAL COUNTY SHORE PROTECTION PROJECT
THIRD RENOURISHMENT FOR REACHES 2-3-4
DUVAL COUNTY, FLORIDA

FINDING OF NO SIGNIFICANT IMPACT

I have reviewed the planning document and the attached Environmental Assessment of the above cited proposed project. Based on information analyzed in the Environmental Assessment and on pertinent data obtained from cooperating Federal agencies having jurisdiction and/or special expertise, and information obtained from the interested public, I conclude that the considered action will have no significant impact on the quality of the human environment.

Reasons for this conclusion are, in summary:

a. There will be no adverse impacts to threatened or endangered species. The National Marine Fisheries Service and the U.S. Fish and Wildlife Service have concluded that the project is not likely to jeopardize the continued existence of any threatened or endangered species under their purview.

b. There will be no adverse impacts to fish and wildlife. The U.S. Fish and Wildlife Service has advised the Corps that no significant effect is expected to fish and wildlife resources by implementation of this project.

c. There will be no adverse impacts to known sites of cultural or historical significance. The Florida State Historic Preservation Officer has indicated that the beach renourishment project will have no effect on any sites listed, or eligible for listing, in the *National Register of Historic Places*.

d. State water quality standards will be met.

e. Benefits to the public will be protection of upland residences and businesses as well as associated infrastructure along an erosive beach from storm generated wave energy. A wider beach will also provide more space for both active and passive saltwater recreational activities for residents and visitors.

In consideration of the information summarized, I find that the considered action does not necessitate that an Environmental Impact Statement be undertaken.

Date:

22 Dec 93

TERRENCE C. SALT
Colonel, Corps of Engineers
Commanding

ENVIRONMENTAL ASSESSMENT

**DUVAL COUNTY SHORE PROTECTION PROJECT
THIRD RENOURISHMENT FOR REACHES 2-3-4
DUVAL COUNTY, FLORIDA**

DECEMBER 1993

ENVIRONMENTAL ASSESSMENT

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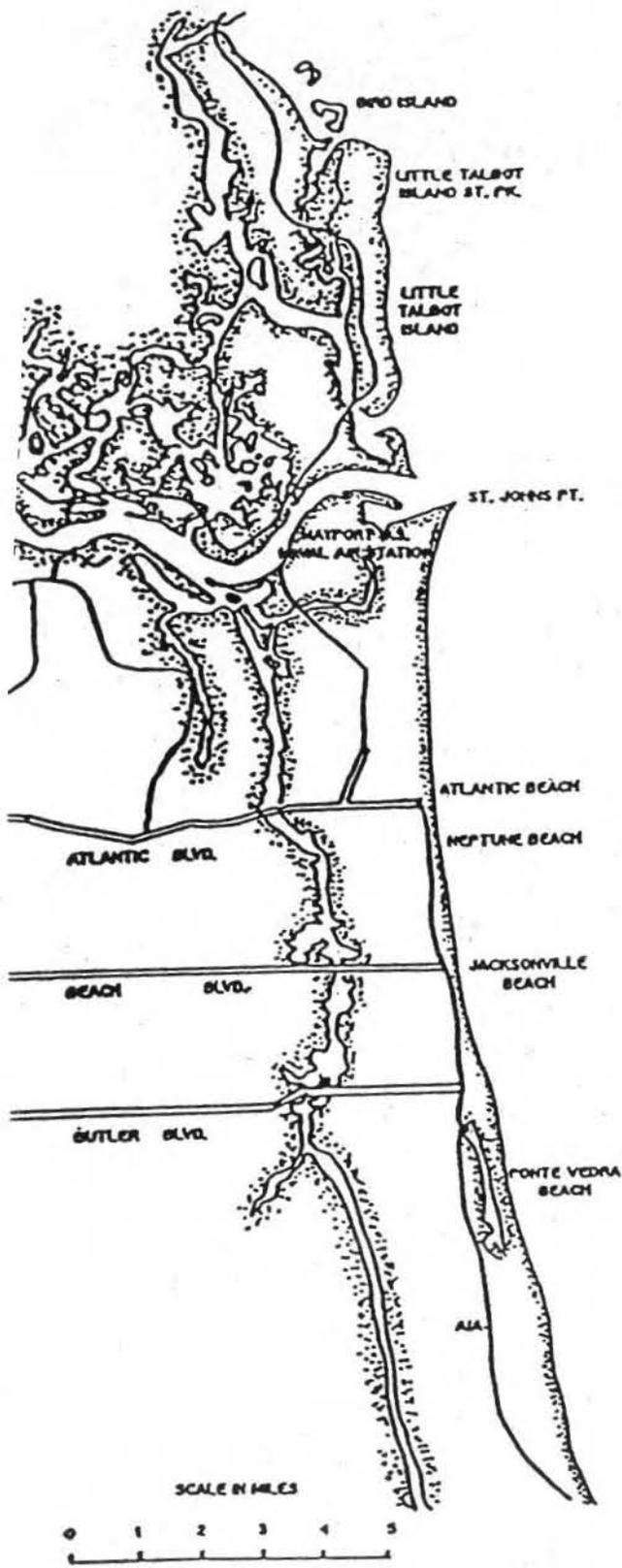
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ENVIRONMENTAL ASSESSMENT

1.00 PROJECT AUTHORITY. The 10 miles (16km) of Atlantic shoreline between the St. Johns River to the north and the Duval County - St. Johns County line to the south (Figure 1) was authorized as a shore protection project with periodic renourishment. The project was authorized by Section 301 of the River and Harbor Act of 1965 (Public Law 89-298) on 27 October and is described in House Document 273/89/1. Section 301 projects are undertaken under the direction of the Secretary of the Army and supervision of the Chief of Engineers. The authority for Federal participation in the cost of periodic renourishment expired in December of 1990. With this in mind, a Section 934 Reevaluation Report was completed in October of 1990. This report evaluated the Federal interest in extending Federal participation in the cost of future renourishment of Duval County beaches. In accordance with Section 934 of the Water Resources Development Act of 1986, on 3 February 1993, the Assistant Secretary of the Army for Civil Works approved extending Federal participation in periodic renourishment of the shore protection for Duval County.

2.00 INTRODUCTION. It was concluded in the 1960's by local, State, and Federal officials that the beaches of Duval County and the adjacent buildings and infrastructure face a serious damage threat from storm generated waves and tides. To help combat and lessen the threat of storm generated shoreline damage, beach protection in the form of beach fill renourishment was applied as early as 1963. The authorized project area was renourished in 1980 and again in 1987. Because of approved Federal participation in the periodic renourishment of the Duval County shoreline, beach fill is placed on the project area when erosional forces have significantly reduced the beach berm and coastal residences and infrastructure are at risk from storm damage. Because of the severe erosion of the beaches from the 1992-1993 winter storms, it has been concluded that Federal participation in beach renourishment activities is currently warranted to assure protection to coastal residents and buildings.

3.00 PROJECT LOCATION. Duval County is located in the extreme northeastern corner of Florida along the Atlantic Ocean (Figure 2). The Duval County shore is separated from the mainland portion of the county by the Intracoastal Waterway. The Atlantic shore of the county consists of a barrier island bounded to the north by Nassau Sound and the St. Johns River, to the west by the Intracoastal Waterway, to the east by the Atlantic Ocean, and to the south by St. Johns County and the community of Ponte Vedra



ATLANTIC OCEAN

**DUVAL COUNTY
 JACKSONVILLE, FLORIDA
 LOCATION PLAN**

FIGURE I

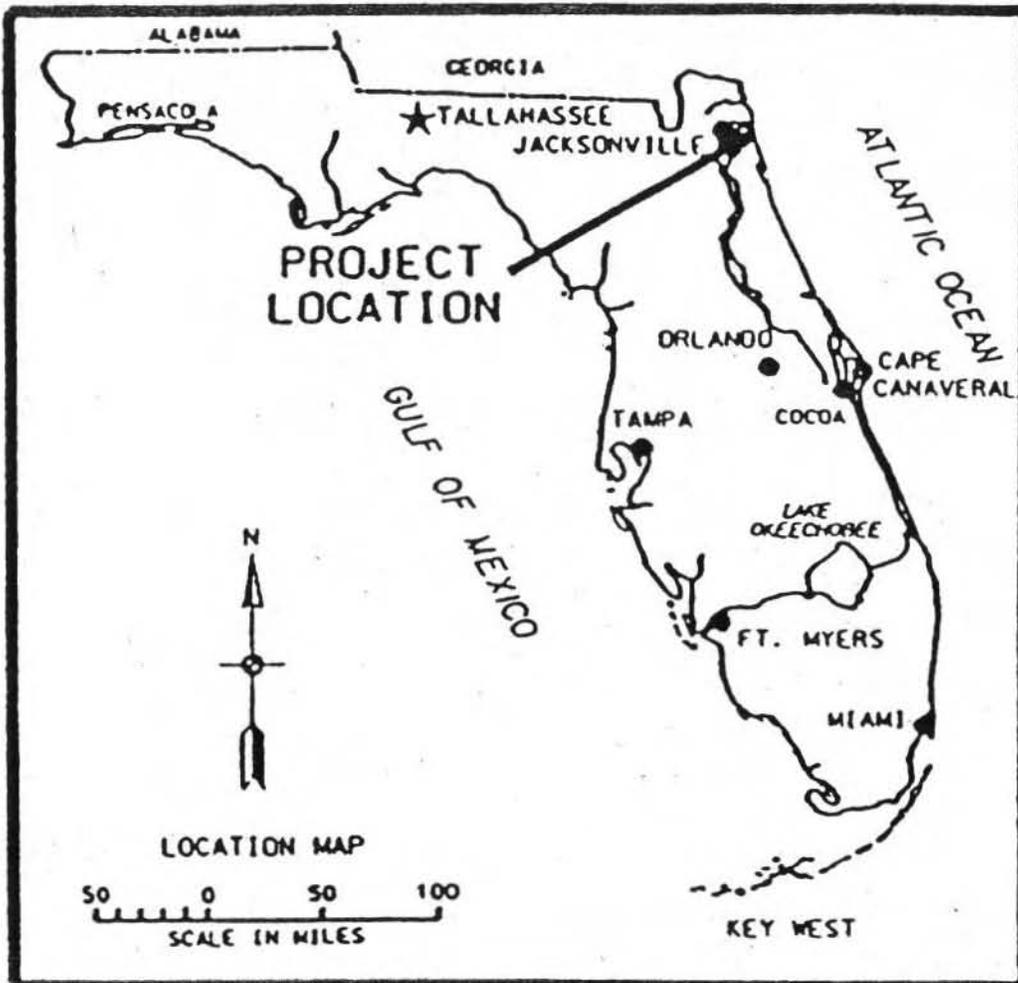


Figure 2. General location map. The authorized project is located along the Atlantic shoreline in Duval County, at the northeastern section of Florida.

Beach (Figure 3). The authorized project requires that periodic nourishment along the ocean frontage just south of the U.S. Naval Station at Mayport and the areas of Kathryn Abbey Hanna Park, and the towns of Atlantic Beach, Neptune Beach, and Jacksonville Beach (Figure 3) be undertaken, as needed. As is the case with the majority of coastal Florida, these areas are highly developed with private homes, apartment houses, resort motels and condominiums, and concession establishments located throughout the area.

4.00 NEED FOR THE PROPOSED ACTION. A comparative analysis of historical surveys, aerial photographs, and information obtained from local officials and residents aided in defining the extent and seriousness of the erosion problem along the Duval County shoreline. Winter storms accompanied by strong northeast winds results in beach erosion and lowering of the beach profile by scouring in areas protected by seawalls, and recession of the dunes on unprotected beaches. Although natural accretion of the beach generally occurs during the summer months, this seasonal accretion does not equal the winter recession of the beach. Rates of erosion and the shorefront structures that may be potentially at risk due to erosion of the protective beach along the Duval County shoreline can be found in the 1990 Section 934 Reevaluation Report with Environmental Assessment.

5.00 PROPOSED ACTION. The current project will use the same construction templates as the previous renourishments undertaken in 1986 and 1987. Information concerning the specifics of the above mentioned templates as well as justification for the calculated fill volumes can be found in the 1984 General Design Memorandum (GDM) and the 1990 Section 934 Report. It is estimated that the current renourishment projects will place approximately 1,400,000 cubic yards of beach compatible material from Atlantic Boulevard south to the St. Johns County line (Reaches 3 and 4) and 322,000 cubic yards of material north of Atlantic Boulevard (Reach 2).

6.00 ALTERNATIVES TO THE PROPOSED PLAN. A basic alternative to any problem is to take the no action alternative and allow nature to take its course. In this case, the no action alternative would allow the beaches to further erode away over time. The current state of erosion would significantly increase the threat of wave and tidal storm damage to residences and businesses along the shoreline as well as virtually eliminating oceanfront recreation for the residents and tourists of Duval County. Additional alternatives such as current deflectors, jetties, groins, breakwaters, and bulkheads were all considered for project adoption. A thorough description of each alternative, potential environmental impacts, and why it was decided that the

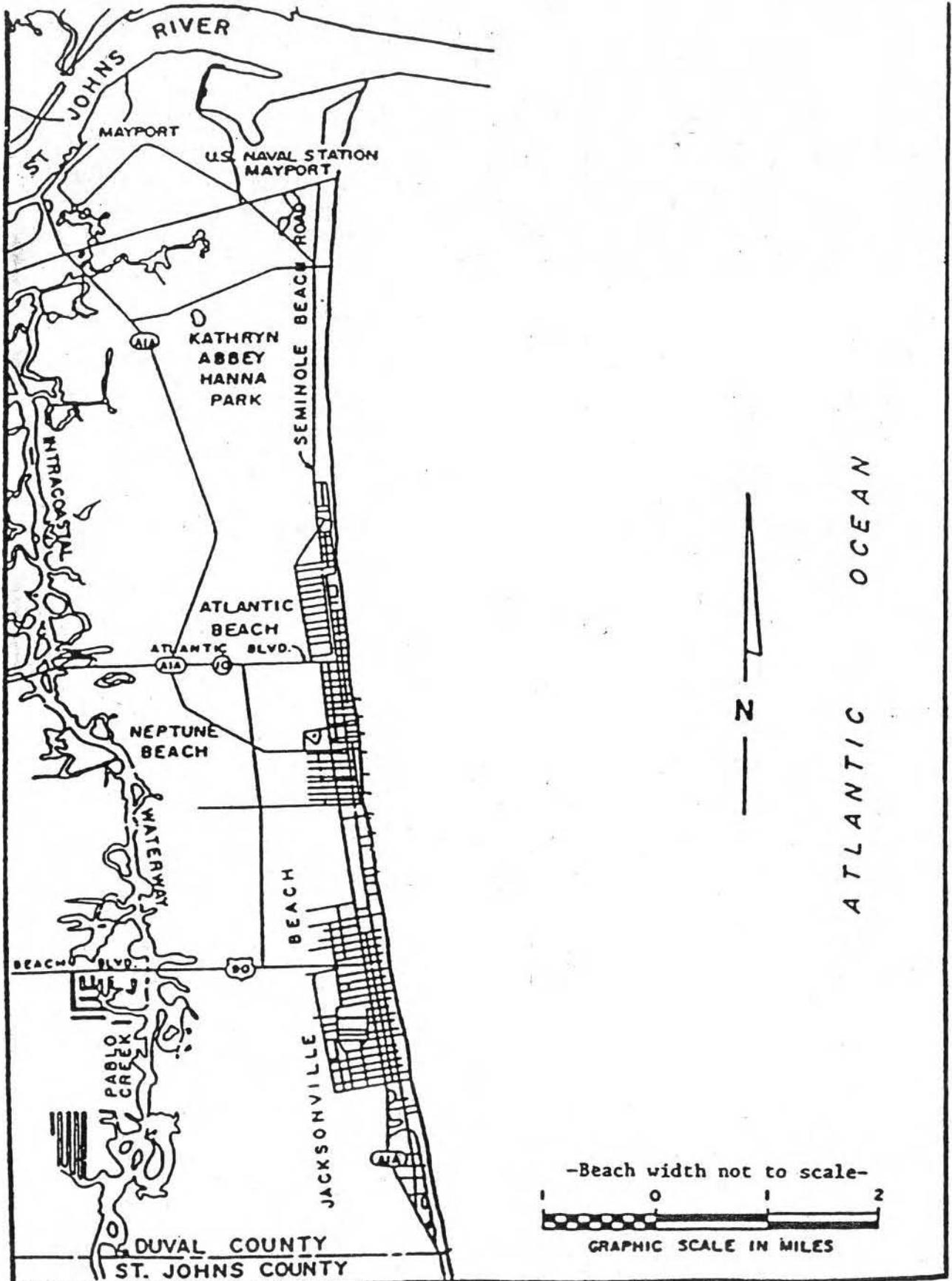


Figure 3. The authorized project area is a barrier island bounded by the St. Johns River to the north, St. Johns County to the south, the Intracoastal Waterway to the west, and the Atlantic Ocean to the east.

listed alternatives should not be implemented is described in significant detail in the 1974 Final Environmental Impact Statement (FEIS) and the 1984 GDM.

7.00 **DESCRIPTION OF THE BORROW AREA.** The beach compatible material used in the initial construction and subsequent renourishments was obtained from an offshore borrow site located approximately 8.0 miles (12.8km) northeast of Jacksonville Beach, Florida (Figure 4). The offshore borrow site lies in 50-60 feet (15.2m-18.2m) of water. The material found in this area was shown to consist primarily of sand that is gray quartz, fine to medium grain, well sorted, and ranges from clean to slightly silty with a small percentage of clay present. As reported in the 1990 Section 934 Reevaluation Report, the pre-project native beach had a phi-mean of 2.38 (0.192 mm). The sand from the borrow area used in the initial 1983 renourishment is not significantly different from the native beach sand as the material had a phi-mean of 2.40 (0.189 mm).

8.00 **EXISTING ENVIRONMENTAL CONDITIONS.**

8.01 General Environmental Setting. The State of Florida is a portion of the Floridian Plateau, the plateau being exposed as dry land during periods of drop in sea level. Each retreat of the sea left behind a wide variety of hard mineral deposits, which have been moved about subsequently by waves and currents. The movement of these deposits has formed present day sandy beaches, offshore bars, and barrier islands. Shore processes over geologic time have enlarged and extended many of these barrier islands. These barrier islands are generally vegetated with salt tolerant grasses, herbs, and shrubs. Pioneer species such as sea oats (*Uniola paniculata*) dominate the foredune and the saw palmetto (*Serenoa repens*) the leeward slope of the Atlantic coastal dunes in this area. Waves are continually adding new sections to barrier islands and eroding the old, through dynamic processes such as longshore drift, winter storms, and hurricanes. Where summer accretion does not keep up with winter storm recession, an erosion problem such as the one that Duval County is currently experiencing prevails.

