

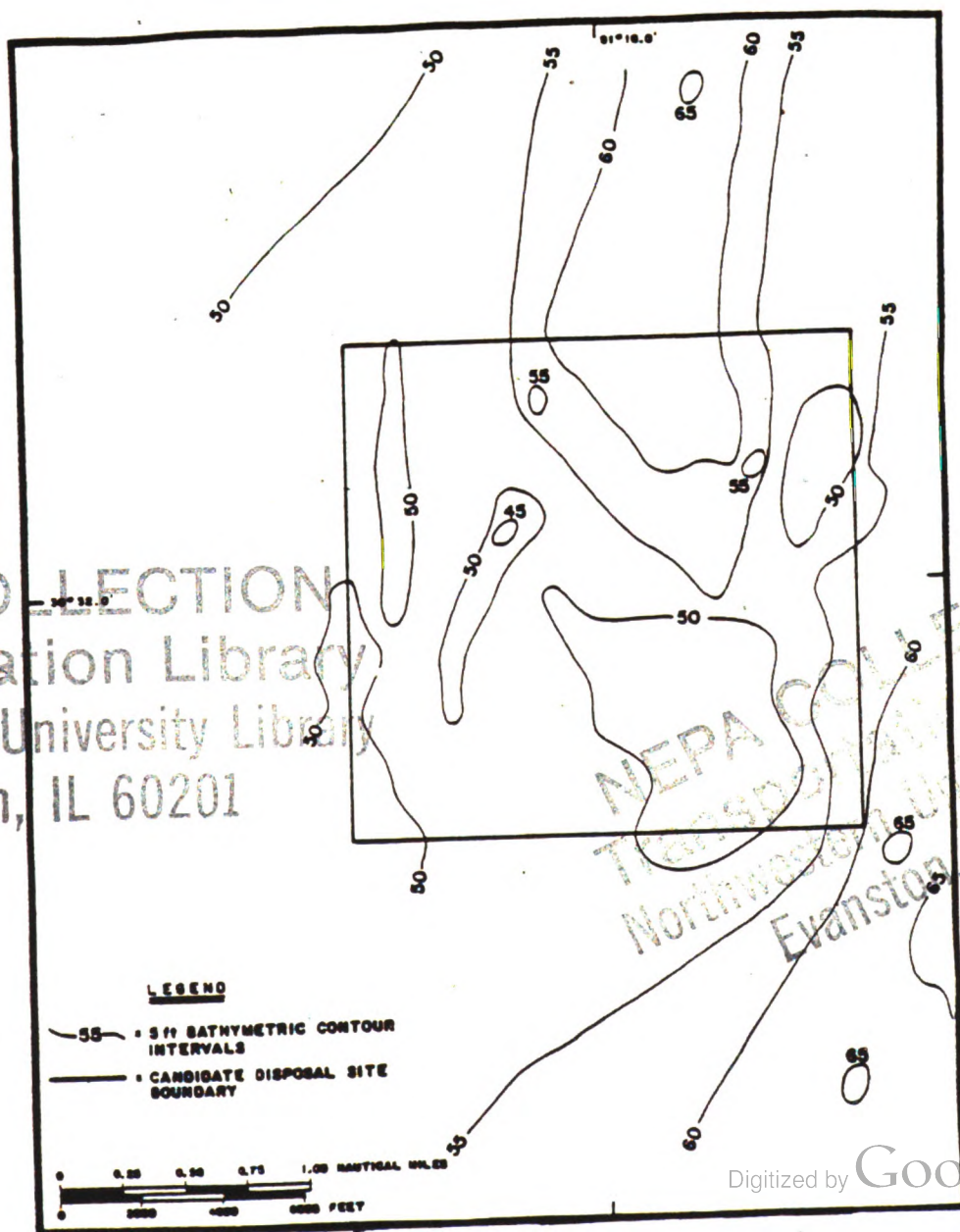


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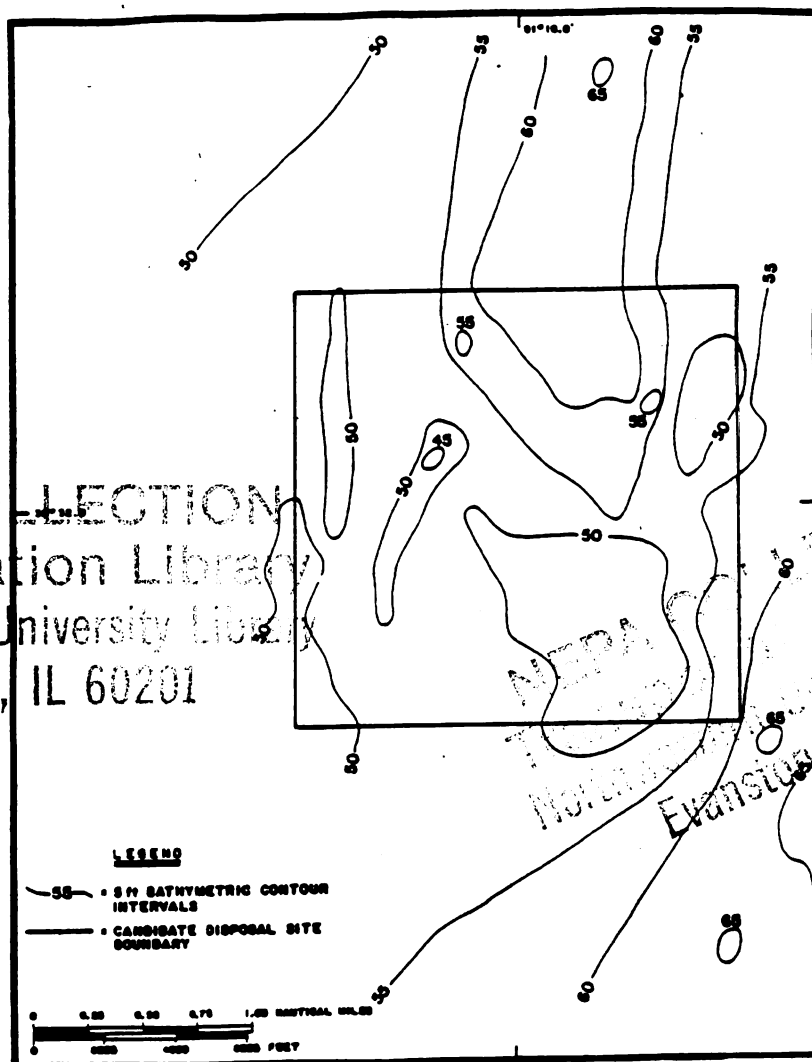
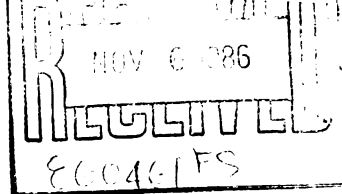
FINAL SUPPLEMENT TO THE  
JACKSONVILLE HARBOR OCEAN DREDGED  
MATERIAL DISPOSAL SITE FINAL ENVIRONMENTAL  
IMPACT STATEMENT FOR THE DESIGNATION  
OF A NEW FERNANDINA HARBOR, FLORIDA,  
OCEAN DREDGED MATERIAL DISPOSAL SITE  
NOVEMBER, 1986



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SUMMARY SHEET  
FINAL ENVIRONMENTAL IMPACT STATEMENT (EIS) SUPPLEMENT  
FOR DESIGNATION OF A NEW FERNANDINA  
HARBOR, FLORIDA, OCEAN DREDGED  
MATERIAL DISPOSAL SITE

- ☐ Draft
- ☒ Final
- ☐ Supplement to Draft
- ☒ Supplement to Final

1. Type of Action.

- ☒ Administrative/Regulatory action
- ☐ Legislative action

2. Description of the Proposed Action. The proposed action is to designate a new Fernandina Harbor, Florida, ocean dredged material disposal site (ODMDS). The purpose of the action is to adhere to the Marine Protection, Research, and Sanctuaries Act of 1972 by providing an environmentally acceptable ODMDS in compliance with the Ocean Dumping Regulations (40 CFR 220-229).

3. Environmental Effects of the Proposed Action. Use of the proposed site may potentially produce the following adverse environmental effects: (1) temporary water column perturbations (turbidity plumes, release of chemicals, lowering dissolved oxygen concentration); (2) smothering of the site's benthic biota; (3) changing the site bathymetry; and (4) altering the site's sediment composition. With regard to water column perturbations, the effects should be local and short-term and should have minimal effect on the region. Frequent movement of the dredged material discharge point should lessen mounding and changes to site bathymetry. In addition, a monitoring program could detect a potential concern and aid in the prevention of any undue adverse effects.