8.02 Fish and Wildlife Resources. The biological communities found in the general project area are all well adapted to the particular physiochemical and hydrodynamic conditions associated with the supralittoral beach zone and the intertidal swash zone (Nelson 1985). Biological surveys of the nearshore area were initially undertaken in September 1973 and January 1974, and the offshore borrow area surveys were conducted in January and April 1974. A species list of the organisms either collected and

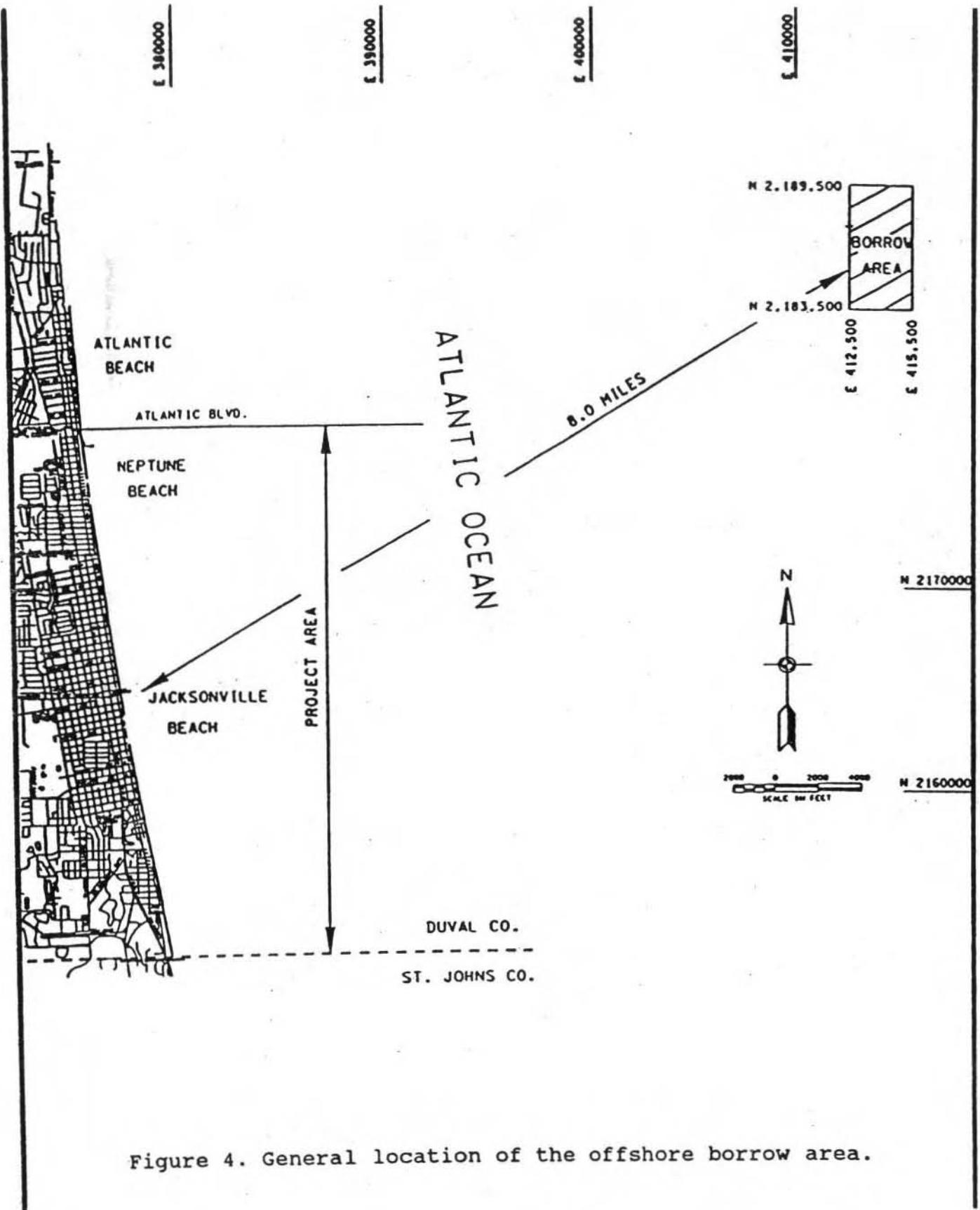


Figure 4. General location of the offshore borrow area.

identified or visually noted is attached as Appendix D. Similarly, a pre- and post-construction infaunal analysis of the area just north of Atlantic Boulevard (Figure 3) was conducted in August of 1991 and December of 1992. In both the 1970's and the 1990's, the numerically dominant invertebrate found along the shoreline of Duval County is the Atlantic coquina clam, *Donax variabilis*, and the amphipod, *Acanthohaustorius pampus*. A complete species list of all benthic organisms collected in the nearshore zone can be found in a June 1993 report submitted to the Corps by Gulf Engineers & Consultants, Inc.. A portion of this report listing the benthic species that were collected is attached as Appendix D. The biological communities in the highly dynamic intertidal swash zone must cope with being aerially exposed during normal tidal cycles as well as being subjected to the high energy of the ocean waves. Typically, these organisms have low species diversity because of the harshness of the environmental conditions present. However, animals that are able to successfully adapt to these dynamic conditions are faced with very little competition from other organisms. It is because of this lack of competition and adaptability to the dynamic conditions found along the project area that *D. variabilis* and *A. pampus* are able to numerically dominate the biological community (Edgren 1959). Receding waves tend to wash amphipods and isopods out of their burrows and suspend these organisms into the water column where they serve as an important food source for many of the important nearshore fish originally listed in the 1974 Final Environmental Impact Statement (FEIS) and included in Appendix D. A variety of polychaete worms that are also adapted to this highly dynamic and stressful environment can be found within the intertidal zone of the Duval County beaches. These intertidal organisms also provide an important food source for foraging shore and wading birds.

Highly visible decapod crustaceans of the Duval County supralittoral zone include the ghost crab (*Ocypode quadrata*), mole crab (*Emerita talpoida*), and Atlantic fiddler crab (*Uca pugilator*). These organisms are highly motile and burrow into the moist sand for refuge and to retard water evaporation from their bodies during aerial exposure (Barnes 1974).

8.03 Threatened or Endangered Species. In a letter dated 25 March 1993, the U.S. Army Corps of Engineers requested that the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) provide the Corps with a list of endangered or threatened species under their purview that may be present within the influence of the project area. The FWS indicated in a letter dated 14 April 1993 that the threatened loggerhead sea turtle (*Caretta caretta*) and endangered leatherback sea turtle (*Dermochelys coriacea*) may be present in the project area. The NMFS responded in a letter dated 7 May 1993 that endangered and threatened species under their purview

such as the finback (*Balaenoptera physalus*), humpback (*Megaptera novaeangliae*), right (*Eubaleana glacialis*), sei (*Balaenoptera borealis*), and sperm (*Physeter catodon*) whales are all thought to exist off the Atlantic coast of Florida during certain times of the year. Additionally, endangered turtles such as hawksbill (*Eretmochelys imbricata*), Kemp's (Atlantic) ridley (*Lepidochelys kempi*), and leatherback (*D. coriacea*) sea turtles as well as the threatened green (*Chelonia mydas*) and loggerhead (*C. caretta*) sea turtles may be found in the waters seaward of the Duval County shore.

8.04 Cultural, Historic, and Archeological Resources. An archival and literature search, in addition to coordination with the State Historic Preservation Officer (SHPO), has been conducted for the Duval County Shore Protection Project. There are no known cultural or archeological resources located on the beach that will be nourished for the proposed project. The existing offshore borrow area is approximately 8.0 miles (12.8km) offshore and has been disturbed by previous dredging activities. Because of the previous dredging activities, the borrow area is not likely to contain significant cultural resources. In a letter dated May 7, 1993, the SHPO concurred with this determination (see Appendix C).

8.05 Water Quality. The project area is a sandy, high energy coastline. The beach is predominantly quartz sand with some shell fragments. Due to the high energy conditions found along the Duval County coastline, sand is continuously resuspended in the water column with each breaking wave. This resuspension results in highly turbid conditions normally being found throughout the project area. The coastal waters in the area of the authorized work are designated by the State of Florida as Class III. Class III waters are designated as suitable for recreation and the propagation of fish and wildlife. Strict control over water quality is addressed by the Florida Department of Environmental Protection in applying specific water quality monitoring requirements during the dredging and beach fill operations stage.

8.06 Hazardous and Toxic Wastes. The coastline in the project area is located adjacent to predominantly residential and recreational areas. There are no known industrial activities in the immediate area. There are no known sources of hazardous and toxic wastes in the project area and no records of such activities in the past.

8.07 Aesthetic Resources. Aesthetics found along the project area can be valued in the moderate range. The intertidal range of the beach is wide and gradually slopes with little dune and natural vegetation left after the 1992-1993 winter storms. The residential areas consist of some backdune naturalized areas with

dune grasses, morning glory, and other native flowering groundcovers. The few commercial areas generally develop right up to the beach leaving little backdune, dune, or native vegetation present. The majority of Duval County beaches have some dunes with native vegetation present as the result of previous efforts to restore the beach through erosion control measures. This past effort greatly improved the aesthetics of the Duval County beaches.

8.08 Coastal Barrier Resources. The Coastal Barrier Resources Act of 1982 (Public Law 97-348) encouraged implementation of conservation measures on largely undeveloped coastal barrier islands along the Atlantic and Gulf of Mexico coasts. These conservation measures were designed to help conserve critical habitat for a variety of island flora and fauna. Due to the urbanization and highly developed nature of the project area, the barrier islands along the Duval County shore are not units of the Coastal Barrier Resources System.

8.09 Acoustical Quality. The project area is a favorite recreational spot for the beach residents who reside in the area as well as the tourists who temporarily reside in the high rise hotels and condominiums. Additionally, the Duval County beaches are a favorite spot for many of the residents that reside in the western portions of Duval County. Because of the urbanization of the surrounding area and the popularity that the beaches enjoy, noise levels are usually elevated during the tourist season as well as on most weekends.

8.10 Air Quality. The urbanization of the City of Jacksonville and the popularity of the beaches area all contribute to a large number of motorized vehicles being in and around the surrounding project area at any given time. Because of the sea breezes that are usually present along the Duval County shore, air quality is generally regarded as good as airborne pollutants are readily dispersed by the ocean generated winds.

8.11 Recreation. The project area is a local favorite for county residents to spend much of their leisure time sunbathing, sailing, walking, and riding bicycles, in addition to a variety of other active and passive activities. The spring, summer, and fall months of the year are the most active times with the summer months comprising the peak use period. During the winter months, the Duval County beaches are generally used by relatively few people due primarily to relatively low temperatures (40°F - 60°F) and the frequency of northeast winds which produce strong waves and high tides. The 1989 Florida Statewide Comprehensive Outdoor Recreation Plan (SCORP) states that saltwater beach activities are the most participated in outdoor recreation activity in the county.

9.00 IMPACT OF THE PROPOSED ACTION. This section provides a means of assessing the environmental impact of the authorized project on natural resources in the project area. Implementation of the no action plan, a list of alternatives, and the selected plan are all assessed for their expected environmental impact. A complete analysis of these plans can be found in the 1974 FEIS and the 1984 General Design Memorandum (GDM).

9.01 General Environmental Setting. The installation of sand trap fencing and native salt tolerant vegetation along the project area will help to control and conserve wind blown sand. Completion of the project will ensure that a wide beach exists at high tide as well as a protective sand dune system above the supralittoral zone. The new beach will have a positive impact on the existing dune system. Besides providing protection to the dunes from wave and tidal generated energy, opportunistic and salt tolerant grasses and other beach vegetation will tend to trap wind blown sand, thereby further building up the dune system in the project area. Addition of a beach and dune system will provide increased foraging habitat for many small birds, mammals, and reptiles as well as protection from storm waves and tides for residents and infrastructure of the coastline.

9.02 Fish and Wildlife Resources. During the beach renourishment construction phase, there may be some displacement of foraging and resting activities for birds as well as small mammals and reptiles that utilize the project area. This displacement will be short-term, and there exists ample areas north and south of the project area with similar characteristics that may be utilized by displaced species while construction activities are ongoing. After the initial construction, invading grasses and other beach vegetation will provide additional refuge and foraging opportunities to small rodents and reptiles. The Duval County nearshore waters are naturally turbid because of the highly dynamic physical conditions present in the area. Organisms inhabiting this shoreline must be readily adapted to these turbid conditions in order to successfully survive. Therefore, elevated turbidity levels from placement of fill material on the beach is not expected to have a significant detrimental impact to such sightfeeders as the brown pelican (*Pelecanus occidentalis*) or other shorebirds, waterfowl and wading birds.

The inhabitants of the intertidal zone typically possess high fecundity and rapid turnover rates during the summer breeding season. Populations of the mollusk, *Donax variabilis*, and the crustacean, *Acanthohaustorius pangsus*, in areas of beach nourishment usually become numerically abundant once again after six months most likely from littoral transport of larvae from adjacent areas (Mikkelsen 1981). Because of this, long term impacts to infaunal invertebrates inhabiting the intertidal zone

along the beaches of Duval County are not expected to be significant. The highly visible decapod crustaceans of the Duval County supralittoral zone such as the ghost crab (*Ocypode quadrata*), mole crab (*Emerita talpoida*), and the Atlantic fiddler crab (*Uca pugilator*) are all highly motile organisms and are easily adapted to avoiding unacceptable environmental conditions. Reilly and Bellis (1978, 1983) have concluded that direct burial by beach nourishment activities is not a major mortality source as these crabs are able to actively avoid the nourished area or burrow up through the overburden material, if necessary. Marsh and Turbeville (1981) examined benthic communities near Hallandale Beach, Florida, seven (7) years after a beach nourishment project and concluded that no long term effects were observed for the infaunal benthos. Cutler and Mahadeven (1982) found no significant differences in biotic communities between borrow sites and surrounding areas off of Panama City, Florida, some 3-4 years after a beach nourishment project. Gorzelany (1983) found no evidence that a beach nourishment project of Indiatlantic and Melbourne Beach, Florida, had any negative effect of the nearshore infaunal communities in that area. Saloman and Naughton (1984) saw no significant numerical differences in biological communities between beach deposition and non-deposition areas after six (6) weeks following beach fill operations off Panama City, Florida. In summary, no long term adverse impacts are expected to organisms in the supralittoral or intertidal zone from the Duval County Shore Protection Project.

9.03 Threatened or Endangered Species. Sea turtles are organisms of major concern as they utilize the supralittoral zone for nesting activities and the nearshore areas for foraging. Providing the eroding shoreline of Duval County with beach fill will result in widening the beach berm and increasing the beach area that is available to nesting threatened and endangered species. The possible impacts to nesting sea turtles are thoroughly discussed in a Biological Assessment (BA) sent to the U.S. Fish and Wildlife Service on 26 May 1993 (refer to Appendix C). As reported by Conley and Hoffman (1986), between 1982-1985, an average of 5 nests were successfully dug each year in the vicinity of Katherine Ann Hanna State Park (Figure 3) and 17 nests at Little Talbot Island (Figure 1). Both of these areas are outside the project influence. In a letter dated 9 June 1993, the National Marine Fisheries Service reported that in 1992, 11 successful nests were dug by loggerhead sea turtles (*Caretta caretta*) in the Atlantic-Jacksonville Beach area. Another 11 loggerhead sea turtle (*C. caretta*) nests were documented for nearby Little Talbot Island State Park in 1992. Because seagrass and hardbottom habitats (Figure 5) that are required for foraging are lacking, it is unlikely that sea turtles spend significant portions of their life cycle in the nearshore waters off of Duval County. Furthermore, the National Research Council has determined that beach nourishment activities

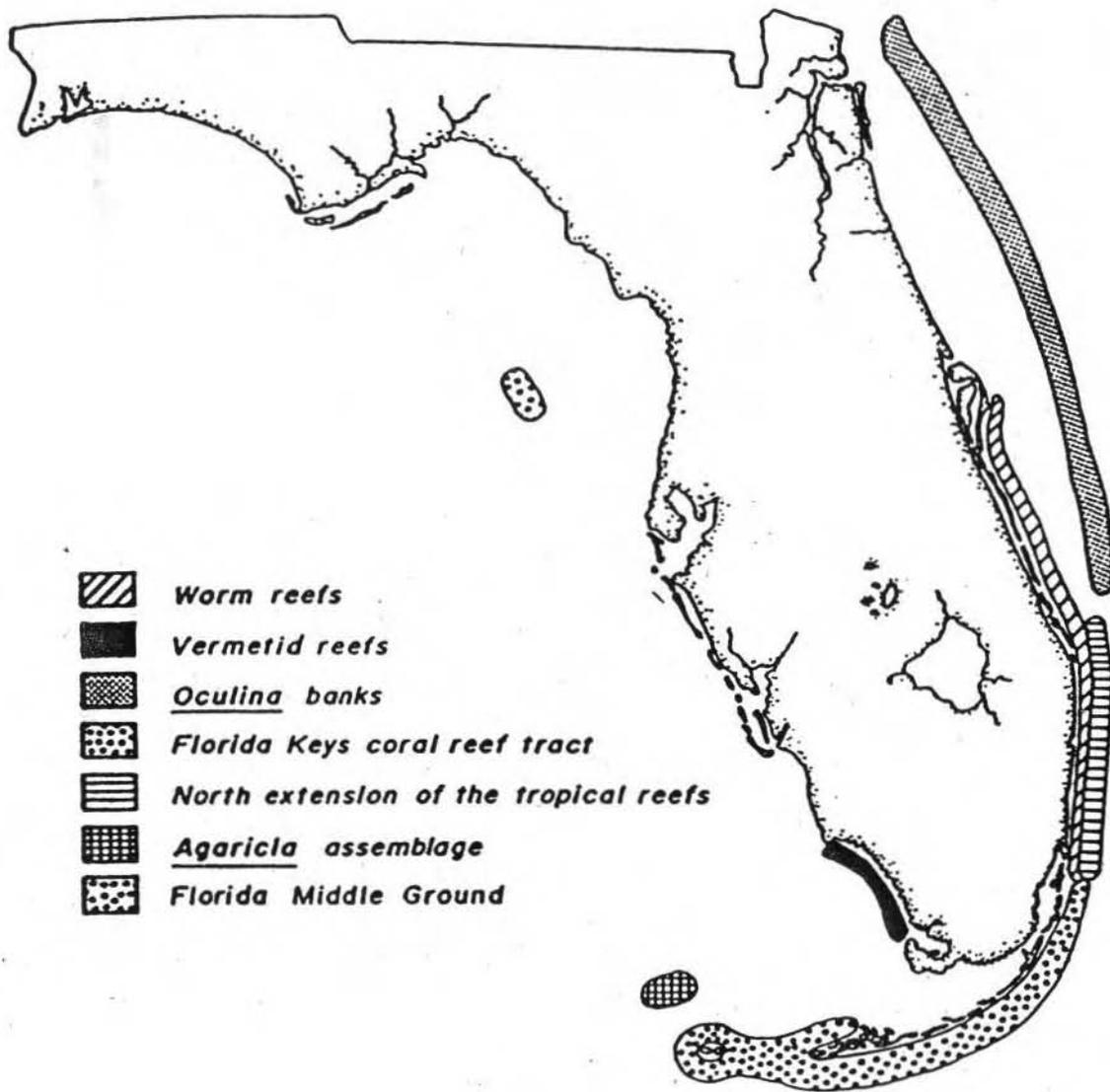


Figure 5. Distribution of Florida reef assemblages. Map units describe extent of potential habitat distribution; actual occurrences are often disjunct (patchy).