4. Alternatives to the Proposed Action. The alternatives to the proposed action are: (1) no action, the interim designation of the existing Fernandina Harbor ODMDS would expire in 1988 and thereafter its use must be discontinued; (2) designation of the existing interim Fernandina Harbor ODMDS; or (3) land disposal.

5. Federal, State, Public, and Private Organizations From Where Comments Have Been Requested: See section 7.00 of the Final EIS.

FINAL ENVIRONMENTAL IMPACT STATEMENT SUPPLEMENT FOR DESIGNATION OF A  
NEW FERNANDINA HARBOR, FLORIDA, OCEAN DREDGED MATERIAL DISPOSAL SITE

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## FINAL ENVIRONMENTAL IMPACT STATEMENT SUPPLEMENT

### DESIGNATION OF A NEW FERNANDINA HARBOR, FLORIDA, OCEAN DREDGED MATERIAL DISPOSAL SITE

#### 1.00 SUMMARY

##### 1.01 Major Findings and Conclusions.

There is a Need for a New Ocean Disposal Site - Projected estimates of new and maintenance material from the Fernandina region exceed the capacity of available land disposal sites and the existing interim designated Fernandina Harbor, Florida, ocean dredged material disposal site (ODMDS). The interim site's designation will expire in 1988; thus, an Environmental Protection Agency (EPA) approved ODMDS will not be available in the area.

Four Alternative Ocean Disposal Sites Were Evaluated as to Their Suitability for Designation Using EPA Guidelines - Four offshore locations were investigated utilizing the existing literature base and the site selection criteria promulgated in 40 CFR 228.5 and 228.6. The initial evaluation process eliminated two of the locations. During the field survey of the third location, extensive live-bottom biota were discovered thereby eliminating this location from further consideration. In the fourth location, there are minimal if any conflicts between its attributes and the site selection criteria. The no-action alternative and the land disposal alternative were also evaluated.

Proposed Action - Designation of a New Ocean Dredged Material Disposal Site for the Fernandina Harbor Area - The candidate site is centered at approximately 30°32'N latitude and 81°18'W longitude and its western boundary is located six nautical miles east of Amelia Island, Florida. The site, which has an area of about four square nautical miles is positioned in water depths of 45 to 63 ft.

1.02 Areas of Controversy. Utilizing the literature base and data from a baseline survey, the site was selected with full cognizance of the criteria set forth in 40 CFR 228.5 and 228.6. Because the selection process has been approached in this manner, there are no areas of controversy at this time.

1.03 Unresolved Issues. There are no major unresolved issues relating to the environmental consequences of this site designation. The State of Florida has raised objections to projects proposing to use the site for disposal of beach compatible sand. EPA's position on this issue is stated in the introduction to the comment/response section (page 53). National Marine Fisheries Service (NMFS) has recommended that measures be taken to ensure that disposal operations do not adversely effect the right whale population. EPA, NMFS, and the Corps are currently working to address these concerns. Protective measures for the right whale will be considered in the final rulemaking and, if warranted, in the public interest review of permits of activities requiring disposal at the site.

1.04 Relationship of Alternate Actions to Environmental Protection Statutes and Other Environmental Requirements. The relationship of the various alternative actions to environmental protection statutes and other environmental requirements is presented in Table 1.

TABLE 1

RELATIONSHIP OF ALTERNATIVE ACTIONS TO ENVIRONMENTAL  
PROTECTION STATUTES AND OTHER REQUIREMENTS

| Federal Policies  | No Action     | Upland Disposal | Interim Designated Site  | Candidate Site |
|---|---------------|-----------------|--------------------------|----------------|
| Preservation of Historical Archeological Data Act of 1974           | In Compliance | In Compliance   | In Compliance            | In Compliance  |
| National Historical Preservation Act of 1966, as amended            | In Compliance | In Compliance   | In Compliance            | In Compliance  |
| Clear Air Act, as amended   | In Compliance | In Compliance   | In Compliance            | In Compliance  |
| Clean Water Act of 1977   | In Compliance | In Compliance   | In Compliance            | In Compliance  |
| Coastal Zone Management Act of 1972                                 | In Compliance | N/A             | In Compliance            | In Compliance  |
| Endangered Species Act of 1973, as amended                          | In Compliance | In Compliance   | In Compliance            | In Compliance  |
| ~ Estuary Protection Act  | N/A           | N/A             | N/A                      | N/A            |
| Federal Water Project Recreation Act                                | N/A           | N/A             | N/A                      | N/A            |
| Fish and Wildlife Coordination Act                                  | In Compliance | In Compliance   | In Compliance            | In Compliance  |
| Land and Water Conservation Fund Act                                | N/A           | N/A             | N/A                      | N/A            |
| Marine Protection, Research and Sanctuaries Act of 1972, as amended | In Compliance | N/A             | In Compliance Until 1988 | In Compliance  |
| National Environmental Policy Act (NEPA)                            | N/A           | In Compliance   | In Compliance            | In Compliance  |
| River and Harbor Act  | N/A           | N/A             | N/A                      | N/A            |
| Watershed Protection and Flood Prevention Act                       | N/A           | N/A             | N/A                      | N/A            |
| Wild and Scenic Rivers Act  | N/A           | N/A             | N/A                      | N/A            |

TABLE 1 (Continued)

RELATIONSHIP OF ALTERNATIVES TO ENVIRONMENTAL  
PROTECTION STATUTES AND OTHER REQUIREMENTS

| Executive Orders   | No Action | Upland Disposal | Continued Use of Interim Designated Site | Candidate Site |
|--|-----------|-----------------|--|----------------|
| Flood Plain Management (E.O. 11988)<br>24 May 1977   | N/A       | N/A             | N/A                                      | N/A            |
| Protection of Wetlands (E.O. 11990)<br>24 May 1977   | N/A       | N/A             | N/A                                      | N/A            |
| Environmental Effects Abroad of Major Federal Actions (E.O. 12114)<br>4 January 1977   | N/A       | N/A             | N/A                                      | N/A            |
| <u>Executive Memorandum</u>  |           |                 |  |                |
| Analysis of Impacts on Prime and Unique Agricultural Lands in Implementing NEPA (CEQ Memorandum, 11 August 1980)                     | N/A       | N/A             | N/A                                      | N/A            |
| Interagency Consultation to Avoid or Mitigate Adverse Effects on Rivers in the Nationwide Inventory (CEQ Memorandum, 10 August 1980) | N/A       | N/A             | N/A                                      | N/A            |
| <u>State Policies</u>  |           |                 |  |                |
| Florida Coastal Zone Management Program  | N/A       | N/A             | In Compliance                            | In Compliance  |

## 2.00 PURPOSE AND NEED FOR ACTION

**2.01 Marine Protection, Research, and Sanctuaries Act.** Disposal of dredged material in the ocean is regulated by provisions in Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA) (PL 92-532). Section 103 requires that disposal activities will not unreasonably degrade or endanger human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities. As authorized by Section 102 of MPRSA, EPA prepared and had promulgated the final revision of Regulations and Criteria for Ocean Dumping (40 CFR 220-229) which established criteria for reviewing and evaluating permits and criteria for site selection. The purpose of the present action is to fulfill the provisions of MPRSA and 40 CFR 220-229, by presenting information needed to evaluate the suitability of a proposed ODMDS for final designation for continuing use.

**2.02 Fernandina Harbor, Florida.** Fernandina Harbor, Florida, has an interim ODMDS whose approval status will expire in 1988. Projected volumes of new and maintenance dredged material exceed the capacity of the interim ODMDS and available land disposal sites. The shallow depths in the interim designated ODMDS (approximately 30 feet in some areas) would preclude the use of some equipment such as hopper dredges (which can require water depths of 26-28 feet to operate) in future actions. The designation of a larger ODMDS located in deeper water is necessary if projected work in the Fernandina Harbor area is to proceed.

## 3.00 ALTERNATIVES

**3.01 Introduction.** The action proposed in this document is the final designation of an environmentally and economically acceptable ocean dredged material site offshore of Fernandina Harbor, Florida which will receive material dredged from that area. The designation of an ocean dredged material disposal site does not preempt any other disposal option but does insure that an ocean disposal option does exist. Individual disposal actions will continue to be evaluated on a case-by-case basis and the method of disposal that best serves the public interest, whether it be upland disposal, beach nourishment, or ocean disposal, will be selected. In addition to the interim designated site, four alternative sites are discussed to determine which is the most suitable as an ocean disposal site. This section also includes brief discussions of the no action and upland disposal alternatives. The environmental implications and effects of each alternative have been analyzed from available data and were screened on the basis of environmental and economic suitability.

**3.02 Land Disposal.** Land disposal alternatives are considered when evaluating the need for ocean disposal. Upland disposal areas are utilized for some work being done in the area, but the projected estimate of new and-maintenance material from the Fernandina region exceeds existing capacity. In addition, these sites need to be retained for disposal of material of a quality unsuitable for ocean disposal. Present indications are that easements for private land would not be available without lengthy and costly condemnation proceedings. Economic infeasibility precludes further evaluation of the land disposal alternative.

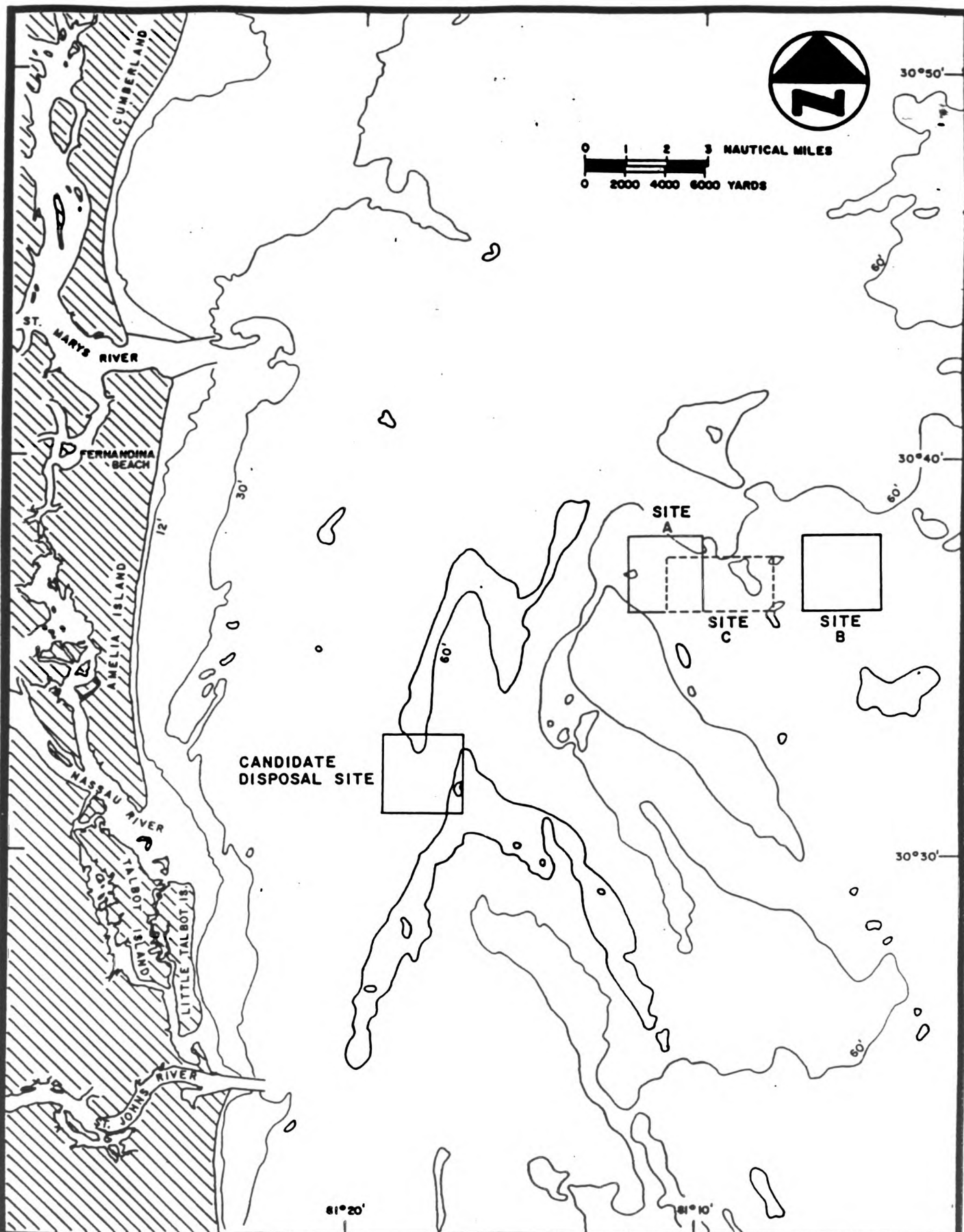
3.03 Interim Designated Site. The area of this site, centered at 30°41'30"N and 81°18'30"W, is 1.00 square nautical mile. This site does not have sufficient capacity to receive the projected quantities of dredged material from the Fernandina area without severe mounding and subsequent shoaling. As stated in 2.02 the shallowness of the site would preclude the use of some types of equipment at this site. Expansion of this site was considered, but the shallowness of the waters to the east, west, and south and the proximity of the channel to the north eliminated this option.

3.04 Selection of a New Ocean Dredged Material Disposal Site. Selection of an appropriate ocean disposal site requires identification and evaluation of suitable areas for receiving the dredged sediments. Identification relies on available information from previous oceanographic studies (synoptic and site-specific) and recommendations from State and Federal agencies. Selection of a specific site requires a sustained effort involving collection and analysis of both historical information and field survey data. Results of this effort led to the elimination of three alternate sites in the Fernandina Harbor area, leaving the proposed candidate site as the preferred alternative. A summary of the evaluation of the four alternative sites, shown in Figure 1, is presented below.

3.05 Alternate Site A. This site, centered at coordinates 30°37'N and 81°11'W, was initially investigated as being a preferred location of the designated ODMDS since it appeared that this area would comply with the selection criteria. During the initial screening, it was determined that the site was in too close proximity to four fish havens and was eliminated from further consideration.

3.06 Alternate Site B. The center of Site B (i.e., the candidate site recommended as a result of the interim evaluation) was placed about 4 nmi farther offshore at the same latitude as site A. Such placement offered no conflict with any known amenity or buffered zone yet offered sufficient depth within an economically transportable distance. Further investigations showed that by altering the configuration of this site from a 2.0 nmi by 2.0 nmi square to a 1.5 nmi by 2.67 rectangle, the location could be shifted approximately 3 nmi landward without impacting any amenities. A shift of 3 miles landward would result in a substantial reduction in the cost of hauling material to the disposal site. This modification eliminated the original proposed Site B from further consideration in the designation process.

3.07 Alternate Site C. This site, a 2.67 nmi by 1.5 nmi rectangle, resulted from the modification of Site B and was selected for site-specific investigation (i.e., field survey) as part of the final stage of the selection process. During the field survey, extensive rock ledges and hard bottom supporting sponges, hydroids, octocorals, and other live-bottom biota were discovered within the confines of Site C; therefore, it was also eliminated from consideration as the proposed ocean dredged material disposal site for the Fernandina Harbor region.



**FIGURE 1 LOCATION OF THE CANDIDATE FERNANDINA HARBOR DISPOSAL SITE AND ALTERNATE SITES A, B, AND C (ISOBATHS SHOWN IN FEET).**

3.08 Candidate Site (Preferred Alternative). The presence of hard bottom areas within the confines of Site C resulted in the selection of an alternate site for field survey in the Fernandina area. This fourth potential site, centered at 30°32'N latitude and 81°18'W longitude, is designated as the candidate site (i.e., preferred alternative) for final designation as an ocean dredged material disposal site to receive material generated by new and maintenance work from Fernandina Harbor, the harbor entrance channel, and the ocean portion of the Kings Bay Naval base channel. Evaluation of this site involved the integration of new and existing data in determining its ability to meet all criteria related to final designation. A comparison of the site's attributes with site selection criteria (40 CFR 228.5 and 228.6) is given in Section 5.0. The coordinates of the corners of this site are presented in Appendix B of the Draft EIS.

3.09 No Action. The no-action alternative would be to refrain from final designation of an EPA-approved ocean disposal site for the disposal of dredged material from the Fernandina Harbor area. Since the interim site designation will expire in 1988, the no-action alternative would dictate that no EPA-approved ocean disposal site would be available for future dredged material disposal, thus no action requiring ocean disposal could be implemented after 1988. The interim site could, and may, be used for disposal activities until its designation expires or until another site is designated.