SOURCE: Japp, W. C. and P. Hallock. 1990. Coral Reefs. IN: R. L. Myers and J. J. Ewel (eds.). P. 574 - 616. Ecosystems of Florida. University of Central Florida Press. Orlando.

presents a "low" to "unimportant" mortality risk at various stages of a sea turtle's life cycle (Table 1). An excellent primer on the impacts of beach nourishment and sea turtle ecology and nesting can be found in Nelson (1985), Nelson and Dickerson (1988), and the National Research Council (1990). To ensure that the project will have little to no impact to nesting sea turtles, special precautions to protect nesting sea turtles and their emerging hatchlings will be undertaken with the prior approval of the U.S. Fish and Wildlife Service. These special precautions are listed in Section 10.00 of this EA.

Leatherback sea turtles (*Dermochelys coriacea*) frequently are spotted migrating northward past the Duval County coast during the winter months. As none of the 87 nests recorded along 167.7 kilometers of Florida beach occurred in Duval County in 1985 (Conley and Hoffman 1986), this project will not present any adverse impact to nesting leatherback sea turtles (*D. coriacea*). The possible adverse impact to this species would be from boat traffic moving between the offshore borrow area (Figure 4) and the beach fill area. As described in the Biological Assessment (BA) sent to the National Marine Fisheries Service (NMFS) on 26 March 1993 (refer to Appendix C), special precautions taken aboard moving vessels will considerably lessen the likelihood of any collisions between the sea turtles and the vessels. These special precautions are listed in Section 10.00 of this EA.

The only known calving ground of the North Atlantic right whale (*Eubaleana glacialis*) is located off the coast of Florida, Georgia, and South Carolina (Slay 1992). The calving season for this species in northeastern Florida usually occurs between November-March (Slay 1992). It is the migratory patterns of these cetaceans between the winter calving grounds of the southeastern United States and the summer feeding grounds of Maritime Canada that make them most vulnerable to collisions with moving vessels. From the best available evidence, collisions with moving vessels are the most common human-induced mortality among the above mentioned cetacean species in the southeastern United States (Slay 1992). Efforts to eliminate or significantly reduce the potential impacts of boat collisions with cetaceans is thoroughly described in the BA sent to the NMFS and are listed in Section 10.00 of the EA.

9.04 Cultural, Historic, and Archeological Resources. As stated in paragraph 8.04, there are no known cultural resources located within the area of impact for the Duval County Shore Protection Project.

9.05 Water Quality. During project construction, an insignificant increase in turbidity in the immediate area can be expected due to the beach fill operations. As the background

Sea Turtle Mortality Associated with Human Activities

TABLE 1. A qualitative ranking of the relative importance of various mortality factors on juveniles or adults, eggs, and hatchlings with an indication of mortality caused primarily by human activities. Sources are listed in order of importance to juveniles or adults, because this group includes the life stages with greatest reproductive values.

Source of Mortality	Primarily Human Caused	Life Stage		
		Juveniles to Adults	Eggs	Hatchlings
Shrimp trawling	yes	high	none	unimportant
Other fisheries	yes	medium to low	none	unimportant
Non-human predators	no	low	high	high
Weather	no	low	medium	low
Beach development	yes	low	medium	low
Disease	no	low	unimportant	low
Dredging	yes	low	unimportant	unimportant
Entanglement	yes	low	unimportant	low
Oil-platform removal	yes	low	none	unimportant
Collisions with boats	yes	low	none	unimportant
Directed take	yes	low	medium	unimportant
Power plant entrainment	yes	low	none	unimportant
Recreational fishing	yes	low	none	unimportant
Beach vehicles	yes	low to unimportant	medium	unimportant
Beach lighting	yes	low to unimportant	unimportant	medium
Beach replenishment	yes	unimportant	low	low
Toxins	yes	unknown	unknown	unknown
Ingestion of plastics, debris	yes	unknown	none	unknown

SOURCE: National Research Council. 1990. Decline of the Sea Turtles Causes and Prevention. National Academy Press, Washington.

conditions in the project area are naturally turbid due to the dynamic physical conditions of the area, this elevated increase in turbidity will be a temporary condition and is not expected to present any detrimental impact to organisms in the nearshore zone.

9.06 Hazardous and Toxic Wastes. The project will not involve placement, use or storage of hazardous and toxic materials in or near the project area. All wastes and refuse generated by the project will be properly stored and removed when the project activities are completed.

9.07 Aesthetic Resources. With the project construction, additional sand will be present which will help improve the aesthetic resources of the Duval County beaches. The project will restore parts of the beaches which were severely eroded during the 1992-1993 winter by high tides, storm generated waves, and heavy winds. Beach armorment was exposed during that time period which had been previously covered since its construction many years ago. Dune areas will be restored to a more natural appearance which will greatly improve the aesthetic values of the Duval County beaches.

9.08 Coastal Barrier Resources. The project area is not part of the Coastal Barrier Resources System.

9.09 Acoustical Quality. The immediate project area may experience an increase in noise levels during the beach fill construction phase. Construction equipment will be properly maintained in order to minimize the effects of noise. The elevated noise levels will be localized in nature and will not persist because of the brief, temporary nature of the construction activity.

9.10 Air Quality. There will be no long term accumulation of particulates in the project area because offshore sea breezes are likely to disperse pollutants away from the barrier island and the construction activity is brief and temporary in nature. No air quality permits are required for this permit.

9.11 Recreation. Once the Duval County beach renourishment project is complete, the beach will contain a larger sand berm which will provide more space for both active and passive saltwater beach recreation activities. A wider sand berm along the beach will provide for improved family oriented recreation activities which is a significant tourist and county resident attraction. The additional sand will also function to help separate active and passive recreational activities.

10.00 ENVIRONMENTAL COMMITMENTS.

The U.S. Army Corps of Engineers and contractors commit to avoiding, minimizing, or mitigating for adverse effects during construction activities by including the following commitments in the contract specifications:

(1) Inform contractor personnel of the potential presence of whales, sea turtles, and manatees in the borrow and/or beach fill areas, their endangered status, the need for precautionary measures, and the Endangered Species Act prohibition on taking and harassing sea turtles and manatees. ✓

(2) Take precautions during transport from the offshore borrow area to the beach fill area to avoid collisions with sea turtles, manatees, and whales. Vessels transporting personnel between offshore and nearshore areas shall follow routes of deep water whenever possible. A lookout will be posted on all dredge and support ships operating offshore between November-March to minimize potential collisions with sea turtles and whales. If vessels operate after sunset and before the next sunrise, low sodium lights will be installed aboard these vessels in order to reduce the possibility of taking sea turtles. ✓

(3) The project beach will be visually inspected each morning between May 1 - October 30. If beach construction activities are undertaken between May 1st and October 30th, any sea turtle nest found in an area that is to be renourished will be relocated between sunrise and 09:00 a.m. each day to a safer beach location or hatchery. Nest surveys and relocations will be conducted by personnel with prior experience and training in these procedures and with a valid Florida Department of Environmental Protection permit.

(4) Compaction of the beach will be monitored immediately prior to beach construction activities. Immediately following completion of any beach segment renourished prior to May 1st, cone penetrometer readings will be taken at thirty (30) randomly selected areas to determine sand density (compaction) and shear resistance (hardness). Sand compaction readings will be taken at 6, 12, and 18 inch (15, 30, and 45 centimeter) depths. Should the renourished sand be impenetrable or average cone penetrometer readings exceed 500 cone penetrometer index units (cpu), tilling the sand to a depth of 36 inches will be immediately undertaken. The identical procedure will be followed after the completion of the remainder of the beach segments that has been renourished after May 1st. Sand compaction will be monitored just prior to sea turtle nesting season (April) for a period of three years after the project is completed. The Jacksonville Field Office of the U.S. Fish and Wildlife Service and the Florida Department of Environmental Protection will be provided with an annual report of the beach compaction testing.

(5) Any escarpment in excess of 12 inches (30cm), longer than 30 yards (27m), and exceeding 500 cu yds will be mechanically leveled to the natural beach contour just prior to May 1st. Since the Duval County beaches are heavily used by the public, beach cleaning equipment will slope steep drop offs as part of their regular morning activities (if necessary).

(6) If any nest is relocated to a safer beach location, a report describing the actions taken, description of nest location, and names and qualifications of personnel involved in the nest survey and relocation will be submitted to the U.S. Fish and Wildlife Service, Jacksonville Field Office within 60 days after completion of the beach renourishment project.

(7) Any incident involving a death or injury to any endangered or threatened species shall be immediately reported to the U.S. Army Corps of Engineers, National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the Florida Department of Natural Resources for investigation so the most appropriate course of action can be taken.

(8) Turbidity shall be monitored at the beach fill nearshore area. Should monitoring reveal turbidity levels above State standards (> 29 NTU's above background), construction activities will be immediately suspended until turbidity levels return to within acceptable standards as specified in the State water quality permit.

The commitments to ensure the safety of threatened and endangered nesting sea turtle are discussed in more detail in the U.S. Fish and Wildlife Service's 25 October 1993 Biological Opinion (Appendix C).

11.00 COMPLIANCE WITH ENVIRONMENTAL STATUTES.

11.01 National Environmental Policy Act of 1969, as amended. Environmental information on this authorized project has been compiled and the interested public will be notified that this Environmental Assessment has been prepared in accordance with the National Environmental Policy Act.

11.02 Endangered Species Act of 1973, as amended. A list of endangered, threatened, proposed, or candidate species was received from the U.S. Fish and Wildlife Service (FWS) dated April 14, 1993, and from the National Marine Fisheries Service (NMFS) dated May 7, 1993. A Biological Assessment was sent to the NMFS on May 26, 1993, and consultation was completed with NMFS with receipt of a letter dated June 9, 1993, concurring with the Corps' environmental conclusion that no species under the purview of NMFS will be impacted. A Biological Assessment was

sent to the FWS on May 26, 1993, and consultation with the Corps was completed with receipt of a Biological Opinion (BO) from the FWS dated 25 October 1993. This project has been fully coordinated under the Endangered Species Act; therefore, this project is in full compliance with the Act.

11.03 Fish and Wildlife Coordination Act of 1958, as amended. As has been cited in Paragraph 9.02, the proposed renourishment is not expected to significantly impact infaunal or epifaunal invertebrates or motile ichthyofauna. In the most recent correspondence dated 20 December 1991 (Appendix C), the U.S. Fish and Wildlife Service has advised the Corps that no adverse impacts to fish and wildlife resources are expected to occur from implementation of this project. The environmental concerns related to this project have been coordinated with the U.S. Fish and Wildlife Service; therefore, this project is in full compliance with this Act.

11.04 National Historic Preservation Act of 1966, as amended (PL 89-665). Cultural resources considerations and coordination are in accordance with the National Historic Preservation Act of 1966, as amended. No known resources listed on or eligible for listing on the National Register of Historic Places will be adversely affected by dredging activities and placement of material on the beach at Duval County.

11.05 Clean Water Act of 1972, as amended. All State water quality standards will be met. A Section 404(b) Evaluation is included in this report as Appendix A.

11.06 Clean Air Act of 1972, as amended. No permits will be required for this project. Full compliance will be achieved with receipt of comments on the EA from the U.S. Environmental Protection Agency.

11.07 Coastal Zone Management Act of 1972, as amended. The study is in partial compliance at this time. Full compliance will be achieved with receipt of comments from the State Clearinghouse. A federal consistency determination is included in this report as Appendix B.

11.08 Farmland Protection Policy Act of 1981. No prime or unique farmland will be impacted by implementation of this project. This act does not apply.

11.09 Wild and Scenic River Act of 1968, as amended. No designated Wild and Scenic river reaches will be affected by project related activities. This act does not apply.

11.10 Marine Mammal Protection Act of 1972, as amended. Incorporation of the safeguards used to protect threatened or endangered species during dredging and disposal operations will also protect any marine mammals in the area; therefore, this project is in compliance with the Act.

11.11 Estuary Protection Act of 1968. No designated estuary will be affected by project activities. This act does not apply.

11.12 E.O. 11990, Protection of Wetlands. No wetlands will be affected by project activities. This project does not apply to the goals addressed in this Executive Order.

11.13 E.O. 11988, Floodplain Management. No activities associated with this project will take place within a floodplain; therefore this project does not apply to the goals addressed in this Executive Order.

12.00 COORDINATION. This authorized project has been coordinated with the following Federal and State agencies: U.S. Fish and Wildlife Service, National Marine Fisheries Service, U.S. Environmental Protection Agency, Florida State Historic Preservation Officer (SHPO), and Florida Department of Environmental Protection. This document will be sent to the interested parties listed on the mailing list found in Appendix C.

13.00 PUBLIC INVOLVEMENT. Scoping was initiated by letter dated April 7, 1993, to potentially interested parties stating that an EA will be prepared. Notice of completion of this EA will be sent to interested parties.

14.00 LIST OF PREPARERS. This EA was prepared by the following U.S. Army Corps of Engineers personnel:

Robert J. Brock, Biologist and principal author
Janice E. Adams, Archeologist
Paul C. Stevenson, Landscape Architect
Glenn R. Schuster, Environmental Engineer

15.00 LIST OF REVIEWERS. This EA was reviewed by:

Dr. Rona S. Mazer, Chief, Environmental Coordination Section
Dr. Hanley K. Smith, Chief, Environmental Branch

16.00 REFERENCES.

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17.00 APPENDICES

1. Appendix A - Section 404(b) Evaluation
2. Appendix B - Florida Coastal Zone Management Program Federal Consistency Evaluation
3. Appendix C - Pertinent Correspondence
4. Appendix D - Aquatic Species List

Appendix A

**Section 404(b) Evaluation Report
Duval County Shore Protection Project
Third Renourishment for Reaches 2-3-4
Duval County, Florida**

**SECTION 404 (b) EVALUATION REPORT
DUVAL COUNTY SHORE PROTECTION PROJECT
THIRD RENOURISHMENT FOR REACHES 2-3-4
DUVAL COUNTY, FLORIDA**

I. Project Description

a. Location. Duval County is located in the extreme northeastern corner of Florida along the Atlantic Ocean. The Duval County shore is separated from the western mainland portion of the county by the Intracoastal Waterway. The Atlantic shore of the county consists of a barrier island bounded to the north by Nassau Sound and the St. Johns River, to the west by the Intracoastal Waterway, to the east by the Atlantic Ocean, and to the south by St. Johns County and the community of Ponte Vedra Beach.

b. General Description. The authorized project requires that periodic nourishment along the ocean frontage just south of the U.S. Naval Station at Mayport and the areas of Kathryn Abbey Hanna Park, and the towns of Atlantic Beach, Neptune Beach, and Jacksonville Beach be undertaken as needed. Reaches 3 & 4 includes the area from Atlantic Avenue in the town of Atlantic Beach south to the St. Johns County line. Reach 2 is located north of Atlantic Boulevard. These areas were initially nourished with beach compatible sand between 1978-1980 and were renourished between 1986-1987. The current project calls for Reach 2 to be renourished with approximately 322,000 cubic yards of beach compatible material and Reaches 3 and 4 renourished with approximately 1,400,000 cubic yards of beach compatible sand in 1994.

c. Authority and Purpose. The 10 miles (16 kilometers) of Atlantic shoreline between the St. Johns River to the north and the Duval County-St. Johns County line to the south was authorized as a shore protection project with periodic renourishment. The project was authorized by Section 301 of the River and Harbor Act of 1965 (Public Law 89-298) on 27 October and is described in House Document 273/89/1. The purpose of renourishing the eroded beach along the Duval County Atlantic shoreline is to provide protection from storm generated waves and tides for development and infrastructure located along the coast as well as to restore a very important recreation area.

d. General Description of Dredged or Fill Material

(1) General Characteristics of Material.

(2) Quantity of Material. It is estimated that the erosive beach found between Atlantic Boulevard and southward to the St. Johns County line will be renourished with approximately 1,200,000 cubic yards of beach compatible material.

(3) Source of Material. The beach compatible material will be obtained from a borrow area located approximately 8.0 miles (12.8 km) northeast of Jacksonville Beach, Florida. This borrow site was used in the past for the 1980 initial nourishment of the project areas and subsequent renourishment in 1986-1987.

e. Description of the Proposed Discharge Site

(1) Size and Location. The authorized beach fill site is an erosive beach located along the Duval County Atlantic shoreline. The 1965 authorization provides for initial beach fill and periodic renourishment for a 10 mile (16 km) segment between the south jetty of the St. Johns River and the Duval County - St. Johns County line. The 1990 Section 934 Reevaluation Report recommends that the eroded beach berm be restored to a width of 75 feet (22.7m) and a berm elevation of 11 feet (3.3m) above mean low water.

(2) Type of Site. Currently, the project area is a barrier island with a seriously eroding beach.

(3) Type of Habitat. The habitat currently found in the proposed project area consists of an eroding dune system and sandy beach. The erosive beach extends from just south of the entrance to the St. Johns River southward to the St. Johns County line. Seaward of the eroding beach, the submerged substrate consists entirely of sand.

(4) Timing and Duration of Discharge. Construction of the beach nourishment project is anticipated to begin during the spring (March-April) of 1994. It is currently estimated that it will take one month to mobilize and demobilize the necessary equipment. Once construction of the beach renourishment project commences, it will take approximately five months to complete the proposed project.

f. Description of Disposal Method. It is anticipated that material will be obtained from the offshore borrow site with the aid of a hopper type dredge with pumpout capability. Once the

beach compatible material is pumped onto the project beach, minor grading by will be implemented by construction machinery to achieve the desired construction profile.