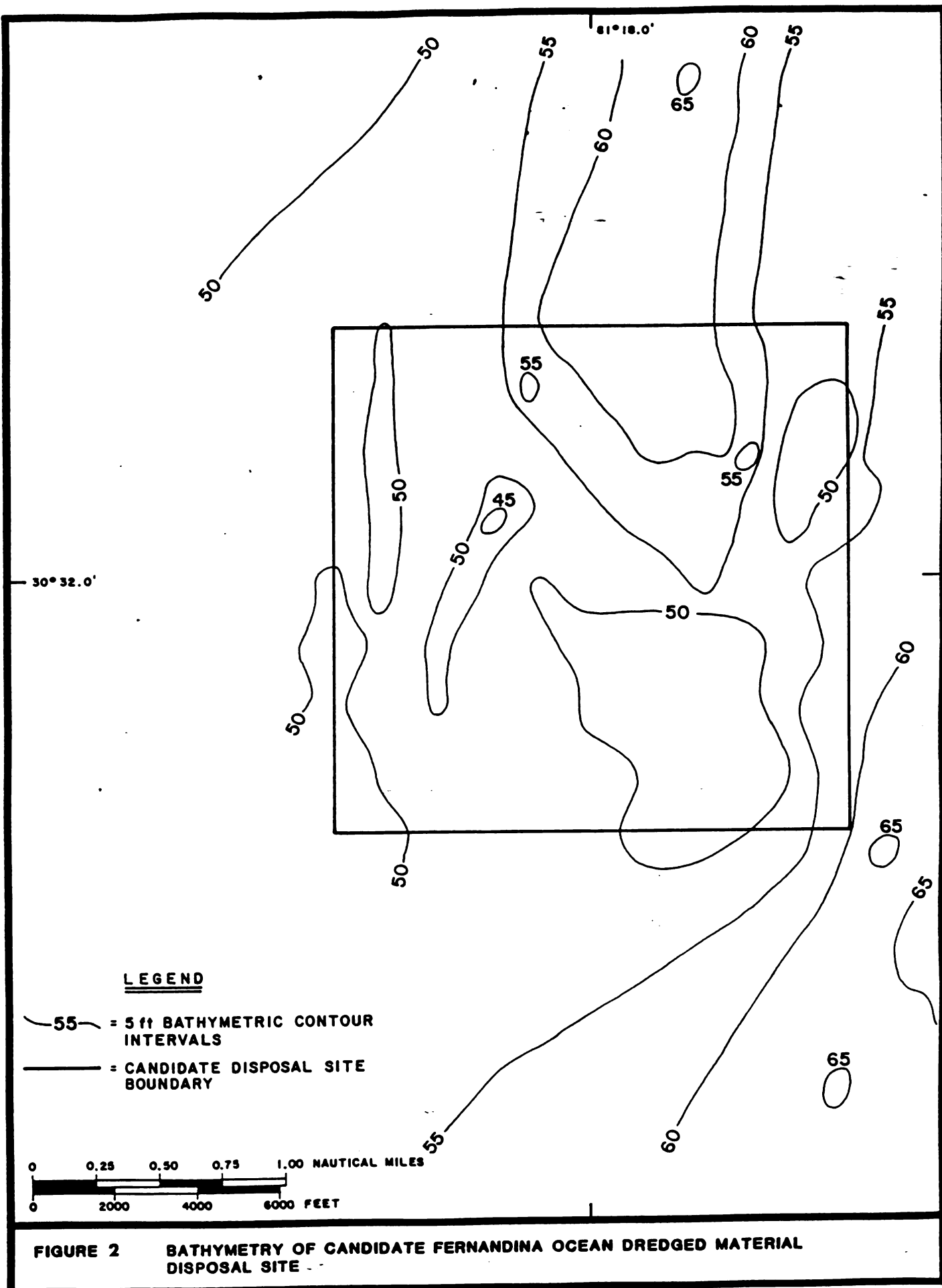
3.10 Preferred Alternative. The proposed or preferred alternative is the final designation of a new ocean dredged material disposal site for the Fernandina area. The preferred new site is the site referred to above as the "candidate site". This site, centered at approximately 30°32'N latitude and 81°18'W longitude, was evaluated and selected with full cognizance of the site selection criteria set forth in 40 CFR 228.5 and 228.6.

3.11 The candidate site does meet the eleven specific selection criteria (see 5.02 - 5.21 and Table 2). The candidate site is large enough and deep enough so that material disposed at the site will remain within the designated site boundaries and potential impacts outside the site will be minimized. The fine sand substrate is compatible with the materials that are likely to be placed at the site. The site is within an economically transportable distance, yet is sufficiently removed from amenities such as beaches and fish havens so that these will not be impacted.

#### 4.00 AFFECTED ENVIRONMENT

4.01 Introduction. The environmental characteristics in the region of the candidate site are discussed in this section. Information utilized in preparing this section was derived from the literature and from an on-site survey conducted in October, 1985 (CSA, 1986).

4.02 Geology The candidate site is located on the shallow continental shelf of the Georgia Bight. The topography is typical of that of a shallow shelf. The shelf in this region is relatively smooth (Zeigler and Patton, 1974;





U.S. EPA 1983), broken only by scattered broad, shallow depressions in the mid-shelf region (Heisburger and Field, 1975) and by localized hills and depressions (Moe, 1963). Moderate-relief reefs, commonly referred to as patch reefs, live bottoms, or hard bottoms are common in water depths from approximately 60 ft (18.3 m) to 200 ft (61 m) (Florida Sea Grant Program, 1979); however, no such features were found during the extensive survey of the site. (see Appendix A of the Draft EIS.)

4.03 Bathymetric data (Figure 4.1) from the candidate site indicate depths within the site ranging from 45 ft. (13.7 m) to 63 ft. (19.2 m). A north-south oriented trough with depths to 63 ft. (19.2 m) is situated in the northern section of the site.

4.04 The area's nearshore bottom sediments have been depicted by Pilkey et al. (1979) as being fine sands with occasional small patches of medium sands. In agreement with the letter findings, surficial sediments samples obtained from the candidate site had a sand-size texture which was predominated by fine-grained sand (CSA, 1986) (See Appendix A of the Draft EIS). The sand-sized fraction of all samples was greater than 88%.

4.05 Physical Characteristics. The Georgia Bight is generally divided into three hydrographic regimes: coastal, shelf, and Gulf Stream. The candidate site is in the coastal region and is thus heavily influenced by local climatic conditions and nearby rivers. The degree of mixing between waters in the coastal region and adjacent shelf region is dependent on the intensity of horizontal and vertical density gradients, tidal currents, and wind driven currents (Blanton and Atkinson, 1978). Currents in the Fernandina Project Area are mainly wind driven. Generally, flow is to the north from early spring to early summer, but to the south the remainder of the year (Bumpus, 1973). Net current flow is to the south. Current speeds are normally in the range of 0.1 to 0.2 nmi/h (Bumpus, 1973; Kourafalou et al., 1984). In this area, net movement by tidal currents is northerly along the isobaths at a speed of approximately 0.02 nmi/h (Kourafalou et al., 1984). The Gulf Stream, whose axis is some 90 nmi to the east, imparts very little influence on this area (Wang et al., 1984).

4.06 Temperature structure at the candidate site was relatively isothermal during the October 1985 sampling period; the greatest temperature differential in the water column at any sampling station was 1.5°C (CSA, 1986), (Appendix A of the Draft EIS). Temperature generally ranged from approximately 26.1°C to 26.5°C at the surface and decreased to approximately 25.1°C to 25.6°C near-bottom (48 to 63 ft). Near isothermal conditions were also present in March and December 1979 in comparable depths at a location some 10 nmi south (U.S. EPA, 1983). Temperatures in March ranged from 12.2°C to 13.5°C whereas those measured in December ranged from 17.0°C to 18.3°C (U.S. EPA, 1983).

4.07 Salinity in the coastal region varies seasonally and the amount of variation depends upon the proximity of river discharge (Mathews and Pashuk, 1982). Observed salinities (surface and near-bottom) at the candidate site and in a comparable region have ranged from 26.3 ppt to 35.5 ppt (CSA, 1986; U.S. EPA, 1983). Lowest salinities occur during periods of maximum discharge from nearby rivers.

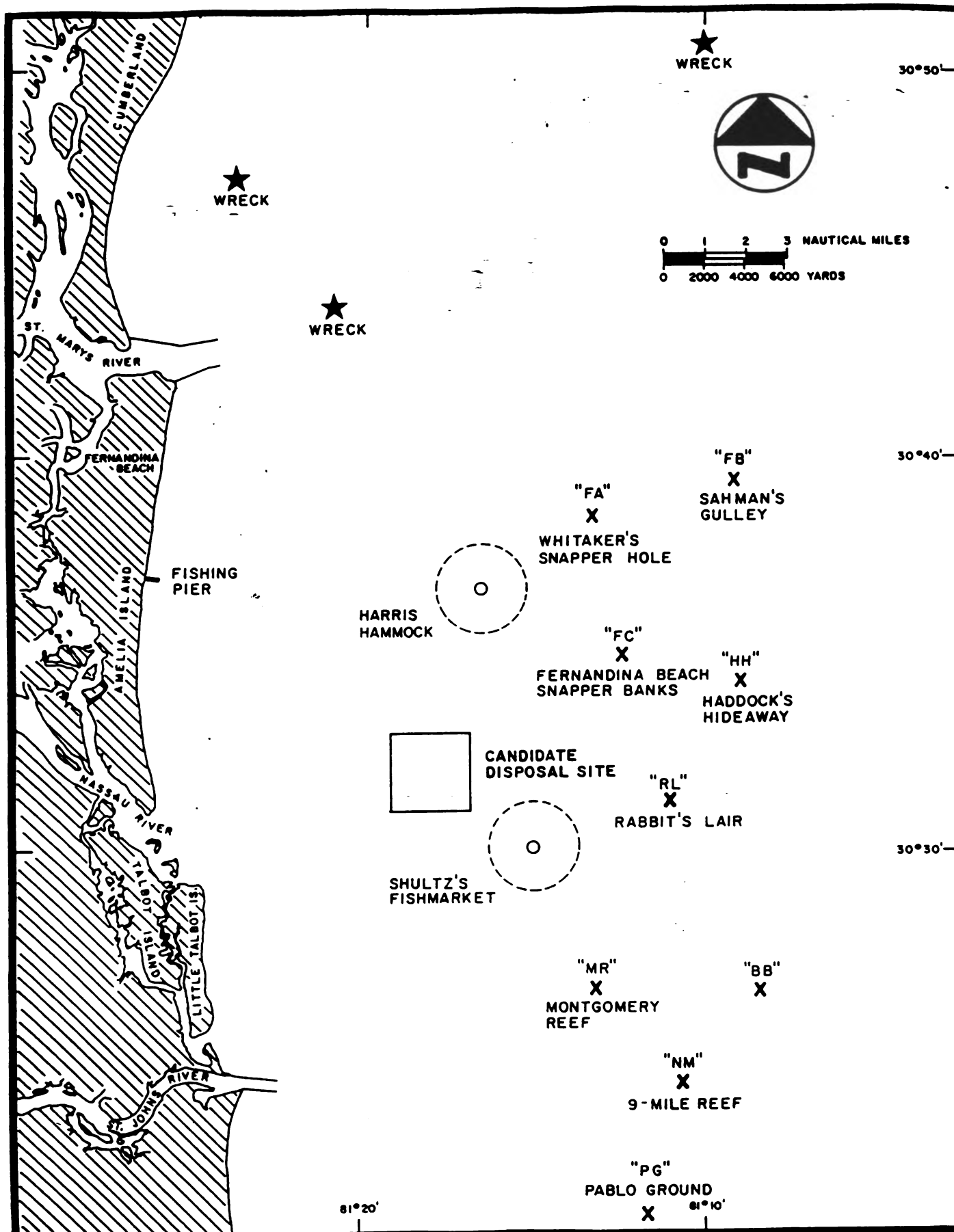
4.08 Chemical Characteristics. Dissolved oxygen values measured during the October, 1985 survey were within the range of those reported by Mathews and Pashuk (1982) for the continental shelf from North Carolina to Florida. Dissolved oxygen concentrations throughout the water column ranged from 5.4 to 7.1 ppm. Oxygen maxima were always located within the upper 20 ft of the water column and minima were present in depths from 40 ft to the bottom. Historical surveys in the same general region have never recorded the presence of either anoxic water or dissolved oxygen concentrations below the water quality criterion of 5 mg/liter (U.S. EPA, 1983.) concentrations below the water quality criterion of 5 mg/liter (U.S. EPA, 1983).

4.09 Samples for total suspended solids were collected near the bottom at the candidate site during the October, 1985 survey. Results of the analysis revealed concentrations ranging from 15 mg/l to 29 mg/l (CSA, 1986), (Appendix A of the Draft EIS). These data denote a mildly turbid condition probably resulting from an admixture of estuarine and oceanic waters. By comparison, total suspended solids under average oceanic conditions are in the range of 0.8 to 2.5 mg/l; whereas, suspended solid values in estuaries and rivers commonly exceed hundreds of mg/l (Horne, 1969). Texas Instruments, Inc. (1979) shows riverine influence in the region of the candidate site in all seasons but summer. Water at the site during the October, 1985 survey was visibly turbid (CSA, 1986). Vertical profiles of transmissivity correlate well with video and diver observations and with data from samples of total suspended solids. Transmissivity in near surface waters ranged from approximately 15% to 32%. In general, transmissivity was greatest (20% to 40%) in the mid-depth range (about 20 ft to 40 ft) then decreased to 4% to 15% in near bottom waters.

4.10 Results of water quality analyses for trace metals (mercury, cadmium, and lead), high molecular weight hydrocarbons, chlorinated pesticides, and PCBs collected at the candidate site were all below the limit of analytical detection. Limits of analytical detection were all below U.S. EPA (1976) water quality levels. Similar results were reported for a comparable region 10 nmi south of the candidate site (U.S. EPA, 1983).

4.11 Sediment samples from the candidate site were analyzed for trace metals (cadmium, lead, and mercury), high molecular weight hydrocarbons, oil and grease, total organic carbon, chlorinated pesticides, and PCBs. Values for all of the above parameters were classified as below the detection limit or in very low concentration (CSA, 1986).

4.12 Biological Characteristics. Phytoplankton populations at the candidate site are generally dominated by diatoms; however, dinoflagellates may become abundant during summer months (Hulbert, 1967; Roberts, 1974). In contrast to the latter, dinoflagellates dominate the waters of the Gulf Stream. Phytoplankton standing crop is higher in the nearshore region (inclusive of the candidate site) than the outer shelf or in the oceanic region (Hulbert and MacKenzie, 1971).



**FIGURE 3** LOCATION OF CANDIDATE SITE RELATIVE TO FISH HAVENS (X), WRECKS (★), AND SPORT FISHING GROUNDS (O).

4.13 Zooplankton populations in the candidate site are mainly composed of holoplanktonic organisms (those spending entire life cycle as plankton); however during the warmer months this dominance is reduced when large numbers of larval crustaceans (shrimp, crabs, and barnacles) and larval mollusks are present (USDOI, MMS, 1984). Bowman (1971) found that zooplankton standing stock decreased but species diversity increased in an offshore direction. In addition, he recognized specific zooplankton associations for water masses associated with coastal, shelf, and oceanic regions. The coastal region is characterized by a general abundance of copepods belonging to the species Acartia tonsa and Labidocera aestiva.

4.14 The survey conducted in October, 1985 (CSA, 1986) (Appendix A of the Draft EIS), indicates that the benthic ecology of the site is typical of that described by Struhsaker (1969) as "Coastal Habitat". Bottom sediment at the site is medium to very fine sand. This type of habitat, which occurs from estuaries and sounds out to about 60 ft, is found on most of the shelf region from Cape Hatteras to the Florida Keys and in the northern Gulf of Mexico. Commercially important species that are supported by this habitat and that were collected during the survey at the candidate site include shrimp, crab, croakers, spot, sea trouts, and red and banded drum. Data from the latter survey also indicate the presence of three distinct macroinfaunal assemblages whose spatial distribution correlates well with the distribution of sediment grain size. Biomass of these macroinfaunal assemblages was dominated by annelids, mollusks, and arthropods. The macroinfauna consisted of fishes, crustaceans, molluscs, echinoderms, sponges, cephalopods, and cnidarians. See Appendix C and Appendix D of the Draft EIS.

4.15 Rich assemblages of demersal fish (snapper-grouper complex) congregate around the numerous "fishing reefs" and live-bottom habitats located in water depths from 60 ft to 150 ft in the Georgia Bight (Struhsaker, 1969). The candidate site, whose average depth is about 52 ft, is at least two nautical miles from all known fish havens, artificial reefs, and fishing areas and no major assemblages were found during the survey. Freeman and Walford (1976); USDOI, BLM (1979); Aska and Pybus (1983). The survey indicates that the candidate site is typical of the coastal Georgia Bight Regime with no distinguishing physical, chemical or biological features. See Appendix A and Appendix E of the Draft EIS.

4.16 Endangered Species. The endangered species that may occur in the area of the candidate site include five whale species and four sea turtle species. Whale species include the finback whale (Balaenoptera physalus), humpback whale (Megaptera novaeangliae), right whale (Eubalaena glacialis), sei whale (Balaenoptera borealis), and sperm whale (Physeter catodon). The four endangered sea turtle species include the leatherback (Dermochelys coriacea), hawksbill (Eretmochelys imbricata), Kemp's Ridley (Lepidochelys kempi), and the green sea turtle (Chelonia mydas). The green sea turtle is considered endangered for Florida and east Pacific breeding populations, but threatened everywhere else. In addition, the loggerhead sea turtle (Caretta caretta) may also occur in the region of the candidate site; however, it is not on the endangered species list, but it is on the threatened species list (George Duray, 1986, personal communication, Office of Endangered Species, Washington, D.C.).

4.17 If it is not expected that dredged material disposal at the candidate site will adversely effect these species, as the area of the site is small in comparison to their total available ocean habitat and because of the wide-ranging habits of these species of concern. There is no indication that any past disposal activities have had any adverse effects on any species of concern.