II. Factual Determinations

a. Physical Substrate Determinations.

(1) Substrate Elevation and Slope. The authorized project area for all of the Duval County Atlantic shoreline is approximately 10 miles (16 km) long. The design for the beaches of Duval County was based on a protective beach obtained by restoration and future renourishment. The original project berm design elevation of 11.0 feet (3.3m) above mean low water remains the design berm height. Based on maximization of primary benefits, the selected plan of a berm width of 75 feet (22.7m) provides the optimum benefits at most economical costs. Based on initial fill of the beaches and subsuquent renourishment activities, it is estimated that the estimated slopes will be 1 vertical to 20 horizontal from the top of the berm to mean high water, 1 vertical to 30 horizontal to mean low water, and 1 vertical to 45 horizontal out to closure depth.

(2) Sediment Type. The sand dredged from the offshore borrow area is gray quartz, fine to medium grain, well sorted, and ranges from clean to slightly silty. Based on information obtained from 1977 geologic records, the composite phi-mean of the borrow area sand is 1.826 (0.282 mm) and the phi-sorting is 0.476.

(3) Dredge/Fill Material Movement. The principal mode of sand movement away from the erosive beach is caused by littoral transport of sand in a southerly direction. This transport of sand in a southerly direction is greatest during periods of strong northeast winds and accompanying high waves. The northeast winds dominate in generation of distructive waves, due to their long uninterrupted fetch. Sand to the project area is not replentished from the sand sources in the north due to the interception of the sand movement by the St. Johns River jetties.

(4) Physical Effects on the Benthos. Non-motile benthic infaunal invertebrates found in the offshore borrow area will be directly impacted by the dredging operations through excavation. These organisms will be destroyed by the dredging machinery. Benthic organisms found in the intertidal areas at the beach fill site will be directly and indirectly affected by burial of sand during the beach renourishment activities. The benthic organisms (principally crustaceans) found in this intertidal swash zone are readily adapted to being buried as many of these organisms are

buried with each receding wave. As is the case with bivalve mollusks, these organisms tend to possess a strong foot which enables them to burrow up through the sand. Many of the dominant intertidal amphipods possess strong appendages which enable them to move quickly through sand. As intertidal organisms are adapted to highly stressful environmental conditions and tend to be highly fecund individuals, these populations are expected to repopulate their communities within 6 to 18 months after construction activities have ceased. A pre- and post-construction infaunal sampling program will be undertaken to assess any possible statistical changes in the infaunal community structure along the Duval County shore.

b. Water Circulation, Fluctuation and Salinity Determinations

(1) Water. The placement of beach compatible material may increase turbidity in the immediate project area during the construction phase. This phenomenon is expected to be short-term and temporary. No significant long term increase in turbidity is expected to occur as a result of this project.

(a) Salinity. The beach fill material will not present any changes to the nearshore salinity.

(b) Water Chemistry. No changes in the chemical makeup of the nearshore environment is anticipated.

(c) Clarity. There may be a slight insignificant increase in turbidity seaward of the revetment under specific hydrodynamic conditions caused by storm waves.

(d) Color. There will be no change in color of the nearshore waters.

(e) Odor. The clean beach material used to construct the renourished beach will present no adverse odors to the surrounding area.

(f) Taste. This is not applicable to the project.

(g) Dissolved Gas Levels. The project will not impact the chemistry of the nearshore waters.

(h) Nutrients. The project is not expected to have any impact on either the micronutrient or macronutrient concentrations of the nearshore waters.

(1) Eutrophication. No buildup of macronutrients in the project area is expected.

(2) Current Patterns and Circulation.

(a) Current Patterns and Flow. As the authorized project involves renourishment of an existing beach that is currently in place, no change to current patterns in the general area is expected.

(b) Velocity. No changes in the movement of water are anticipated.

(c) Stratification. This is not applicable to the project.

(d) Hydrologic Regime. The project would have no adverse impact.

(3) Normal Water Level Fluctuations. The project would have no adverse impact. The beach fill and widened beach will provide protection from storm waves and tides.

(4) Salinity Gradients. Salinity in the project area is likely at or slightly below (due to freshwater inputs from the Intracoastal Waterway and the St. Johns River) open ocean levels. The project would have no impact on the salinity regime of the area.

c. Suspended Particulate/Turbidity Determinations.

(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site. The proposed project calls for disposal of beach compatible material from just south of the naval base at the St. Johns River southward to the Duval County - St. Johns County line. There may be a temporary increase in turbidity levels in the project area during the construction phase. Increases in turbidity will be short-term and localized and no significant long term adverse impacts are expected. State water quality standards for turbidity will not be exceeded.

(2) Effects on Chemical and Physical Properties of the Water Column.

(a) Light Penetration. There may be a slight suppression of light penetration during the construction phase as quarrystone rock is being placed on the erosive bank. No significant long term adverse impacts seaward of the renourished beach are anticipated.

(b) Dissolved Oxygen. There will be no impact on dissolved gas levels.

(c) Toxic Metals. Clean beach compatible material will not have any impact on particulate or dissolved toxic metal concentrations.

(d) Pathogens. No pathogenic material is expected to be involved with the project.

(e) Aesthetics. Aesthetic quality will be reduced during the period when construction is taking place, but this will be a short-term temporary condition. The placement of clean beach compatible material onto an erosive beach will likely improve the aesthetic quality of the immediate area.

(3) Effect on Biota.

(a) Primary Production/Photosynthesis. No adverse impacts are anticipated.

(b) Suspension/Filter-Feeders. An increase in turbidity would adversely impact burrowing invertebrate filter-feeders. However, the Duval County shoreline is naturally turbid because of the dynamic physical processes found there. Benthic organisms have had to adapt to taking in suspended sediment, sand, with other debris along with nutrition into their incurrent siphons. It is not expected that a short-term, temporary increase in turbidity will have any long term negative impact on these highly fecund organisms.

(c) Sight Feeders. No significant impacts on these organisms are expected as the majority of sight feeding organisms are highly motile and can seek optimum environmental conditions elsewhere. Furthermore, waters of coastal Duval County are naturally turbid due to the highly dynamic conditions present. Because of this, sight feeders such as predatory fish and wading birds are already adapted to surviving in such an environment.

d. Contaminant Determinations. The fill material collected from the offshore borrow area will resemble the material currently found on the beach as closely as possible. As the beach compatible material is expected to be free of contaminants, constructing the beach fill sections will not introduce, relocate or increase contaminants in nearshore waters.

e. Aquatic Ecosystem and Organism Determinations.

(1) Effects on Plankton. No adverse impacts on autotrophic or heterotrophic organisms are anticipated.

(2) Effects on Benthos. No adverse long term impacts on non-motile or motile invertebrates are anticipated. Any impact to the meiofauna is expected to be temporary in nature and statistically insignificant.

(3) Effects on Nekton. No adverse impacts to the highly motile nektonic species are expected from construction of the authorized project.

(4) Effects on Aquatic Food Web. No adverse long term impact to any trophic group in the food web is anticipated.

(5) Effects on Special Aquatic Sites.

(a) Sanctuaries and Refuges. No adverse impact is expected.

(b) Wetlands. There is no wetland habitat located along or seaward of the authorized project area.

(c) Vegetated Shallows. Because of the highly dynamic nature and high turbidity conditions naturally found along the Duval County nearshore, there are no submerged aquatic vegetation present along the project site. A recent visual inspection of the intertidal area revealed that all of the nearshore substrate consists entirely of sand.

(d) Coral Reefs. There are no scleractinian or gorgonian corals located along the nearshore in northeastern Florida.

(6) Threatened and Endangered Species. In a letter dated 25 March 1993, the U.S. Army Corps of Engineers requested that the U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) provide the Corps with a list of

endangered and threatened species under their purview that may be present in the offshore borrow area or along the beach fill area. In accordance with Section 7 of the Endangered Species Act, the Corps issued a Biological Assessment (BA) on 26 May 1993 concluding that no endangered or threatened species under the purview of the FWS and NMFS would be negatively impacted by implementation of the authorized project. In a letter dated 9 June 1993, the NMFS concurred with the Corps' assessment that implementation of the proposed project would not adversely impact any threatened or endangered species under their purview. In a letter dated 21 July 1993, the FWS declared that the project may affect endangered and threatened species under their purview and suggested that formal consultation be initiated with the Service. The Corps' began formal consultation with the Service on 13 August 1993 with the issuance of a Biological Assessment. A Biological Opinion was issued by the Service on 25 October 1993 and the Corps has agreed to include any concerns of the FWS into the project's Plans and Specifications (refer to Appendix C).

(7) Other Wildlife. No adverse impacts to small foraging mammals, reptiles, or wading birds are expected.

(8) Actions to Minimize Impacts. All practical safeguards will be taken during construction to preserve and enhance aesthetic, recreational, and economic values in the project area.

f. Proposed Disposal Site Determinations.

(1) Mixing Zone Determination. The clean beach compatible material to be placed upon the erosive beach will not cause unacceptable changes in the mixing zone water quality requirements as specified by the Florida Department of Environmental Protection Water Quality Certification permit procedures. No adverse impacts related to depth, current velocity, direction and variability, degree of turbulence, stratification, or ambient concentrations of constituents are expected from implementation of the proposed project.

(2) Determination of Compliance with Applicable Water Quality Standards. Class III State water quality standards will not be violated.

(3) Potential Effects on Human Use Characteristics.

(a) Municipal and Private Water Supply. No municipal or private water supplies will be affected by the implementation of the project.

(b) Recreational and Commercial Fisheries. No adverse impacts to any fishery located seaward of the project area are anticipated.

(c) Water Related Recreation. Protecting oceanfront development and infrastructure and retarding erosional processes of areas behind the erosive shoreline can only contribute to assuring that recreational opportunities in and around the beach areas may be allowed to continue in the immediate project area.

(d) Aesthetics. A temporary decrease in aesthetics will only occur during the construction phase of the project. However, the stabilization of an eroding shoreline will ensure that the oceanfront and accompanying aesthetic quality will be present in the future.

(e) Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves. No such designated sites are located within the confines of the project area.

g. Determination of Cumulative Effects on the Aquatic Ecosystem. The construction activity of placing beach compatible material along an erosive shoreline will have no cumulative negative impacts that would result in degradation of the natural, cultural, or recreational resources in and around the project area. The authorized project will have no cumulative impacts that would result in major impairment of water resources nor will it interfere with the productivity and water quality of the existing aquatic ecosystem.

h. Determination of Secondary Effects on the Aquatic Ecosystem. No secondary adverse effects are expected.

III. Findings of Compliance or Non-Compliance With the Restrictions on Discharge.

1. No significant adaptations of the Section 404 (b) guidelines were made relative to this evaluation.

2. The No Action Plan as well as several nonstructural and structural project alternatives were considered for adoption. Placing beach compatible material on an erosive beach satisfactorily meets the study objective and produces the most favorable net economic benefits for the project area.
3. Placing beach compatible material on an erosive beach will not cause or contribute to violation of any applicable State water quality standards for Class III waters.
4. There will be no discharge of toxic fill material in the proposed project area. Therefore, the project complies with Section 307 of the Clean Water Act.
5. The placing beach compatible material on an erosive beach will not jeopardize the continued existence of any species listed as threatened or endangered or result in the likelihood of destruction or adverse modification of any critical habitat as specified by the Endangered Species Act of 1973, as amended.
6. There will be no adverse impact on the water supply of the Duval County oceanfront from the implementation of this project.
7. There will be no direct or indirect adverse impact on any threatened or endangered organism from the construction of this project.
8. There will be no adverse impact on any autotrophic organism from the implementation of the selected plan.
9. There will not be a direct or indirect adverse impact on highly motile organisms such as fish and crustaceans.
10. No long-term significant direct or indirect adverse impacts are anticipated on non-motile infaunal organisms or motile epifaunal organisms in the immediate project area from the proposed project.
11. No significant adverse impacts are anticipated on terrestrial wildlife in the immediate project area.
12. Implementing the project will pose no threat to juvenile fish or wildlife dependent upon the immediate project area for their subsistence.
13. No significant or long-term change in biodiversity of the communities found along the intertidal or nearshore zones is expected due to the implementation of this

project. Neither primary nor secondary productivity in the project area will be adversely impacted by the placement of beach compatible material onto an eroding beach.

14. One of the primary goals of this project is to protect oceanfront infrastructure as well as business and housing development from storm energy as well as to retard erosional processes which pose a threat to recreational opportunities along the northeastern Florida Atlantic shoreline. The protection that the wide beach affords is expected to contribute to positive economic gains in the area due to the preservation of beachfront development and accompanying infrastructure.
15. There will be disposal of beach compatible material onto an erosive beach in the project area. All appropriate steps will be taken to ensure that construction equipment doesn't adversely impact the surrounding landscape which currently exists around the immediate project area.
16. On the basis of the guidelines, the proposed disposal site for the discharge of beach compatible material is specified as complying with the requirements of the Clean Water Act.

Appendix B

**Florida Coastal Zone Management Program
Federal Consistency Evaluation Procedures
Duval County Shore Protection Project
Third Renourishment for Reaches 2-3-4
Duval County, Florida**

**FLORIDA COASTAL ZONE MANAGEMENT PROGRAM
FEDERAL CONSISTENCY EVALUATION PROCEDURES
DUVAL COUNTY SHORE PROTECTION PROJECT
THIRD RENOURISHMENT FOR REACHES 2-3-4
DUVAL COUNTY, FLORIDA**

1. Chapter 161, Beach and Shore Preservation.

The intent of the coastal construction permit program established by this chapter is to regulate construction projects located seaward of the line of mean high water and what might have an effect on natural shoreline processes.

Response: The primary purpose of the authorized project is to provide protection from wave and tidal energy for residences, businesses, and infrastructure located along the shoreline of Duval County, Florida. Consideration is given during the planning process to possible impacts upon natural coastal processes, natural vegetation, biological resources, and adjacent property. The goals set forth in this chapter have been met through consultation and communication with appropriate Federal, State, and local agencies.

2. Chapters 186 and 187, State and Regional Planning.

These chapters establish the State Comprehensive Plan which sets goals that articulate a strategic vision of the State's future. It's purpose is to define in a broad sense, goals, and policies that provide decision-makers directions for the future and provide long-range guidance for an orderly social, economic and physical growth.

Response: This authorized project has been coordinated with various Federal, State, and local agencies soliciting their input during the planning process. The authorized project meets the primary goal of the State Comprehensive Plan through beach preservation and protection of shorefront development and infrastructure.

3. Chapter 252, Disaster Preparation, Response and Mitigation.

This chapter creates a state emergency management agency, with the authority to provide for the common defense; to protect public peace, health and safety; and to preserve the lives and property of the people of Florida.

Response: The authorized project involves the placing of beach compatible material onto an eroding beach as a protective means for residents, development, and infrastructure located along the Atlantic shoreline of Duval County. The placement of beach compatible material currently represents the most appropriate

long term, low cost solution to help protect the shoreline and adjacent development and roadways from destructive erosional processes caused by wind and storm generated waves. This authorized project is therefore consistent with the efforts of the Division of Emergency Management.

4. Chapter 253, State Lands.

This chapter governs the management of submerged state lands and resources within state lands. This includes archeological and historical resources; water resources; fish and wildlife resources; beaches and dunes; submerged grass beds and other benthic communities; swamps, marshes and other wetlands; mineral resources; unique natural resources; submerged lands; spoil islands; and artificial reefs.

Response: An archival search and a literature review, including the current National Register of Historic Places listing, have been conducted. No known historic, cultural, or archeological resources are present in the vicinity of the area of proposed impact. The authorized project is necessitated because of the seriously eroded condition of much of the shorefront of Duval County. There are no known physical, geological, or biological characteristics that are exclusively unique to the authorized project area. This authorized project complies with the intent of this chapter.

5. Chapters 253, 259, 260, and 375, Land Acquisition.

This chapter authorizes the state to acquire land to protect environmentally sensitive areas.

Response: The submerged area seaward of the Duval County mean high water line does not contain any unique or environmentally sensitive areas. Since the affected property already is in public ownership, this chapter does not apply.

6. Chapter 258, State Parks and Aquatic Preserves.

This chapter authorizes the state to manage state parks and preserves. Consistency with this statute would include consideration of projects that would directly or indirectly adversely impact park property, natural resources, park programs, management or operations.

Response: The area from Atlantic Boulevard southward to the St. Johns County line (Reaches 3 and 4) does not contain any state parks or preserves. Huguenot Memorial Park (4.1 acres) and Kathryn Abbey Hanna Park (450 acres) are both located just north

of Atlantic Boulevard (Reach 2). The renourishment of the erosive beach seaward of these parks will serve as a positive impact on shore protection and adjacent infrastructure.

7. Chapter 267, Historic Preservation.

This chapter establishes the procedures for implementing the Florida Historic Resources Act responsibilities.

Response: Consultation with the Florida Division of Historical Resources and the State Historic Preservation Officer have indicated that there are no known or anticipated cultural resources likely to be found within the proposed project area. Therefore, this proposed project fully complies with the responsibilities set forth in this legislation.

8. Chapter 288, Economic Development and Tourism.

This chapter directs the state to provide guidance and promotion of beneficial development through encouraging economic diversification and promoting tourism.

Response: The Jacksonville Beach Fishing Pier is a popular recreational location for fishermen and sightseers. The authorized beach fill will provide more space for recreation and protection against wind and wave generated damage and ensure the accessibility of the fishing pier to the public. This will be compatible with promoting tourism and protecting tourist related structures for this area and is therefore consistent with the goals of this chapter.

9. Chapters 334 and 339, Public Transportation.

This chapter authorizes the planning and development of a safe and efficient transportation system.

Response: The increase in construction vehicles during the construction phase of the authorized project may present a short term adverse impact on vehicular traffic patterns in the immediate area. This adverse impact will be temporary in nature, however, and will cease once construction is completed. No adverse impacts to public transportation systems are anticipated. Therefore, this project is in compliance with the intent of this chapter.

10. Chapter 370, Saltwater Living Resources.

This chapter directs the state to preserve, manage and protect the marine, crustacean, shell and anadromous fishery resources in state waters; to protect and enhance the marine and estuarine environment; to regulate fisherman and vessels of the state engaged in the taking of such resources within or without state waters; to issue licenses for the taking and processing products of fisheries; to secure and maintain statistical records of the catch of each such species; and, to conduct scientific, economic, and studies of research.