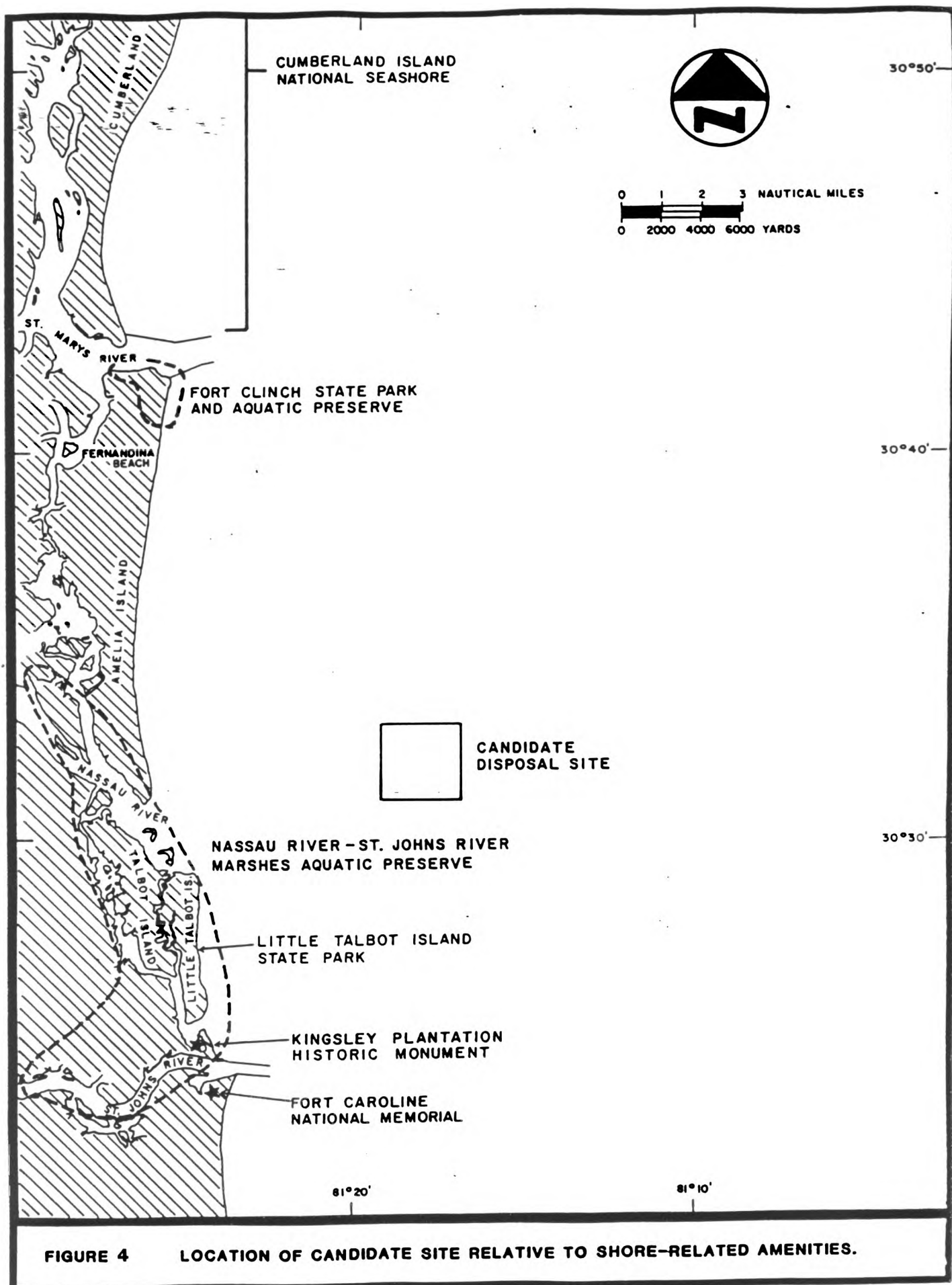
4.18 The U.S. Fish and Wildlife Service (FWS) has concurred with the determination that the designation will have no effect on the threatened or endangered species under their jurisdiction (see FWS comment letter in Section 8). The National Marine Fisheries Service (NMFS) has indicated that the effects of dredged material disposal in this area on right whales is unknown. NMFS has recommended that the site be desingated with seasonal restrictions or that disposal operation include a NMFS approved observer program (see NMFS comment letter on page 51). EPA and the Corps are currently evaluating various options to determine how best to accommodate proposed dredging schedules while also addressing the concerns of NMFS. Specific measures for the protection of the right whale will be addressed as a part of the public interest review of permit applications for projects that involve the disposal of dredged materials at the site.

4.19 Fish Havens, Wrecks, and Sport Fishing Grounds. "Fishing reefs" located off the coast between Fernandina and Jacksonville, Florida, are shown in Figure 3. This latter figure locates all known fish havens, artificial reefs, and fishing areas (e.g., hard banks) near the candidate site as reported by Moe (1963); Freeman and Walford (1976); USDOl, BLM (1979); Aska and Pybus (1983); USDOl, MMS (1984); and CSA (1985), (Appendix A of the Draft EIS).

4.20 Coastal Amenities. The region's shore-related amenities, which include parks, historic monuments, national memorials, aquatic preserves, and national seashores are shown on Figure 4. The Atlantic beaches between the St. Marys River and the St. Johns River are extensively used for recreational activities such as bathing, beach combing, fishing and picnicking.

4.21 Commercial Fisheries. Commercial fisheries in the Georgia Bight represented 10% and 5.9% of the total United States landings in 1981 in terms of weight and value, respectively (USDOl, MMS, 1984). Florida (East Coast) landings in the same year represented 14% and 39% of the Georgia Bight landings, in terms of weight and value, respectively. Ranked according to value, the 10 top commercial fisheries along Florida (East Coast) in 1981 were: (1) calico scallop, (2) shrimp, (3) various fish, (4) swordfish, (5) king mackerel, (6) spiny lobster, (7) groupers, (8) spanish mackerel, (9) blue crab, and (10) tilefish (USDOl, MMS, 1984).

4.22 From the above list, the main commercial fishery that may be present in the region of the candidate site is shrimp. In the Georgia Bight, white, brown, and pink shrimp are trawled in coastal waters with depths between 20 ft and 80 ft (USDOl, MMS, 1984). The shrimping year can be divided into three seasons: (1) the off-season, January through May; (2) brown shrimp



**FIGURE 4 LOCATION OF CANDIDATE SITE RELATIVE TO SHORE-RELATED AMENITIES.**

season, June through August; (3) white shrimp season, late August to December or January. During the off-season, some of the shrimpers go further off shore (to depths of approximately 850 ft to 1600 ft) to trawl for the royal red shrimp (USDOI, MMS, 1984).

## 5.00 ENVIRONMENTAL EFFECTS

5.01 Introduction. Criteria promulgated in 40 CFR 228.5 and 228.6 deal with evaluation of an ocean disposal location in relation to requirements for effective management to prevent unreasonable degradation of the marine environment from the material being dumped in the ocean. These criteria are used to form the basis of an environmental assessment of impacts at the candidate site. Criteria in 40 CFR 228.5 are titled "General criteria for the selection of sites", whereas those in 228.6 are titled "Specific criteria for site selection". Site evaluation utilized the literature base and baseline data collected at the site (CSA, 1986) to assess compliance with the criteria. Each criterion is addressed as it relates to the site's suitability as a disposal site and/or its capacity or ability to receive dredged material. Table 2 summarizes the application of the criteria.

5.02 Geographic position, depth of water, bottom topography, and distance from coast [40 CFR 228.6(a)1]. The candidate site is located on the shallow continental shelf off northeast Florida. More specifically, it is about 10 nmi southeast of the St. Marys River mouth and about 6 nmi east of the Nassau River mouth with the nearest landfall being the south end of Amelia Island, 6 nmi to the west of the site (Figure 1). The bathymetric map of the candidate site (Figure 2) shows sparse scattering of low hills or ridges. Water depths within the site range from 45 to 63 ft. The topography of the site is typical of that of the shallow shelf. The shelf in this region is relatively smooth (Zeigler and Patton, 1974; U.S. EPA, 1983), broken only by scattered broad shallow depressions in the mid-shelf region (Meisburger and Field, 1975) and by localized hills and depressions (Moe, 1963) (See Figure 5).

5.03 Location in relation to breeding, spawning, nursery, feeding, or passage areas of living resources in adult or juvenile phases [40 CFR 228.6(a)2]. A great deal is known about the general life-cycle of area fish and shellfish. Many of the area's species spend their adult lives in the offshore region but are estuary dependent in that their juveniles utilize a low salinity estuarine nursery region. Specific migration routes, from offshore to the estuaries and return, in the Fernandina area are unknown. The candidate site is, however, at least six nautical miles from the mouth of an estuary and thus should not encumber migratory passage. In addition, the site is not known to be located in any major breeding or spawning area.

TABLE 2

SUMMARY OF THE SPECIFIC CRITERIA AS APPLIED TO  
THE INTERIM DESIGNATED SITE AND THE CANDIDATE SITE

| Criteria as Listed<br>in 40 CFR § 228.6   | Interim Designated<br>Site   | Candidate Site  |
|---|--|---|
| 1. Geographical position<br>depth of water, bottom<br>topography and distance<br>from coast.  | See fig. 6; 28-46 feet<br>sand, silt, clay; flat<br>6 miles from coast.  | See Fig. 6; 45-63 feet<br>primarily fine sand<br>flat with scattered ele-<br>vations and depressions<br>6 miles from coast. |
| 2. Location in relation<br>to breeding, spawning,<br>nursery, feeding, or<br>passage of living<br>resource in adult or<br>juvenile phases.                          | None within 2 miles.<br>Six miles from nearest<br>estuary (St. Marys<br>River)                                     | None within 2 miles.<br>Six miles from nearest<br>estuary (Nassau River)  |
| 3. Location in relation<br>to beaches and other<br>fishing amenity areas.   | Six miles from coast;<br>within 2 miles of wreck<br>5-6 miles from fishing<br>grounds.                             | Six miles from coast;<br>over two miles from<br>fishing ground.   |
| 4. Types and quantities<br>of wastes proposed to be<br>disposed of, and proposed<br>methods on release,<br>including methods of<br>packing the wastes, if<br>any.   | Maximum 2.0 mcy of<br>undetermined propor-<br>tions of rock, sand and<br>silt by barge.                            | 5.1 mcy of undetermined<br>proportions of rock, sand<br>and silt by hopper dredge<br>or barge.                              |
| 5. Feasibility of<br>surveillance and<br>monitoring.  | Surveillance possible<br>by boat or plane.   | Same as interim site.   |
| 6. Dispersal, horizontal<br>transport, and vertical<br>mixing characteristics<br>of the area, including<br>prevailing current<br>direction and velocity,<br>if any. | Flow to north from<br>early spring to summer.<br>Flow to south for<br>remainder of year.<br>Net flow to the south. | Same as interim site.<br>Currents range in velo-<br>city from 0.02 nmi/hr to<br>0.38 nmi/hr.                                |



TABLE 2 (Continued)

SUMMARY OF THE SPECIFIC CRITERIA AS APPLIED TO  
THE INTERIM DESIGNATED SITE AND THE CANDIDATE SITE

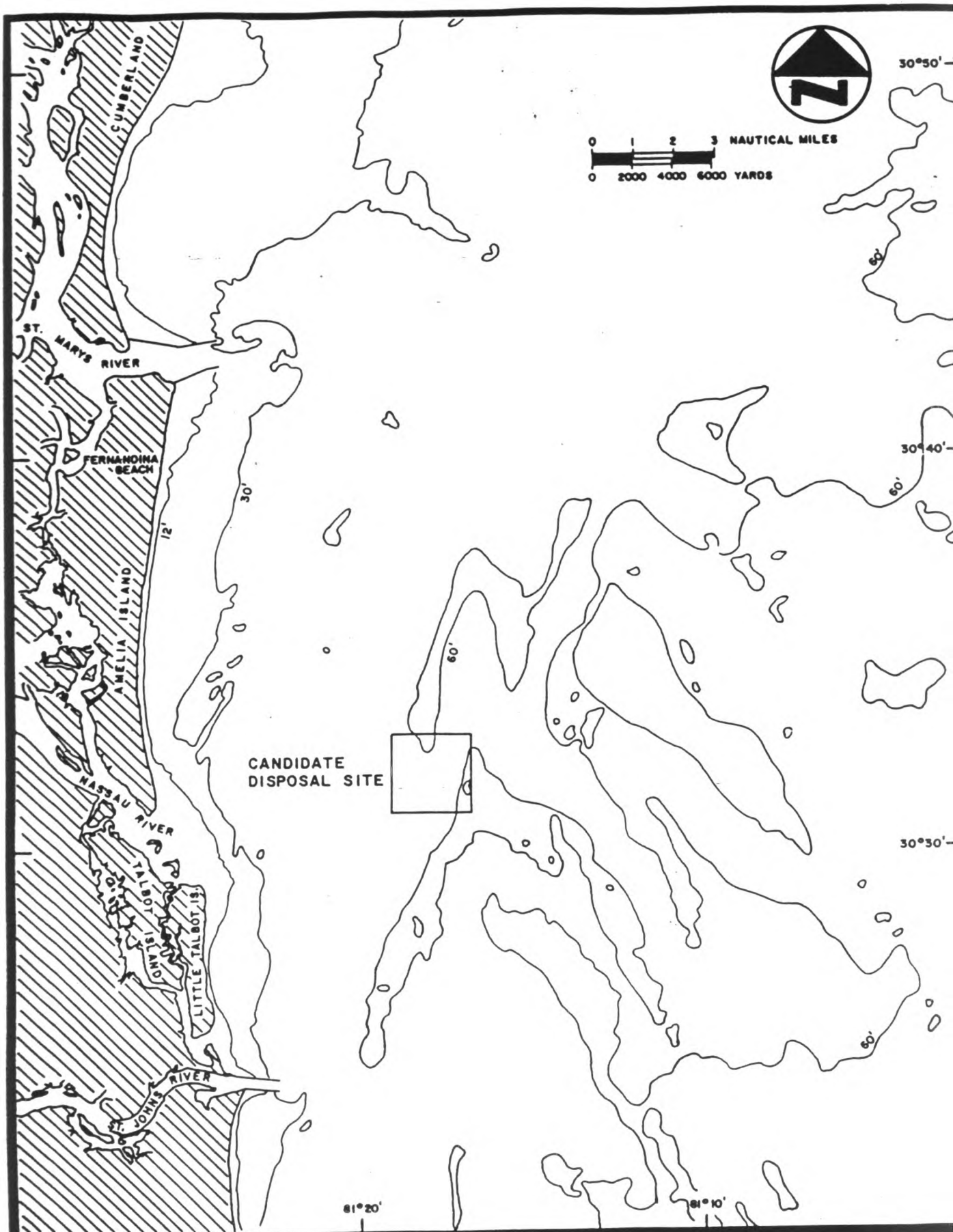
| Criteria as Listed<br>in 40 CFR § 228.6  | Interim Designated<br>Site   | Candidate Site   |
|--|--|--|
| 7. Existence and effects of current and previous discharges and dumping in the area (including cumulative effects.)  | 6.75 mcy have been disposed of at this site since 1978.  | No previous discharges.  |
| 8. Interference with shipping, fishing, recreation, mineral extraction, fish and shellfish culture, area of special scientific importance, and other legitimate uses of the ocean. | Within 1 nm of Fernandina channel. Nearest fishing grounds over 2 nm distant.                      | Three nautical miles from Jacksonville anchorage. Nearest fishing grounds over 2 nm distant. |
| 9. The existing water quality and ecology of the sites as determined by available data, and by baseline surveys.   | Mixing of oceanic and St. Marys River water. Shelf habitat that has been covered by sand and silt. | Mixing of oceanic and Nassau River water. Typical shelf habitat.                             |
| 10. Potentiality for the development or recruitment of nuisance species in the disposal sites.   | No nuisance species have developed.  | Disposal would have effects similar to those of the interim designated site.                 |
| 11. Existence at or in close proximity to the site of any significant natural or cultural features of historical importance.   | No known features.   | No known features.   |

5.04 Location in relation to beaches and other amenity areas [40 CFR 228.6(a)3]. The candidate site is six nautical miles east of the nearest beach and shore-related amenity. Shore-related amenities include Cumberland Island National Seashore, Fort Clinch State Park and Aquatic Preserve, Nassau River-St. Johns River Marshes Aquatic Preserve, Little Talbot Island State Park, Kingsley Plantation Historic Monument, and Fort Caroline National Memorial (Figure 4). Currents in the vicinity of the site are predominantly north-south (Bumpus, 1973), which, in effect, further isolates the site from the beaches and coastal amenities. If disposed material should reach the beach areas, it will be in a low, if not undetectable concentrations.

5.05 Types and quantities of wastes proposed to be disposed and Proposed methods of release, including methods of packing the waste, if any [40 CFR 228.6(a)4]. The candidate site will be used for disposal of new and maintenance material that will be dredged from the Fernandina area. Approximately 9.5 million cubic yards of new material will be generated by prospective projects. Of the latter amount, up to 5.1 million cubic yards of undetermined proportions of rock, sand, silt, and clay are scheduled for disposal at the candidate site (Gordon Holmes, personal communication, 1986, Jacksonville District, COE). This material will be transported and discharged by hopper dredge and/or towed dump scow (James Hilton, 1985, personal communication, Jacksonville District, COE). The site will also receive a yet unknown amount of material from future maintenance dredging. Analyses of the sediments proposed for disposal indicate that no contaminants are present in unacceptable levels (see Appendix F and Appendix G of the Draft EIS).