Response: The authorized beach fill project may represent a temporary short-term impact to infaunal invertebrates by burying these intertidal organisms. However, organisms that inhabit the dynamic intertidal zone are readily adapted to intermittent burial from sand. These organisms are highly fecund and their populations are expected to return to pre-construction levels within 6 months to two years. Motile epifaunal invertebrates and ichthyofauna will be able to avoid any stressful environmental conditions produced by beach renourishment activities. This authorized project has been coordinated with the U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) under Section 7 of the Endangered Species Act. There will be no adverse impacts to endangered cetaceans and sea turtles. Special precautions to ensure the safety of endangered and threatened species have been incorporated into the Plans and Specifications of the project. Based on the overall expected impacts of this project, the project is consistent with the goals of this chapter.

11. Chapter 372, Living Land and Freshwater Resources.

This chapter establishes the Game and Freshwater Fish Commission and directs it to manage freshwater aquatic life and wild animal life and their habitat to perpetuate a diversity of species with densities and distributions which provide sustained ecological, recreational, scientific, educational, aesthetic, and economic benefits.

Response: The authorized project will have no adverse impact on freshwater aquatic life or wild animal life. Any avifauna or other small foraging animals associated with salt tolerant herbaceous vegetation found along the dune line will be able to migrate out of the proposed project area during the construction phase and seek optimum environmental conditions elsewhere.

12. Chapter 373, Water Resources.

This chapter provides the authority to regulate the withdrawal, diversion, storage, and consumption of water.

Response: This authorized project does not involve or impact water resources as described by this chapter.

13. Chapter 376, Pollutant Spill Prevention and Control.

This chapter regulates the transfer, storage, and transportation of pollutants and the cleanup of pollutant discharges.

Response: This authorized project does not involve transportation of any toxic substances. All precautions will be taken to assure that no petrochemicals or other toxins are expelled into the environment by machinery during the construction phase.

14. Chapter 377, Oil and Gas Exploration and Production.

This chapter authorizes the regulation of all phases of exploration, drilling, and production of oil, gas, and other petroleum products.

Response: This authorized project does not involve the regulation of any phase of exploration, drilling, and production of gas, oil, or other petroleum products.

15. Chapter 380, Environmental Land and Water Management.

This chapter establishes criteria and procedures to assure that local land development decisions consider the regional impact nature of proposed large-scale development.

Response: The renourishment of an erosive beach to dissipate wave energy and help provide storm protection to shorefront structures will have no adverse regional impact on the overall resources of northeast Florida. The authorized project is therefore consistent with the established goals of this chapter.

16. Chapter 388, Arthropod Control.

This chapter provides for a comprehensive approach for abatement or suppression of mosquitoes and other pest arthropods within the state.

Response: The authorized project will not impound freshwater and is not expected to further the propagation of mosquitoes or other pest arthropods.

17. Chapter 403, Environmental Control.

This chapter authorizes the regulation of pollution of the air and waters of the state by the Florida Department of Environmental Protection (DEP).

Response: The DEP regulates air and water pollution by issuing a Water Quality Certification (WQC) permit which lists appropriate safeguards which must be implemented during construction activities to ensure that degradation of Florida's air and water resources are not permitted. An application for a WQC has been submitted to the DEP for construction of the authorized project. Therefore, this project is complying with the intent of this chapter.

18. Chapter 582, Soil and Water Conservation.

This chapter establishes policy for the conservation of the state soil and water through the Department of Agriculture. Land use policies will be evaluated in terms of their tendency to cause or contribute to soil erosion or to conserve, develop, and utilize soil and water resources both onsite or in adjoining properties affected by the project. Particular attention will be given to the project on or near agricultural lands.

Response: The authorized project is not located near or on agricultural lands and therefore, this chapter does not apply.

Appendix C

Relevant Correspondence

Duval County Shore Protection Project

Third Renourishment of Reaches 2-3-4

Duval County, Florida



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

April 7, 1993

REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

TO ADDRESSES ON THE ENCLOSED LIST:

The Jacksonville District, U.S. Army Corps of Engineers, is preparing an Environmental Assessment (EA) for construction of the second renourishment of Jacksonville Beach, Duval County, Florida. The first segment (northern reach) of the project area extends from just south of the Mayport Naval Station south to Atlantic Boulevard (Project Map 1). The second segment (southern reach) of the project area extends from Atlantic Boulevard south to the St. Johns County line (Project Map 2). It is anticipated that approximately 1.5 million cubic yards of beach compatible material obtained from an offshore borrow area (Figure 1) will be placed on the northern reach and approximately 1.2 million cubic yards of beach compatible material on the southern reach. The EA will be prepared to provide supplemental environmental information on the project since the completion of the 1974 Environmental Impact Statement and the 1990 Section 934 Reevaluation Report with Environmental Assessment.

We welcome your views, comments and information about resources, study objectives and important features within the described project area, as well as any suggested improvements. Letters of comments or inquiry should be addressed to the letterhead address to the attention of Planning Division, Environmental Coordination Section and received by this office within 30 days of the date of this letter.

Sincerely,

A handwritten signature in cursive script that reads "A. J. Salem".

A. J. Salem
Chief, Planning Division

Enclosures

DUVAL COUNTY
SHORE PROTECTION PROJECT

Florida Audubon Society
1101 Audubon Way
Maitland, FL 32751-5451

Mr. John Rains, Jr.
Isaak Walton League of
America, Inc.
5314 Bay State Road
Palmetto, Florida 33561-9712

State Clearinghouse
Office Of Planning & Budgeting
Executive Office of the
Governor
The Capitol
Tallahassee, FL 32301-8074
(16 cys)

Florida Wildlife Federation
P. O. Box 6870
Tallahassee, FL 32314-6870

Florida Defenders of the
Environment
2606 NW 6th Street
Gainesville, FL 32609

State Conservationist
Soil Conservation Service
U.S. Department of Agriculture
401 First Ave., SE
P. O. Box 1280
Gainesville, FL 32602-1280

Regional Environmental Officer
Housing & Urban Development
Room 600-C
75 Spring St., SW
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(2 cys)

Commander (OAN)
Seventh Coast Guard District
909 S.E. 1st Avenue
Bricknell Plaza Federal
Building
Miami, Florida 33131-3050

Mr. Heinz Mueller
Environmental Policy Section
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345 Courtland Street, N.E.
Atlanta, GA 30365-2401
(5 cys)

Regional Director
Insurance & Mitigation
Division - FEMA
1371 Peachtree St., NE
Atlanta, GA 30303-3309

Wilderness Society
4203 Ponce de Leon Boulevard
Coral Gables, FL 33416

State Director, ASCS
U.S. Department of Agriculture
P. O. Drawer 670
Gainesville, FL 32602-0670

Mr. George W. Percy, Director
Division of Historical
Resources
State Historic Preservation
Officer
R.A. Gray Building
Tallahassee, Florida 32399

Field Supervisor
Jacksonville Field Office
U.S. Fish and Wildlife Service
3100 University Blvd., South
Jacksonville, Florida 32216

Dr. Elaine Harrington
Florida Chapter
Sierra Club
927 Delores Drive
Tallahassee, FL 32301-2929

Environmental Services, Inc.
9104 Cypress Green Drive
Suite 408
Jacksonville, FL 32216-7779

Southern Region Forester
U.S. Forest Service
Department of Agriculture
1720 Peachtree Road, NW
Atlanta, Georgia 30309-2405

National Marine Fisheries
Service
Environmental Assessment
Branch
3500 Delwood Beach Road
Panama City, FL 32407-7499

National Marine Fisheries
Service
Office of the Regional
Director
9450 Koger Boulevard
St. Petersburg, FL 33702-2496

National Marine Fisheries
Service
Chief, Protected Species
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Ms. Susan Marynowski
Caribbean Conservation
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Florida Department of
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5050 West Tennessee Street
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City of Jacksonville Beach
City Hall - First Street
Jacksonville Beach, FL. 32250

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City of Jacksonville
220 East Bay Street
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Director
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Honorable Ed Austin, Mayor
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2800 University Boulevard N.
Jacksonville, Florida 32211

Ms. Lynn Stein, Chairperson
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11 Lake Julia Drive South
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Office of the Director
Office of Ecology &
Conservation
U.S. Department of Commerce
14th and Constitutional Ave NW
Washington, DC 20230-0001
(4 cys)

Director
Office of Environmental
Compliance
Dept. of Energy - Rm. 4G064
1000 Independence Avenue, SW
Washington, D.C. 20585
(2 cys)

Federal Maritime Commission
Office of Energy &
Environmental Impact
1100 L Street, NW
Washington, D.C. 20005-4013

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Honorable Tillie Fowler
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Mayor William Gilliford
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Neptune Beach, FL 332266

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Sea Turtle Recovery
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**ENDANGERED SPECIES ACT
BIOLOGICAL ASSESSMENT
DUVAL COUNTY BEACH EROSION CONTROL PROJECT
DUVAL COUNTY, FLORIDA**

1. **PROJECT AUTHORITY:** The Duval County Beach Erosion Control Project was authorized by Section 301 of the River and Harbor Act of 1965 (Public Law 89-298) on 27 October 1965 and is described in House Document 273/89/1. Section 301 projects are prosecuted under the direction of the Secretary of the Army and supervision of the Chief of Engineers. Authorization for the project in 1965 provided for initial beach fill with periodic renourishment as needed.

2. **LOCATION:** The proposed project would be undertaken along a 10 mile segment between the south jetty of the St. Johns River and the Duval County - St. Johns County line (Figure 1). The 10 miles of the Atlantic shoreline to be renourished includes the ocean frontage of the U.S. Naval Station at Mayport, Kathryn Abbey Hannah Park, and the towns of Atlantic Beach, Neptune Beach, and Jacksonville Beach (Figure 1 and Project Map 1). The project area is divided into two segments with Reach 2 extending from Atlantic Boulevard northward to just south of the U.S. Naval Station at Mayport (Project Map 1). Reaches 3 & 4 extend from Atlantic Boulevard in a southerly direction to the Duval County - St. Johns County line (Project Map 2).

3. **DESCRIPTION OF PROPOSED ACTION:** Neptune Beach and Jacksonville Beach were originally nourished by approximately 1,218,000 cubic yards of beach compatible material in 1980. The area from Atlantic Boulevard in Neptune Beach southward to the St. Johns County line (4.8 miles) was renourished by approximately 309,000 cubic yards of beach compatible material in 1986 and 950,000 cubic yards of beach compatible material in 1987 (Project Map 2). The current project will use the same construction template as the previous 1987 renourishment. Approximately 1,000,000 cubic yards of beach compatible material will be dredged from an offshore borrow site located approximately 8.0 miles from Jacksonville Beach (Vicinity Map) and placed on 27,000 feet of severely eroded shoreline.

4. **LISTED SPECIES WHICH MAY BE AFFECTED:** Pursuant to the Endangered Species Act, as amended, the U.S. Army Corps of Engineers (Corps) requested in a letter to the National Marine Fisheries Service (NMFS) on 25 March 1993 a list of any species or their critical habitat either listed or proposed for listing that may be present offshore of the Duval County, Florida, beach

disposal area as well as the offshore borrow area. The NMFS responded in a letter dated 7 May 1993 that the threatened loggerhead sea turtle (Caretta caretta) and green sea turtle (Chelonia mydas) as well as the endangered leatherback sea turtle (Dermochelys coriacea), hawksbill sea turtle (Eretmochelys imbricata), and Kemp's (Atlantic) ridley sea turtle (Lepidochelys kempii) are known to occur in the proposed beach disposal area. Endangered marine mammals such as the finback (Balaenoptera physalus), humpback (Megaptera novaeangliae), right (Eubaleana glacialis), sei (Balaenoptera borealis), and sperm (Physeter catodon) whales may also be found offshore of the beach disposal area and in the vicinity of the borrow area.

The loggerhead sea turtle (C. caretta) has a wide distributional range, occurring from the subtropical waters of Florida and extending as far north as Newfoundland (Squires 1954). In the western Atlantic Ocean, most nesting activity occurs along Florida's barrier islands, with 94.4% of the nests deposited from Cape Canaveral (Brevard County) southward to Miami Beach (Conley and Hoffman 1986). Between 1982-1985, an average of 5 nests were successfully dug at Katherine Ann Hanna State Park (Project Maps 1 and 2) and 17 nests at Little Talbot Island (Figure 1). During this time period, the first documented nest of the season occurred as early as May 16th and the last nest of the season as late as August 17th (Conley and Hoffman 1986). The northeast beaches of Florida extending from Volusia County northward to the Georgia state line represented just 2.9% of the entire total of Florida nests between 1979-1985 (Conley and Hoffman 1986).

No green (C. mydas), hawksbill (E. imbricata), or Kemp's ridley (L. kempii) sea turtle nest was discovered along any stretch of the Duval County shoreline between 1979-1985 (Conley and Hoffman 1986).

The leatherback sea turtle (D. coriacea), largest of all the sea turtles, is generally pelagic in nature and is reported from the tropics to the New England coast and the waters of Maritime Canada (National Research Council 1990). Although they exhibit a worldwide distribution, leatherbacks nest almost entirely in the tropics. Because of this, leatherbacks rarely nest in the United States although nests are reported in low numbers along the southeastern Florida coast. In 1985, 87 nests were recorded along 167.7 kilometers of Florida beach (Conley and Hoffman 1986). Of the 87 nests, none were reportedly found along the Duval County shoreline. Leatherbacks frequently are spotted migrating northward past the Duval County coast during the winter months.

During the winter months, most of the humpback whale (M. novaeangliae) population in the western Atlantic Ocean is concentrated in the Caribbean Sea around the U.S. Virgin Islands and Puerto Rico (NMFS 1991b). From mid-April to mid-November,

these whales conjugate primarily off the New England coast and Maritime Canada (NMFS 1991b). The only known calving ground of the North Atlantic right whale (*E. glacialis*) is located off the coast of Florida, Georgia, and South Carolina (Slay 1992). The calving season for this species in northeastern Florida usually runs between November-March (Slay 1992). From March-November, these whales normally frequent the productive feeding grounds of New England and the Scotian Shelf (NMFS 1991a). It is the migratory patterns of these whales moving from the northeastern United States and Maritime Canada to northeast Florida that make them most vulnerable to human-induced impacts.

5. DISCUSSION OF POTENTIAL IMPACTS TO LISTED SPECIES: From the best available evidence, collisions with moving ships are the most common human-induced mortality among the above mentioned whale species along the southeastern United States coastline. Significant shipping occurs at Jacksonville and Mayport Naval Base in northeast Florida. Because the broad shallow protective shelf off Florida reduces wave heights, female whales along with their less mobile calves are often seen at the water surface during the winter months. Frequenting the surface of the ocean makes this species especially vulnerable to accidental boat collisions.

Swimming sea turtles are also potentially at risk from accidental boat collisions when frequenting offshore waters in shipping lanes. To the best of our knowledge, no sea turtle has been reportedly harmed by collision with a dredge ship.

6. EFFORTS TO ELIMINATE POTENTIAL IMPACTS: Efforts to eliminate or significantly reduce the potential impacts described above will be addressed by implementing the following actions, if needed:

a. Prior to the commencement of construction activities, the contractor will instruct all personnel associated with the project on which endangered species may be in the area, the need to avoid collisions with them, and the civil and criminal penalties for harming, harrassing, or killing them.

b. Lookouts will be posted on all dredge and support ships operating offshore between November-March to minimize collisions with sea turtles and whales.

c. The vessel operators will be instructed to follow routes of deep water whenever possible. This will increase the capability of whales and sea turtles to dive or stay at deeper depths in order to reduce the chance of collisions with ships.

d. Any incident involving a death or injury shall be immediately reported to the U.S. Army Corps of Engineers and the National Marine Fisheries Service for investigation so the most appropriate course of action can be taken.

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, FL 33702

June 9, 1993

F/SEO13:EH

Mr. A. J. Salem
Chief, Planning Division
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Mr. Salem:

This responds do your May 26, 1993, letter regarding proposed renourishment of Jacksonville Beach, Duval County, Florida, from just south of Mayport Naval Station south to the St. John county line, with approximately 2.7 million cubic yards of beach-compatible materials. A Biological Assessment (BA) was submitted pursuant to Section 7 of the Endangered Species Act of 1973 (ESA).

We have reviewed the BA and concur with your determination that populations of endangered/threatened species under our purview will not be affected by the proposed action. However, turtle nests could be affected by the renourishment, depending on if the timetable for sand deposition overlaps with sea turtle nesting/hatching season extending from approximately May through September. Florida Department of Natural Resources Nesting Beach Survey data indicate 11 successful nestings by loggerhead sea turtles in the Atlantic-Jacksonville Beach area in 1992. Another 11 loggerhead nests were documented for nearby Little Talbot Island State Park. Sea turtle nests are under the jurisdiction of the U. S. Fish and Wildlife Service.

This concludes consultation responsibilities under Section 7 of the ESA. However, consultation should be reinitiated if new information reveals impacts of the identified activity that may affect listed species or their critical habitat, a new species is listed, the identified activity is subsequently modified or critical habitat determined that may be affected by the proposed activity.

If you have any questions, please contact LCDR. Eric Hawk, Fishery Scientist, at (813)893-3366.

Sincerely,

Charles A. Oravsky

for Andrew J. Kemmerer
Regional Director

cc: F/PR2
F/SER2



March 25, 1993

Planning Division
Environmental Branch

Mr. David J. Wesley, Field Supervisor
U.S. Fish and Wildlife Service
3100 University Blvd. South, Suite 120
Jacksonville, Florida 32216

Dear Mr. Wesley:

Pursuant to the Endangered Species Act, as amended, the U.S. Army Corps of Engineers, Jacksonville District, is requesting a list of any species or their critical habitat either listed or proposed for listing that may be present in the Duval County, Florida, beach disposal area (Project Map 1). The Corps of Engineers is currently preparing a Design Document with Environmental Assessment (EA) for construction of the second renourishment of Jacksonville Beach, Duval County, Florida. The project area begins at Atlantic Boulevard and extends south to the St. Johns County line (Project Map 1). The proposed plan calls for approximately 1,200,000 cubic yards of beach compatible material obtained from an offshore borrow site (Figure 1) to be placed along the reach shown in Project Map 1.

The point of contact for this study is Robert J. Brock at 904-232-2389.

Sincerely,

A. J. Salem
Chief, Planning Division

Enclosures



United States Department of the Interior



FISH AND WILDLIFE SERVICE
3100 University Blvd. South
Suite 120
Jacksonville, Florida 32216

APR 22 1993

Mr. A.J. Salem
Chief, Planning Division
U.S. Army Corps of Engineers
PO Box 4970
Jacksonville, FL 32232-0019

Re: FWS Log No: 4-1-93-284C

Dear Mr. Salem:

This responds to your scoping letter of April 7, 1993, requesting information to assist the Corps in defining issues and concerns pertinent to the second renourishment project for Jacksonville Beach, Duval County, Florida.

On April 4, 1993, we provided, at your request, a letter identifying federally listed species expected to occur within the proposed project area.

The Service is concerned with potential impacts to these listed species and is available to assist the Corps, pursuant to the Fish and Wildlife Coordination Act, in developing required reports through transfer fund agreements. Since protection of sea turtles will be an issue with this proposed activity, the Florida Department of Natural Resources should also be contacted.

We look forward to working with the Corps on this project. If you have further questions regarding this project.

Sincerely,

Don Palmer

Donald T. Palmer
Acting Field Supervisor



United States Department of the Interior



FISH AND WILDLIFE SERVICE
3100 University Blvd. South
Suite 120
Jacksonville, Florida 32216

December 20, 1991

Mr. A.J. Salem
Chief, Planning Division
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear Mr. Salem:

This letter is in reference to the report, "Duval County, Florida, From St. Johns River to the Duval - St. Johns County Line, Shore Line Protection Project". Our comments are submitted in accordance with the Fish and Wildlife Coordination Act.

The proposed action is a consideration of the feasibility of extended Federal participation to shoreline protection within the project area from 10 to 50 years. As specific projects are developed for shore protection within the study area, the Corps will prepare separate Environmental Assessments. The Fish and Wildlife Service will review each project, and provide comments pursuant to the Fish and Wildlife Coordination Act and the Endangered Species Act.

The Service has reviewed the Environmental Assessment prepared for the reauthorization of shoreline protection, and we believe this action will not impact fish or wildlife resources. As projects are developed, they will be individually assessed for fish and wildlife impacts, including impacts to federally listed threatened and endangered species.

This represents the views of Department of Interior

Sincerely yours,

Michael M. Bentzien
Assistant Field Supervisor



United States Department of the Interior



FISH AND WILDLIFE SERVICE
3100 University Blvd. South
Suite 120
Jacksonville, Florida 32216

APR 14 1993

A.J. Salem
Chief, Planning Division
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Attn: Planning Division, Environmental Branch

FWS Log No: 4-1-93-257C
Dated: March 25, 1992
Applicant: Dept. of the Army
County: Duval

Dear A.J Salem:

This responds to your letter of March 25, 1993, requesting a list of any species or their critical habitat either listed or proposed for listing in Duval County in the beach area from Atlantic Boulevard south to St. Johns County line. Our comments are offered in accordance with the provisions of the Endangered Species Act of 1973, as amended.

The threatened loggerhead sea turtle (*Caretta caretta*) and the endangered leatherback sea turtle (*Dermochelys coriacea*) are known to occur in the area referenced above.

You may want to contact Mr. Ren Lohofener, our Sea Turtle Coordinator, at 904-232-2580 to obtain further information regarding the planning and protection of these two species during the project's duration. Thank you for your cooperation.

Sincerely yours,

Michael M. Bentzien
Assistant Field Supervisor

26
May 17, 1993

Planning Division
Environmental Branch

Mr. David J. Wesley, Field Supervisor
U.S. Fish and Wildlife Service
3100 University Boulevard South, Suite 120
Jacksonville, Florida 32216

Dear Mr. Wesley:

The Jacksonville District, U.S. Army Corps of Engineers, is planning for construction of the second renourishment of Jacksonville Beach, Duval County, Florida. The first segment (northern reach) of the project area extends from just south of the Mayport Naval Station south to Atlantic Boulevard (Project Map 1). The second segment (southern reach) of the project area extends from Atlantic Boulevard south to the St. Johns County line (Project Map 2). It is anticipated that approximately 1.5 million cubic yards of beach compatible material obtained from an offshore borrow area (Vicinity Map) will be placed on the northern reach and 1.2 million cubic yards of beach compatible material on the southern reach.

Pursuant to Section 7(a) of the Endangered Species Act, please find enclosed the Biological Assessment (BA) addressing the concerns of the U.S. Fish and Wildlife Service (FWS) contained in a letter dated April 14, 1993 (FWS Log No. 4-1-93-257C). The U.S. Army Corps of Engineers has determined that the proposed actions will not adversely affect any listed species under FWS jurisdiction. We base this determination on the information presented in the enclosed BA and summarized in Section 7 on page 8.

We request your concurrence on the above determination. If you have any questions or need any further assistance, please contact Robert J. Brock at extension 2389.

Sincerely,

A. J. Salem
Chief, Planning Division

Enclosures

**ENDANGERED SPECIES ACT
BIOLOGICAL ASSESSMENT
DUVAL COUNTY BEACH EROSION CONTROL PROJECT
DUVAL COUNTY, FLORIDA**

1. PROJECT AUTHORITY: The Duval County Beach Erosion Control Project was authorized by Section 301 of the River and Harbor Act of 1965 (Public Law 89-298) on 27 October 1965 and is described in House Document 273/89/1. Section 301 projects are prosecuted under the direction of the Secretary of the Army and supervision of the Chief of Engineers. Authorization for the project in 1965 provided for initial beach fill with periodic renourishment as needed.

2. LOCATION: The proposed project would be undertaken along a 10 mile segment between the south jetty of the St. Johns River and the Duval County - St. Johns County line (Figure 1). The 10 miles of the Atlantic shoreline to be renourished includes the ocean frontage of the U.S. Naval Station at Mayport, Kathryn Abbey Hannah Park, and the towns of Atlantic Beach, Neptune Beach, and Jacksonville Beach (Figure 1 and Project Map 1). The project area is divided into two segments with Reach 2 extending from Atlantic Boulevard northward to just south of the U.S. Naval Station at Mayport (Project Map 1). Reaches 3 & 4 extend from Atlantic Boulevard in a southerly direction to the Duval County - St. Johns County line (Project Map 2).

3. DESCRIPTION OF PROPOSED ACTION: Neptune Beach and Jacksonville Beach were originally nourished by approximately 1,218,000 cubic yards of beach compatible material in 1980. The area from Atlantic Boulevard in Neptune Beach southward to the St. Johns County line (4.8 miles) was renourished by approximately 309,000 cubic yards of beach compatible material in 1986 and 950,000 cubic yards of beach compatible material in 1987 (Project Map 2). The current project will use the same construction template as the previous 1987 renourishment. Approximately 1,000,000 cubic yards of beach compatible material will be dredged from an offshore borrow site located approximately 8.0 miles from Jacksonville Beach (Vicinity Map) and placed on 27,000 feet of severely eroded shoreline.

4. LISTED SPECIES WHICH MAY BE AFFECTED: Pursuant to the Endangered Species Act, as amended, the U.S. Army Corps of Engineers (Corps) requested in a letter to the U.S. Fish and Wildlife Service (FWS) on 25 March 1993 a list of any species or their critical habitat either listed or proposed for listing that may be present in the Duval County, Florida, beach disposal area.

The FWS responded in a letter dated 14 April 1993 that the threatened loggerhead sea turtle (Caretta caretta) and the endangered leatherback sea turtle (Dermodochelys coriacea) are known to occur in the proposed beach disposal area.

The loggerhead sea turtle (C. caretta) has a wide distributional range, occurring from the subtropical waters of Florida and extending as far north as Newfoundland (Squires 1954). In the western Atlantic Ocean, most nesting activity occurs along Florida's barrier islands, with 94.4% of the nests deposited from Cape Canaveral (Brevard County) southward to Miami Beach (Conley and Hoffman 1986). Between 1982-1985, an average of 5 nests were successfully dug each year at Katherine Ann Hanna State Park (Project Maps 1 and 2) and 17 nests at Little Talbot Island (Figure 1). During this time period, the first documented nest of the season occurred as early as May 16th and the last nest of the season as late as August 17th (Conley and Hoffman 1986). It is important to point out that Little Talbot Island is located north of the St. Johns River (Figure 1) and is out of the influence of the beach renourishment project. The northeast beaches of Florida extending from Volusia County northward to the Georgia state line represented just 2.9% of the entire total of Florida nests between 1979-1985 (Conley and Hoffman 1986).

The leatherback sea turtle (D. coriacea), largest of all the sea turtles, is generally pelagic in nature and is reported from the tropics to the New England coast and the waters of Maritime Canada (National Research Council 1990). Although exhibiting a worldwide distribution, leatherbacks nest almost entirely in the tropics. Because of this, leatherbacks rarely nest in the United States although nests are reported in low numbers along the southeastern Florida coast. In 1985, 87 nests were recorded along 167.7 kilometers of Florida beach (Conley and Hoffman 1986). Of the 87 nests, none were reportedly found along the Duval County shoreline.

5. DISCUSSION OF POTENTIAL IMPACTS TO LISTED SPECIES: The activities associated with beach nourishment consists of pumping sand onshore from an offshore source, moving the deposited sand around the beach by heavy machinery, and manicuring the newly constructed beach by beach shaping equipment. The density (compaction), shear resistance (hardness), moisture, slope, color, grain size, grain shape, and grain mineral content of renourished sand can all potentially change sea turtle nesting activities (Nelson and Dickerson 1988).

Renourished sands become compacted (harder) when the individual sand grains are primarily flat and are layered on top of each other. Renourished sands can become compacted due to the borrow area sand being dissimilar than that found on the natural beach as well as being compacted by beach shaping equipment and

construction vehicles. A higher compaction of sand may make it more difficult for a female sea turtle to dig a nest and could lead to an increased number of false crawls. Grain size, shape, and mineral content all contribute to the amount of pressure exhibited between sand grains (Nelson et al. 1987). As shear resistance (hardness) is a measure of the ability to penetrate sand, it is an important indication as to the resistance that a nesting sea turtle will encounter when attempting to dig a nest chamber. Increased hardness of beach sand can lead to an increase in the number of false digs and/or a decrease in the number of hatchlings being able to successfully dig up through the sand in the nest chamber. Nelson (1987) has demonstrated that tilling of renourished sand can decrease shear resistance (hardness) of the beach. Tilling reorients individual sand grains and increases the interstitial spaces between the grains. Softening of the beach will make the sand easier to dig for nesting sea turtles. A change in moisture content due to dissimilar renourished sand can cause an egg chamber to collapse and make emergence difficult if not impossible for hatchlings. A change in chamber moisture may also change the gas chemistry of the chamber and adversely impact the incubating eggs (Gutzke 1984). Before the wind has weathered and the sun has bleached the renourished sand, sand from borrow areas is initially darker than the sand found on a natural beach (Nelson and Dickerson 1988). The importance of sand color directly influences sand temperature and hatchling sex ratios. Beach color sand may affect ambient sand temperatures and thus incubation time and sex ratios of hatchlings (Nelson and Dickerson 1988). During the 11 to 31 day critical incubation period, hatchlings will become all females if the egg chamber is $> 32^{\circ}\text{C}$ and all males if the egg chamber is $< 28^{\circ}\text{C}$ (Yntema and Mrosovsky 1982). Therefore, renourished sand can alter sex ratios of hatchlings depending upon the difference in their color compared to that of the natural beach. A scarp may form at the end of the beach fill when waves move from a flatter natural offshore slope and cut into the steep slope constructed by the renourished activities. Scarp formation will vary with wave and current magnitude. A steep scarp may make suitable nesting beach inaccessible to nesting sea turtles.

6. EFFORTS TO ELIMINATE POTENTIAL IMPACTS: Efforts to eliminate or significantly reduce the potential impacts described above will be addressed by implementing the following actions, if needed:

a. If construction activities are undertaken between May 1st and August 31st, any turtle nest found in an area that is to be renourished will be relocated between sunrise and 10 a.m. each day to a safer beach location. Nest surveys and relocations will be conducted by personnel with prior experience and training in these procedures and with a valid Florida Department of Natural

Resources permit.

b. Immediately following completion of any beach segment renourished prior to May 1st, cone penetrometer readings will be taken to determine sand density (compaction) and shear resistance (hardness). Should the renourished sand be impenetrable or cone penetrometer readings exceed 500 cone penetrometer index units (cpu), tilling the sand to a depth of 36 inches will be immediately undertaken. The identical procedure will be followed after the completion of the remainder of the beach segments that has been renourished after May 1st.

c. Any escarpment in excess of 18 inches and exceeding 500 cpu will be mechanically leveled to the natural beach contour just prior to May 1st. Since the Duval County beaches are heavily used by the public, beach cleaning equipment will slope steep drop offs as part of their regular morning activities (if applicable).

d. If any nest is relocated to a safer beach location, a report describing the actions taken, description of nest relocation, and names and qualifications of personnel involved in the nest survey and relocation will be submitted to the U.S. Fish and Wildlife Service Jacksonville Field Office within 60 days after completion of the beach renourishment project.

7. SUMMARY OF NO EFFECT DETERMINATION: Based on the best data available (Conley and Hoffman 1986), sea turtle nesting activity in northeast Florida in general and within the project area in particular is extremely low. If construction activities are ongoing between May and September, reasonable and prudent measures described in Section 6 will be implemented to ensure that nesting sea turtles are not adversely impacted. As Duval County is a "low" nesting area, these measures are not expected to be difficult to implement.

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United States Department of the Interior



FISH AND WILDLIFE SERVICE

3100 University Blvd. South
Suite 120
Jacksonville, Florida 32216

JUL 21 1993

Mr. A. J. Salem
Chief, Planning Division
U.S. Army Corps of Engineers
Jacksonville District
P.O. Box 4970
Jacksonville, FL 32232-0019

FWS Log No. 4-1-93-439D

Dear Mr. Salem:

Thank you for the opportunity to review the Biological Assessment for the Duval County Beach Erosion Control Project. The Corps' assessment resulted in a determination that the proposed action will not adversely affect any listed species under Fish and Wildlife Service (Service) jurisdiction. We do not agree with the Corps' determination.

The proposed action will renourish approximately 27,000 feet of shoreline with about 1,000,000 cubic yards of material. The assessment states that if any construction activities occur between May 1 and August 31, surveys for sea turtle nests will be conducted and any nests found will be relocated to a safe location. Actually, the window for sea turtle nest surveys should be March 1 to October 1. Any sea turtle nest relocation project is at risk for take of sea turtles. Nest surveys fail to find all nests, eggs may be broken during the relocation, and egg hatching success is reduced by the relocation process. An incidental take statement would be required.

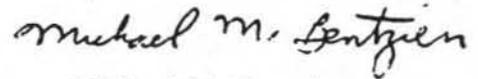
Secondly, if the beach renourishment activities are conducted at night, the Service is concerned that the lights associated with the work activities could disrupt sea turtle nesting or reduce the survival of hatching sea turtles. Lights can cause take of sea turtles.

We were glad to see the Corps' attention to beach compaction and escarpments and found the proposed measures were in line with the Service's recommendations. However, we believe an average of 500 cpu or greater is a better indication of beach compaction than a single value of 500 cpu. We believe the average cpu reading should be based on at least 30 measurements taken using stratified sampling methods. Also, the Service is willing to review the need to level and contour escarpments immediately prior to the sea turtle nesting season. The Service's

criteria accounts for escarpment height, length, and compaction. We believe that monitoring the beach compaction and escarpment formation should be done for at least five years following beach renourishment, unless the Corps and the Service mutually agree that monitoring is no long required.

We suggest that the Corps initiate formal consultation with the Service on this project. We look forward to working with you to ensure protection for threatened and endangered species.

Sincerely



Michael M. Bentzien
Assistant Field Supervisor

cc: D. Arnold, FDNR, Tallahassee

August 2, 1993

Mr. David J. Wesley, Field Supervisor
U.S. Fish and Wildlife Service
6620 Southpoint Drive South, Suite 310
Jacksonville, Florida 32216-0912

Dear Mr. Wesley,

In response to your correspondence dated July 21, 1993, disagreeing with the Corps' Biological Assessment, we would like to respond to some of your recommendations:

1. You have indicated that the window for sea turtle nest surveys should be March 1 to October 1. From the sea turtle nesting data available to this office (1982-1985), the earliest recorded sea turtle nest found on any Duval County beach was May 16th and the latest recorded nest was August 17th. From this information, monitoring for sea turtle nests would not be scientifically justified for the months of March and April. We believe that sea turtle monitoring should commence on May 1st and cease October 31st (or until the last clutch of eggs has hatched).

2. You indicated that any sea turtle nest relocation project is at risk for take of sea turtles. Although the total of sea turtle nests along the Duval County project beach averaged just 5 nests between 1982-1985 (11 nests in 1992), we concur with your determination as a 100% confidence interval does not exist. The movement of any sea turtle eggs carries with it a certain amount of risk of being broken during relocation.

3. You stated your concern that lights associated with night beach nourishment activities could disrupt sea turtle nesting or reduce the survival of hatchling sea turtles. We concur with your determination as we are well aware of the research studies that have been conducted concerning disorientation of emergent hatchlings and shoreline lights.

4. We concur with your determination that using an average of 500 cpu's or greater for a large project area would be more time and cost effective than tilling every beach area that has a sand density and shear resistance value of < 500 cpu's. The risk associated with your policy is that the entire project area (based on 30 measurements) may have an overall average of 500

cpu's (acceptable under your policy) but large segments of the project beach may actually be unacceptable to sea turtle nesting because of compaction/hardness problems (> 500 cpu's).

5. You have indicated that monitoring the beach compaction and escarpment formation should be done for at least five (5) years following beach renourishment. We have previously renourished the Duval County shoreline between 1979-1980 and 1986-1987, using material from the same borrow site that we intend to use for this second renourishment. Does enough data currently exist concerning beach nourishment activities and potential compaction/escarpment problems along the Duval County beaches to eliminate the need for this requirement?

Taking into account the information contained in your July 21, 1993, correspondence, the Corps of Engineers has concluded that the proposed project may affect sea turtles. Therefore, the Corps of Engineers requests that formal consultation with the Service be initiated.

Please provide your Biological Opinion as specified in Section 7 (b) (1) of the Endangered Species Act as soon as possible. If you have any questions or require further assistance, please contact Robert J. Brock in the Environmental Branch at (904) 232-2389.

Sincerely,

A.J. Salem
Chief, Planning Division



United States Department of the Interior

FISH AND WILDLIFE SERVICE

6620 Southpoint Drive, South
Suite 310
Jacksonville, Florida 32216-0912

OCT 25 1993

Mr. A. J. Salem
Chief, Planning Division
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

FWS Log No: 4-1-93-439D

Dear Mr. Salem:

This represents the Biological Opinion of the U.S. Fish and Wildlife Service (Service) in accordance with Section 7 of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 et seq.). This Biological Opinion satisfies the consultation requirements of Section 7 (a)(2) of the Act. It does not address the requirements of other environmental statutes, such as the National Environmental Policy Act. A complete administrative record of this consultation is on file in this office.

PROJECT DESCRIPTION

The project calls for dredging one million cubic yards of beach quality material from an off-shore borrow site located about eight miles from Jacksonville Beach, and placed on ten miles of eroded shoreline, from the south jetty of the St. Johns River to the Duval-St. Johns County line. The affected areas are Mayport Naval Station, Kathryn Abbey Hanna Park, and the towns of Atlantic Beach, Neptune Beach and Jacksonville Beach. Neptune Beach and Jacksonville Beach were first nourished in 1980. The area from Atlantic Boulevard in Neptune Beach south to the St. Johns County line was renourished in 1987. The borrow site for the current project is the same as in 1987.

CONSULTATION HISTORY

On July 21, 1993, the Service provided comments to the Corps on the Biological Assessment for this project, in which the Corps determined no effect on nesting sea turtles. The Corps responded on August 2 and 13, 1993, providing additional information and rebuttal to our comments, and reevaluated their determination and requested a Biological Opinion.

BIOLOGICAL BACKGROUND

The loggerhead sea turtle is the most common nesting sea turtle in Florida. Throughout Florida, there are approximately 49,000 nests per year. Primary nesting sites on Florida's east coast can be found from Brevard County south. The following table shows the number of loggerhead turtle nests per kilometer from 1985 through 1992, excluding 1986, found along the project site. The beach length varies from year to year; however, the results of the previous seven years show that the density of nesting loggerhead turtles is low.

YEAR	BEACH LENGTH (KM)	NESTS PER KILOMETER
1985	22.1	0.18
1987	19.3	0.52
1988	21.7	1.43
1989	15.6	0.83
1990	15.6	1.73
1991	15.7	1.40
1992	17.4	1.03

Leatherback turtles nest in Florida in low numbers. There have been no documented nests in the project site.

Green sea turtle nests are more common on Florida beaches than leatherback sea turtle nests. The majority of green sea turtle nests are found from Brevard County south. There have been no documented nests in the project site.

BIOLOGICAL OPINION

After review of the best available scientific and commercial information, it is our Biological Opinion that the project is not likely to jeopardize the continued existence of the loggerhead sea turtle. Sea turtle nesting within the project site is very low compared to other beaches further south, such as Brevard County. The incidental loss of turtle nests will not have a significant impact on the survival and recovery of loggerhead turtles in Florida.

INCIDENTAL TAKE

Section 9 of the Endangered Species Act, as amended (Act), prohibits the taking of listed species without a special exemption. Taking is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct." "Harm" and "harass" are further defined in Service regulations (50 CFR 17.3). "Harass" is

defined as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, which include, but are not limited to, breeding, feeding or sheltering. "Harm" is defined as an act which actually kills or injures wildlife. Such acts may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

"Taking" can only be authorized through special provisions. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered taking within the meaning of the Act, provided that such taking is in compliance with the terms and conditions of the Biological Opinion.

The Service has reviewed the biological information for this species, information presented by the applicant's consultants, and other available information relevant to this action. Based on our review, incidental take is anticipated for all turtle nests that are missed by a nest relocation program within the project boundary, and for failed nesting attempts as a result of the potential formation of an escarpment or sand compaction.

When providing an incidental take statement the Service is required to give reasonable and prudent measures it considers necessary or appropriate to minimize the take along with terms and conditions that must be complied with to implement the reasonable and prudent measures. Furthermore, the Service must also specify procedures to be used to handle or dispose of any individuals taken. The Service believes the following reasonable and prudent measures are necessary and appropriate to reduce take:

1. If the project commences during the turtle nesting season (May 1 through October 30) then the applicant will initiate a sea turtle nest relocation program within the project area.
2. Nourished beaches will be tilled if sand compaction occurs.
3. Corrective action on the beach will be initiated if an escarpment develops which inhibits turtles from nesting.
4. Only beach quality sand suitable for sea turtle nesting, successful incubation and hatching emergence shall be used on the project site.

To implement the above reasonable and prudent measures, the Service has outlined the following terms and conditions for incidental take. In accordance with the Interagency Cooperation Regulation (50 CFR 402), these terms and conditions must be complied with to implement the reasonable and prudent measures for incidental take:

1. If the project commences during the turtle nesting season (May 1 through October 30)

1. If the project commences during the turtle nesting season (May 1 through October 30) then the applicant will initiate a sea turtle nest relocation program within the project area. Only those nests which will be affected by construction activities are required to be relocated. Turtle monitoring activities shall include performance of daily visual inspections of the beach at sunrise by personnel with prior experience and training in nest survey and relocation and procedures, pursuant to Rule 16R-1, F.A.C., permitted by the Florida Department of Environmental Protection (DEP). Any nests discovered shall be relocated between sunrise and 0900 hours each day to a nearby self-release beach site, in a secure setting where artificial lighting will not interfere with hatchling orientation. Relocation site(s) shall be approved by DEP prior to use, and may include a non-beach hatchery if appropriate. If necessary, self-releasing screen or aboveground individual cages shall be used on relocated nests to exclude predators. Nest relocation activity will cease upon completion of the beach nourishment activity.

2. Nourished beaches will be tilled if compaction occurs. Compaction will be monitored immediately prior to the sea turtle nesting season (May 1). A minimum of 30 compaction measurement stations will be established along the nesting area of the beach, above mean high water to the base of the primary dune. At each measurement station, sand compaction measurements will be taken at 6, 12, and 18 inches depths. Measurement stations will be systematically distributed along the beach to provide coverage for the nourished beach. If the average of the 30 measurement stations for one or more of the depth profiles exceeds 500 cone penetrometer units (cpu), the beach will be tilled to a depth of 36 inches before the onset of the sea turtle nesting season. Compaction will be monitored for three years after project completion. The Jacksonville Field Office shall be provided with an annual report of the beach compaction testing.

3. During the marine turtle nesting season (May 1 to October 30), construction pipes which are placed on the beach shall be placed perpendicular to the shoreline. Temporary storage of pipes and equipment shall be off the beach to the maximum extent possible or as far landward as possible without compromising the integrity of the dune system if temporary storage on the beach is necessary.

4. During the sea turtle nesting season (May 1 to October 30), all lighting associated with the project shall be limited to the immediate area of active construction only. Such lighting shall be the minimal lighting necessary to comply with safety requirements, and shall incorporate reduced wattage, downlight, special fixtures and screens to minimize illumination of the nesting beach and nearshore waters. Lighting on offshore equipment shall be minimized through reduction, shielding, lowering, and appropriate placement of lights to avoid excessive illumination of the water, while meeting Coast Guard requirements. Shielded low pressure sodium vapor lights are highly recommended for all lights on the beach or on offshore equipment that cannot be eliminated.

5. The applicant shall monitor the nourished beach in order to detect if an escarpment or beach compaction are forming for three years after project completion. If an escarpment forms or if the nesting beach becomes compacted, the applicant shall take corrective action to remove the escarpment. An annual report shall be submitted to the Service on October 1 for each of the three years.

If an escarpment greater than 12 inches high, longer than 30 yards, and with an average compaction exceeding 500 cpu forms prior to the sea turtle nesting season, the applicant shall level the escarpment prior to the nesting season. Alternatively, the applicant may arrange for the Service to visit the project site immediately prior to the nesting season. If the Service determines that the escarpment may hinder nesting turtles, the applicant will level the escarpment immediately.

If an escarpment develops during the turtle nesting season, corrective action will take place only during daylight hours. The applicant should contact the Jacksonville Field Office (904/232-2580) for further coordination prior to work in order to avoid impacting turtle nests.

6. The material disposed on the project site must meet Florida Department of Environmental Protection standards for beach quality sand which is suitable for sea turtle nesting, successful incubation and hatchling emergence.

7. The applicant shall arrange a meeting with the contractor, the Service and the Florida Department of Natural Resources, 90 days prior to beginning work on this project. This will allow agencies to explain the turtle protection measures to the contractor.

8. A report describing the actions taken to implement the terms and conditions will be submitted to this office within 60 days of completion of the proposed work for each year when activity has occurred. This report will include dates of actual construction activities, names and qualifications of personnel involved in nest surveys and relocation activities, descriptions and location of hatcheries, nest survey and relocation results and hatching success of nests.

In the event a turtle nest is dug up during beach construction activities, the following procedure should be followed:

1. Immediately notify the Florida Department of Natural Resources permitted individual responsible for nest relocation on the project for removal of the nest to the beach hatchery.

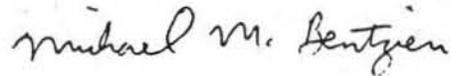
CONSERVATION RECOMMENDATIONS

1. Sea oats or other appropriate dune vegetation should be planted on nourished beaches to enhance dune restoration. The DEP, Division of Beaches and Shores, can provide technical assistance on the specifications for design and implementation.

2. We recommend that a three-year study be implemented to assess impacts on nesting and hatching success. The design of the study should be coordinated with the Service and DEP.

This concludes Section 7 consultation, in accordance with the Act. If modifications are made in the project, or if new information becomes available on listed species, reinitiation of consultation may be necessary.

Sincerely yours,

A handwritten signature in cursive script that reads "Michael M. Bentzien".

Michael M. Bentzien
Assistant Field Supervisor

Appendix D

Aquatic Species List

Duval County Shore Protection Project

Third Renourishment of Reaches 2-3-4

Duval County, Florida

Common and Scientific Names of Animals
Known to Occur in the Duval County Area

<u>Common Name</u>	<u>Scientific Name</u>
Invertebrata	
Mollusca	
Bivalvia	
Wedge shell	<u>Donax sp.</u>
Athropoda	
<u>Crustacea</u>	
Ghost crab	<u>Ocypode albicans</u>
Hermit crabs	<u>Paguridae</u>
Spider crabs	<u>Majidae</u>
Shrimp	<u>Decapoda</u>
Sandbugs	<u>Emerita talpoida</u>
Mantis shrimp	<u>Squilla empursa</u>
<u>Echinodermata</u>	
Starfish	<u>Asteroidea</u>
Brittle-stars	<u>Ophiuroida</u>
Sand dollars	<u>Exocycloida</u>
Pisces	
Chondrichthyes	
Squaliformes	
Nurse shark	<u>Ginglymostoma cirratum</u>
Sand tiger	<u>Odontaspis taurus</u>
Finetooth shark	<u>Aprionodon isodon</u>
Blacknose shark	<u>Carcharhinus acronotus</u>
Blacktip shark	<u>Carcharhinus limbatus</u>
Smooth dogfish	<u>Mustelus canis</u>
Atlantic sharpnose shark	<u>Rhizoprionodon terraenovae</u>
Bonnethead	<u>Sphyrna tiburo</u>
Smooth hammerhead	<u>Sphyrna zygaena</u>
Rajiformes	
Smalltooth sawfish	<u>Pristis pectinata</u>
Atlantic guitarfish	<u>Rhinobatos lentiginosus</u>
Lesser electric ray	<u>Narcine brasiliensis</u>
Atlantic torpedo	<u>Torpedo nobiliana</u>
Clearnose skate	<u>Raja eglanteria</u>
Southern stingray	<u>Dasyatis americana</u>
Atlantic stingray	<u>Dasyatis sabina</u>
Bluntnose stingray	<u>Dasyatis sayi</u>
Spotted eagle ray	<u>Aetobatus narinari</u>
Southern eagle ray	<u>Myliobatis goodei</u>
Cownose ray	<u>Rhinoptera bonasus</u>
Atlantic manta	<u>Manta birostris</u>

<u>Common Name</u>	<u>Scientific Name</u>
Perciformes (cont'd.)	
Gulf kingfish	<u>Menticirrhus littoralis</u>
Atlantic croaker	<u>Micropogon undulatus</u>
Black drum	<u>Pogonias cromis</u>
Red drum	<u>Sciaenops ocellata</u>
Star drum	<u>Stellifer lanceolatus</u>
Atlantic spadefish	<u>Chaetodipterus faber</u>
Striped mullet	<u>Mugil cephalus</u>
White mullet	<u>Mugil curema</u>
Great barracuda	<u>Sphyraena barracuda</u>
Atlantic threadfin	<u>Polydactylus octonemus</u>
Goby	<u>Gobiidae</u>
Atlantic bonito	<u>Sarda sarda</u>
Atlantic mackerel	<u>Scomber scombrus</u>
King mackerel	<u>Scomberomorus cavalla</u>
Spanish mackerel	<u>Scomberomorus maculatus</u>
Sea robin	<u>Triglidae</u>
Pleuronectiformes	
Three-eyed flounder	<u>Ancylopsetta dilecta</u>
Ocellated flounder	<u>Ancylopsetta quadrocellata</u>
Peacock flounder	<u>Bothus lunatus</u>
Eyed flounder	<u>Bothus ocellatus</u>
Gulf stream flounder	<u>Citharichthys arctifrons</u>
Horned whiff	<u>Citharichthys cornutus</u>
Spotted whiff	<u>Citharichthys macrops</u>
Bay whiff	<u>Citharichthys spilopterus</u>
Spotfin flounder	<u>Cyclopsetta fimbriata</u>
Fringed flounder	<u>Etropus crossotus</u>
Smallmouth flounder	<u>Etropus microstomus</u>
Gray flounder	<u>Etropus rimosus</u>
Shrimp flounder	<u>Gastropsetta frontalis</u>
Slim flounder	<u>Monolene antillarum</u>
Gulf flounder	<u>Paralichthys albigutta</u>
Summer flounder	<u>Paralichthys dentatus</u>
Southern flounder	<u>Paralichthys lethostigma</u>
Broad flounder	<u>Paralichthys squamilentus</u>
Windowpane	<u>Scophthalmus aquosus</u>
Shoal flounder	<u>Syacium quateri</u>
Channel flounder	<u>Syacium micrurum</u>
Dusky flounder	<u>Syacium papillosum</u>
Hogchoker	<u>Trinectes maculatus</u>
Tonguefish	<u>Symphurus sp.</u>

Common Name

Scientific Name

Perciformes

Striped bass
Black sea bass
Sand perch
Bluefish
Cobia
Remora
Blue runner
Crevalle jack
Horse-eye jack
Atlantic bumper
Rainbow runner
Lookdown
Greater amberjack
Lesser amberjack
Banded rudderfish
Florida pompano
Permit .
Atlantic moonfish
Dolphin
Mutton snapper
Schoolmaster
Red snapper
Gray snapper
Lane snapper
Vermilion snapper
Tripletail
Silver jenny
Porkfish
White grunt
Bluestriped grunt
Pigfish
Sheepshead
Spottail pinfish
Pinfish
Longspine porgy
Silver perch
Spotted seatrout
Weakfish
High-hat
Banded drum
Spot
Southern kingfish

Morone saxatilis
Centropristis striata
Diplectrum formosum
Pomatomus saltatrix
Rachycentron canadum
Remora remora
Caranx crysos
Caranx hippos
Caranx latus
Chloroscombrus chrysurus
Elagatis bipinnulata
Selene vomer
Seriola dumerili
Seriola fasciata
Seriola zonata
Trachinotus carolinus
Trachinotus falcatus
Vomer setapinnis
Coryphaena hippurus
Lutjanus analis
Lutjanus apodes
Lutjanus campechanus
Lutjanus griseus
Lutjanus synagris
Rhomboplites aurorubens
Lobotes surinamensis
Eucinostomus gula
Anisotremus virginicus
Haemulon plumieri
Haemulon sciurus
Orthopristis chrysoptera
Archosargus probatocephalus
Diplodus holbrooki
Lagodon rhomboides
Stenotomus caprinus
Bairdiella chrysura
Cynoscion nebulosus
Cynoscion regalis
Equetus acuminatus
Larimus fasciatus
Leiostomus xanthurus
Menticirrhus americanus

<u>Common Name</u>	<u>Scientific Name</u>
Osteichthyes	
Elopiformes	
Ladyfish	<u>Elops saurus</u>
Tarpon	<u>Megalops atlantica</u>
Clupeiformes	
American shad	<u>Alosa sapidissima</u>
Atlantic menhaden	<u>Brevoortia tyrannus</u>
Scaled sardine	<u>Harengula pensacolatae</u>
Atlantic thread herring	<u>Opisthonema oglinum</u>
Striped anchovy	<u>Anchoa hepsetus</u>
Bay anchovy	<u>Anchoa mitchilli</u>
Flat anchovy	<u>Anchoviella perfasciata</u>
Myctophiformes	
Inshore lizardfish	<u>Synodus foetens</u>
Sand diver,	<u>Synodus intermedius</u>
Siluriformes	
Sea catfish	<u>Arius felis</u>
Gafftopsail	<u>Bagre marinus</u>
Batrachoidiformes	
Atlantic midshipman	<u>Porichthys porosissimus</u>
Lophiiformes	
Batfish	<u>Ogcocephalus sp.</u>
Atheriniformes	
Atlantic flyingfish	<u>Cypselurus heterurus</u>
Ballyhoo	<u>Hemiramphus brasiliensis</u>
Halfbeak	<u>Hyporhamphus unifasciatus</u>
Flat needlefish	<u>Ablennes hians</u>
Atlantic needlefish	<u>Strongylura marina</u>
Redfin needlefish	<u>Strongylura notata</u>
Houndfish	<u>Tylosurus crocodilus</u>
Atlantic saury	<u>Scomberesox saurus</u>
Sheepshead minnow	<u>Cyprinodon variegatus</u>
Mummichog	<u>Fundulus heteroclitus</u>
Striped killifish	<u>Fundulus majalis</u>
Longnose killifish	<u>Fundulus similis</u>
Rainwater killifish	<u>Lucania parva</u>
Atlantic silverside	<u>Menidia menidia</u>
Gasterosteiformes	
Dusky pipefish	<u>Syngnathus floridae</u>
Chain pipefish	<u>Syngnathus louisianae</u>

<u>Common Name</u>	<u>Scientific Name</u>
Tetraodontiformes	
Orange filefish	<u>Aluterus schoepfi</u>
Scrawled filefish	<u>Aluterus scriptus</u>
Gray triggerfish	<u>Balistes capriscus</u>
Planehead filefish	<u>Monacanthus hispidus</u>
Scrawled cowfish	<u>Lactophrys quadricornis</u>
Trunkfish	<u>Lactophrys trigonus</u>
Puffers	<u>Tetraodontidae</u>
Striped burrfish	<u>Chilomycterus schoepfi</u>
Reptilia	
Chelonia	
Loggerhead turtle	<u>Caretta caretta</u>
Green turtle	<u>Chelonia mydas</u>
Aves	
Pelecaniformes	
Brown pelican	<u>Pelecanus occidentalis</u>
Accipitriformes	
American peregrine falcon	<u>Falco peregrinus</u>
Charadriiformes	
Ruddy turnstone	<u>Arenaria interpres morinella</u>
Sandpipers	<u>Scolopacidae</u>
Ring-billed gull	<u>Larus delawarensis</u>
Great black-backed gull	<u>Larus marinus</u>
Bonaparte's gull	<u>Larus philadelphia</u>
Common tern	<u>Sterna hirundo hirundo</u>
Royal tern	<u>Thalasseus maximus maximus</u>
Black skimmer	<u>Rynchops nigra nigra</u>
Mammalia	
Delphinidae	
Atlantic bottle-nosed dolphin	<u>Tursiops truncatus</u>

(list reproduced from the 1974 Final
Environmental Impact Statement)

PRE-CONSTRUCTION IN-AREA SAMPLING ANALYSIS

Continued. Complete database of benthic fauna collected 22-Aug-91.

Area	Range	Depth	Taxa	A	B	C	Total
PL10	100	2	DONAX VARIABILIS	6	1	7	14
PL10	100	2	ACANTHOHAUSTORIUS PANSUS	1	8	1	10
PL10	100	2	CHIRODOTEA STENOPUS	0	1	0	1
PL10	100	4	DONAX VARIABILIS	6	6	14	26
PL10	100	4	ACANTHOHAUSTORIUS PANSUS	6	7	2	15
PL10	100	4	NEMERTEA SP.	0	0	1	1
PL10	100	4	BRANCHIOSTOMA FLORIDAE	0	0	1	1
PL10	100	4	CHIRODOTEA STENOPUS	1	0	0	1
PL10	100	4	BOWMANIELLA FLORIDANA	1	0	0	1
7A	-100	0	DONAX VARIABILIS	5	0	3	8
7A	-100	0	ACANTHOHAUSTORIUS PANSUS	0	0	2	2
7A	-100	2	DONAX VARIABILIS	4	2	4	10
7A	-100	2	ACANTHOHAUSTORIUS PANSUS	0	0	1	1
7A	-100	2	NEMERTEA SP.	1	0	0	1
7A	-100	2	EUDEVENOPUS HONDURANUS	1	0	0	1
7A	-100	4	DONAX VARIABILIS	0	1	2	3
7A	-100	4	ACANTHOHAUSTORIUS PANSUS	0	0	1	1
7A	-100	4	PAGURUS POLITUS	0	0	1	1
7A	-50	0	DONAX VARIABILIS	3	2	4	9
7A	-50	0	NEMERTEA SP.	0	3	0	3
7A	-50	0	CYCLASPIS PUSTULATA	0	0	1	1
7A	-50	0	PAGURUS POLITUS	1	0	0	1
7A	-50	0	TURBELLARIA SP.	0	1	0	1
7A	-50	2	DONAX VARIABILIS	6	4	0	10
7A	-50	2	ACANTHOHAUSTORIUS PANSUS	0	2	0	2
7A	-50	4	DONAX VARIABILIS	2	2	1	5
7A	-50	4	ACANTHOHAUSTORIUS PANSUS	0	0	3	3
7A	-50	4	NEMERTEA SP.	0	1	0	1
7A	-50	4	CYCLASPIS PUSTULATA	0	1	0	1
7A	-50	4	PAGURUS POLITUS	0	0	1	1
7A	-50	4	DISPIO UNCINATA	0	0	1	1
7A	0	0	DONAX VARIABILIS	1	4	0	5
7A	0	0	BATHYPOREIA PARKERI N. SP.	1	1	0	2
7A	0	0	ACANTHOHAUSTORIUS PANSUS	0	1	0	1
7A	0	0	NEMERTEA SP.	0	1	0	1
7A	0	0	BOWMANIELLA FLORIDANA	1	0	0	1
7A	0	0	TURBELLARIA SP.	0	1	0	1
7A	0	2	DONAX VARIABILIS	1	11	5	17
7A	0	2	ACANTHOHAUSTORIUS PANSUS	4	0	0	4
7A	0	2	NEMERTEA SP.	1	1	2	4
7A	0	2	BOWMANIELLA FLORIDANA	0	2	0	2
7A	0	2	HAUSTORIIDAE SP. (DAM)	1	0	0	1
7A	0	4	ACANTHOHAUSTORIUS PANSUS	7	6	8	21
7A	0	4	NEMERTEA SP.	1	0	0	1
7A	0	4	BOWMANIELLA FLORIDANA	1	0	0	1
7A	0	4	MEDIOMASTUS SP.	1	0	0	1
7A	50	0	DONAX VARIABILIS	5	1	6	12

Complete database of benthic fauna collected 22-Aug-91.

Area	Range	Depth	Taxa	A	B	C	Total
PL10	-100	0	DONAX VARIABILIS	10	0	11	21
PL10	-100	0	BRANCHIOSTOMA FLORIDAE	1	0	0	1
PL10	-100	2	ACANTHOHAUSTORIUS PANSUS	1	10	7	18
PL10	-100	2	DONAX VARIABILIS	1	4	3	8
PL10	-100	2	NEMERTEA SP.	1	0	0	1
PL10	-100	2	CHIRODOTEA STENOPUS	0	1	0	1
PL10	-100	2	PAGURUS POLITUS	0	1	0	1
PL10	-100	4	DONAX VARIABILIS	3	4	3	10
PL10	-100	4	ACANTHOHAUSTORIUS PANSUS	0	0	2	2
PL10	-100	4	CUMACEA SP. (DAM)	0	0	2	2
PL10	-100	4	NEMERTEA SP.	1	0	0	1
PL10	-100	4	EUDEVENOPUS HONDURANUS	0	0	1	1
PL10	-100	4	CHIRODOTEA STENOPUS	1	0	0	1
PL10	-50	0	DONAX VARIABILIS	29	17	15	61
PL10	-50	0	ACANTHOHAUSTORIUS PANSUS	2	0	0	2
PL10	-50	0	BATHYPOREIA PARKERI	0	1	0	1
PL10	-50	2	ACANTHOHAUSTORIUS PANSUS	2	7	7	16
PL10	-50	2	DONAX VARIABILIS	0	3	3	6
PL10	-50	2	CHIRODOTEA STENOPUS	0	1	0	1
PL10	-50	4	ACANTHOHAUSTORIUS PANSUS	4	11	9	24
PL10	-50	4	DONAX VARIABILIS	1	1	4	6
PL10	-50	4	CHIRODOTEA STENOPUS	0	2	0	2
PL10	-50	4	NEMERTEA SP.	1	1	0	2
PL10	0	0	DONAX VARIABILIS	21	16	23	60
PL10	0	0	ACANTHOHAUSTORIUS PANSUS	0	1	2	3
PL10	0	2	DONAX VARIABILIS	9	5	7	21
PL10	0	2	BOWMANIELLA SP. (JUV)	0	0	14	14
PL10	0	2	ACANTHOHAUSTORIUS PANSUS	3	0	0	3
PL10	0	4	ACANTHOHAUSTORIUS PANSUS	1	0	4	5
PL10	0	4	BRACHYURA (MEGALOPS)	0	0	1	1
PL10	0	4	DONAX VARIABILIS	1	0	0	1
PL10	0	4	BIVALVIA SP. (DAM)	1	0	0	1
PL10	50	0	DONAX VARIABILIS	14	0	0	14
PL10	50	0	BOWMANIELLA FLORIDANA	0	5	0	5
PL10	50	0	ACANTHOHAUSTORIUS PANSUS	2	1	1	4
PL10	50	2	ACANTHOHAUSTORIUS PANSUS	7	14	12	33
PL10	50	2	DONAX VARIABILIS	5	6	4	15
PL10	50	2	OXYUROSTYLIS SMITHI	0	1	0	1
PL10	50	4	ACANTHOHAUSTORIUS PANSUS	7	1	5	13
PL10	50	4	DONAX VARIABILIS	5	0	2	7
PL10	50	4	NEMERTEA SP.	0	1	0	1
PL10	50	4	CHIRODOTEA STENOPUS	0	0	1	1
PL10	50	4	BRACHYURA (MEGALOPS)	0	0	1	1
PL10	100	0	DONAX VARIABILIS	7	18	7	32
PL10	100	0	ACANTHOHAUSTORIUS PANSUS	5	8	0	13
PL10	100	0	NEMERTEA SP.	0	0	2	2
PL10	100	0	BOWMANIELLA FLORIDANA	0	1	0	1

1 YEAR POST-CONSTRUCTION INFAUNA SAMPLING ANALYSIS

PHYLOGENETIC LIST OF MACROINVERTEBRATE TAXA COLLECTED FROM DUVAL COUNTY,
DEC. 1992

PHYLUM PLATYHELMINTHES
CLASS TURBELLARIA
ORDER POLYCLADIDA
POLYCLADIDA SP
FAMILY STYLOCHIDAE
STYLOCHUS SP

PHYLUM NEMERTEA
NEMERTEA SP

PHYLUM MOLLUSCA
CLASS BIVAVIA
ORDER VENEROIDA
FAMILY DONACIDAE
DONAX VARIABILIS
ORDER MYOIDA
FAMILY CORBULIDAE
CORBULA CONTRACTA

PHYLUM ARTHROPODA
CLASS CRUSTACEA
ORDER MYSIDACEA
FAMILY MYSIDAE
BOWMANIELLA SP
ORDER AMPHIPODA
FAMILY HAUSTORIIDAE
HAUSTORIIDAE SP
HAUSTORIUS SP. A
PROTOHAUSTORIUS WIGLEYI
ORDER DECAPODA
DECAPOD MEGALOPS
FAMILY PINNOTHERIDAE
PINNIXA OF CRISTATA
FAMILY OGYRIDIDAE
OGYRIDES HAYI

Continued. Complete database of benthic fauna collected 22-Aug-91.

Area	Range	Depth	Taxa	A	B	C	Total
7A	50	0	PAGURUS POLITUS	0	1	1	2
7A	50	0	ACANTHOHAUSTORIUS PANSUS	0	1	0	1
7A	50	0	NEMERTEA SP.	1	0	0	1
7A	50	0	MYSIDACEA SP. (JUV)	0	0	1	1
7A	50	2	ACANTHOHAUSTORIUS PANSUS	1	11	4	16
7A	50	2	DONAX VARIABILIS	1	0	3	4
7A	50	2	MYSIDACEA SP. (JUV)	0	1	1	2
7A	50	2	NEMERTEA SP.	0	0	1	1
7A	50	2	BRACHYURA (MEGALOPS)	0	1	0	1
7A	50	4	ACANTHOHAUSTORIUS PANSUS	16	3	4	23
7A	50	4	NEMERTEA SP.	1	2	0	3
7A	50	4	CYCLASPIS PUSTULATA	0	0	1	1
7A	50	4	ONUPHIS EREMITA OCLATA	0	0	1	1
7A	50	4	EUDEVENOPUS HONDURANUS	1	0	0	1
7A	50	4	DONAX VARIABILIS	1	0	0	1
7A	100	0	DONAX VARIABILIS	3	1	2	6
7A	100	2	DONAX VARIABILIS	0	5	1	6
7A	100	2	ACANTHOHAUSTORIUS PANSUS	2	1	0	3
7A	100	2	NEMERTEA SP.	1	0	0	1
7A	100	4	DONAX VARIABILIS	0	1	3	4
7A	100	4	ACANTHOHAUSTORIUS PANSUS	1	2	0	3



FLORIDA DEPARTMENT OF STATE

Jim Smith
Secretary of State

DIVISION OF HISTORICAL RESOURCES

R.A. Gray Building
500 South Bronough
Tallahassee, Florida 32399-0250

May 7, 1993

Director's Office Telecopier Number (FAX)
(904) 488-1480 (904) 488-3353

Mr. A. J. Salem, Chief
Planning Division, Environmental
Resources Branch
Jacksonville District Corps of
Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

In Reply Refer To:
Denise M. Breit
Historic Sites
Specialist
(904) 487-2333
Project File No. 931003

RE: Second Renourishment of Jacksonville Beach from just South
of the Mayport Naval Air Station to the St. Johns County
Line
Duval County, Florida

Dear Mr. Salem:

In accordance with the procedures contained in 36 C.F.R., Part 800 ("Protection of Historic Properties"), we have reviewed the referenced project(s) for possible impact to archaeological and historical sites or properties listed, or eligible for listing, in the National Register of Historic Places. The authority for this procedure is the National Historic Preservation Act of 1966 (Public Law 89-665), as amended.

The mentioned U.S. Army Corps of Engineers Planning Division project application, issued by the Jacksonville District Office, has been reviewed by this agency. It is the opinion of this agency that because of the project location and/or nature the proposed project will have no effect on any sites listed, or eligible for listing, in the National Register of Historic Places. The project is also consistent with Florida's Coastal Management Program and its historic preservation laws and concerns, and may proceed.

If you have any questions concerning our comments, please do not hesitate to contact us. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

for *Laura A. Kammerer*
George W. Percy, Director
Division of Historical Resources
and

State Historic Preservation Officer

GWP/Bdb

March 25, 1993

Planning Division
Environmental Branch

Mr. Charles A. Oravetz, Chief
Protected Species Management Branch
National Marine Fisheries Service
9450 Koger Boulevard
St. Petersburg, Florida 33702

Dear Mr. Oravetz:

Pursuant to the Endangered Species Act, as amended, the U.S. Army Corps of Engineers, Jacksonville District, is requesting a list of any species or their critical habitat either listed or proposed for listing that may be present in the Duval County, Florida, beach disposal area (Project Map 1) as well as the offshore borrow area (Figure 1). The Corps of Engineers is currently preparing a Design Document with Environmental Assessment (EA) for construction of the second renourishment of Jacksonville Beach, Duval County, Florida. The project area begins at Atlantic Boulevard and extends south to the St. Johns County line (Project Map 1). The proposed plan calls for approximately 1,200,000 cubic yards of beach compatible material obtained from an offshore borrow site (Figure 1) to be placed along the reach shown in Project Map 1.

The point of contact for this study is Robert J. Brock at 904-232-2389.

Sincerely,

A. J. Salem
Chief, Planning Division

Enclosures



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, Florida 33702

May 6, 1993

Mr. A. J. Salem
Chief, Planning Division
Department of the Army, Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear Mr. Salem:

This responds to your April 7, 1993, request for information to include in the Environmental Assessment for construction of the second renourishment of Jacksonville Beach, Duval County, Florida. The project extends from south of the Mayport Naval Station to the St. Johns County line. We have no site specific information to offer at this time regarding existing resources in the project area.

Thank you for the opportunity to review the proposed project. Please continue to up-date us as project plans progress. If we can provide additional assistance, please contact Ms. Shelley Du Puy of our Panama City Branch Office at 904/234-5061.

Sincerely,

Andreas Mager, Jr.
Assistant Regional Director
Habitat Conservation Division

CC:
F/SEO2





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, FL 33702

May 7, 1993

F/SE013:JEB

A.J. Salem
Chief, Planning Division
Jacksonville District
U.S Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Mr. Salem:

This responds to your request for a list of endangered or threatened species which may occur in the vicinity of a proposed beach renourishment project at Jacksonville Beach, Duval County, Florida. Enclosed please find a copy of listed species under the jurisdiction of the National Marine Fisheries Service which may occur in the project area.

If you have any questions regarding listed species in this area please call Jeffrey Brown, Fishery Biologist, at (813) 893-3366.

Sincerely,

for Jeffrey Brown

Charles Oravetz, Chief
Protected Species Management
Branch

Enclosure



ENDANGERED AND THREATENED SPECIES AND CRITICAL HABITATS
UNDER
NMFS JURISDICTION

Florida: Atlantic Coast

<u>Listed Species</u>	<u>Scientific Name</u>	<u>Status</u>	<u>Date Listed</u>
finback whale	<u>Balaenoptera physalus</u>	E	12/02/70
humpback whale	<u>Megaptera novaeangliae</u>	E	12/02/70
right whale	<u>Eubaleana glacialis</u>	E	12/02/70
sei whale	<u>Balaenoptera borealis</u>	E	12/02/70
sperm whale	<u>Physeter catodon</u>	E	12/02/70
green sea turtle	<u>Chelonia mydas</u>	Th	07/28/78
hawksbill sea turtle	<u>Eretmochelys imbricata</u>	E	06/02/70
Kemp's (Atlantic) ridley sea turtle	<u>Lepidochelys kemp</u>	E	12/02/70
leatherback sea turtle	<u>Dermochelys coriacea</u>	E	06/02/70
loggerhead sea turtle	<u>Caretta caretta</u>	Th	07/28/78

SPECIES PROPOSED FOR LISTING

None

LISTED CRITICAL HABITAT

None

PROPOSED CRITICAL HABITAT

None Except for right whale

May ²⁶14, 1993

Planning Division
Environmental Branch

Mr. Charles A. Oravetz, Chief
Protected Species Management Branch
National Marine Fisheries Service
9450 Koger Boulevard
St. Petersburg, Florida 33702

Dear Mr. Oravetz:

The Jacksonville District, U.S. Army Corps of Engineers, is planning for construction of the second renourishment of Jacksonville Beach, Duval County, Florida. The first segment (northern reach) of the project area extends from just south of the Mayport Naval Station south to Atlantic Boulevard (Project Map 1). The second segment (southern reach) of the project area extends from Atlantic Boulevard south to the St. Johns County line (Project Map 2). It is anticipated that approximately 1.5 million cubic yards of beach compatible material obtained from an offshore borrow area (Vicinity Map) will be placed on the northern reach and 1.2 million cubic yards of beach compatible material on the southern reach.

Pursuant to Section 7(a) of the Endangered Species Act, please find enclosed the Biological Assessment (BA) addressing the concerns of the National Marine Fisheries Service (NMFS) contained in a letter dated 7 May 1993. The U.S. Army Corps of Engineers has determined that the proposed actions will not adversely affect any listed species under NMFS jurisdiction. We base this determination on the information presented in the enclosed BA and the conditions put forth in Section 6 on pages 7-8.

We request your concurrence on the above determination. If you have any questions or need any further assistance, please contact Robert J. Brock at extension 904-232-2389.

Sincerely,

A. J. Salem
Chief, Planning Division

Enclosures