5.06 Feasibility of surveillance and monitoring [40 CFR 228.6(a)5. The geographic and physical setting of the candidate site poses no special problems for monitoring or surveillance. The site is in shallow water (45 to 63 ft) and its area is relatively large (approx. 4 nmi<sup>2</sup>). Water depth at the site is amenable to diver collection or surface sampling and does not require use of a large, specialized surface vessel. The areal extent of the site allows use of towed trawls for bottom and water column sampling. Baseline data collected at the site (CSA, 1986) can serve as reference information for future monitoring and aid in assessing possible perturbations resulting from disposal at the site. The only foreseeable hindrance to surveillance and monitoring is that occasionally the site is bathed by somewhat turbid waters of riverine origin. Photodocumentation of the bottom may not be possible during these turbid water periods. Logistically, site surveillance can be accomplished via air from a commercial airport (approx. 25 nmi) or by water from the Mayport or Fernandina areas (approx. 10 to 15 nmi).

5.07 Dispersal, horizontal transport, and vertical mixing characteristics of the area including prevailing current direction and velocity, if any [40 CFR 228.6(a)6]. Currents in the Fernandina Project Area are mainly wind driven. Flow is to the north from early spring to summer but to the south for the remainder of the year (Bumpus, 1973). Net current flow is to the south. Current speeds are normally in the range of 0.1 to 0.2 nmi/h (Bumpus, 1973; Kourafalou et al., 1984). The three-day period of near-bottom current measurements at the site during the baseline survey showed an almost



**FIGURE 5** LOCATION OF CANDIDATE DISPOSAL SITE RELATIVE TO COASTAL FEATURES (ISOBATHS SHOWN IN FEET).

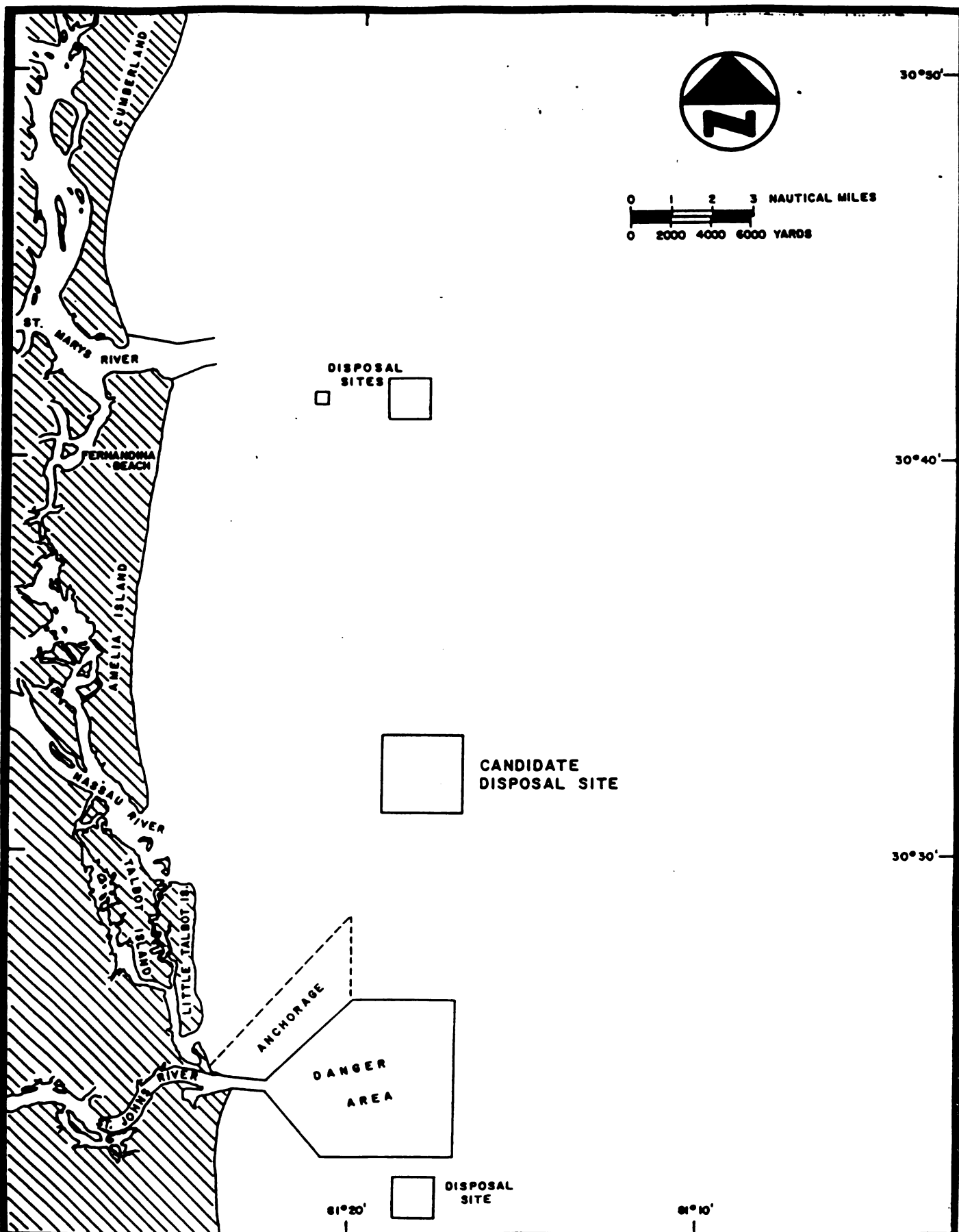
equal predominance of north and south flow (CSA, 1986). Sixty-seven percent of the current speeds were within the range of 0.12 to 0.29 nmi/h (6 to 15 cm/sec), 23% were slower, and 10% were faster [0.3 to 0.38 nmi/h (16 to 20 cm/sec)]. In this area, net movement by tidal currents is northerly along the isobaths at a speed of approximately 0.02 nmi/h (Kourafalou et al., 1984). The Gulf Stream, whose axis is some 90 nmi to the east, imparts very little direct influence on this area (Wang et al., 1984). As stated in 5.06, the site is subject to incursions of turbid river water.

5.08 Existence and effects of current and previous discharge and dumping in the area (including cumulative effects) 40[CFR 228.6(a)7]. There have been no previous discharges at the candidate site. Nearby active disposal sites include Jacksonville Harbor dredged material site (10 nmi south) and the interim designated Fernandina Harbor dredged material site (9 nmi north). A small, discontinued-use disposal site is located inshore of the Fernandina Harbor dredged material site. Locations of these sites in relation to the candidate site are shown in Figure 6.

5.09 Interference with shipping, fishing, recreation, mineral extraction, fish and shellfish culture, areas of special scientific importance, and other legitimate uses of the ocean [40 CFR 228.6(a)8]. Shipping - Other than the hopper dredges' or towed barges' use of designated ship channels on their trips to and from the disposal area, the site and its use should not interfere with shipping activities. Safety Fairways are not designated along the east Florida coast or in the Georgia Bight (USDOT, MMS, 1984). In addition, ship traffic is not heavy in the region of the candidate site (NOAA, 1980). The nearest anchorage is north of the St. Johns River, approximately three nautical miles from the candidate site (see Figure 6).

5.10 Fishing and Recreation - Rich assemblages of demersal fish congregate around the numerous "fishing reefs" located off the coast between Jacksonville and Fernandina (Struhsaker, 1969). The candidate site should not appreciably interfere with fishing activities in the area because, as shown in Figure 3, the site is at least two nautical miles from all known fish havens, artificial reefs, and fishing areas (e.g., hard banks) as reported by Moe (1963); Freeman and Walford (1976); USDOT, BLM (1979); Aska and Pybus (1983); USDOT, MMS (1984); and CSA (1985b). Commercially important species (red and black drum, sea trout, king fish, spot, croaker, shrimp, and crab) occur in the open-shelf habitat of the area but none of the fisheries are limited to the region (U.S. EPA, 1983). The site is not located in a region of major commercial importance (Moe, 1963; Struhsaker, 1969; USDOT, MMS, 1984).

5.11 Mineral extraction, desalination, fish and shellfish culture, and areas of special scientific importance - The candidate site will not interfere with the above parameters, because their presence or activity in the region is not known to exist. Future exploration for oil and gas or sand extraction for beach renourishment projects should not be hindered by the candidate site or associated activities.



**FIGURE 6** LOCATION OF CANDIDATE SITE RELATIVE TO ANCHORAGE AND EXISTING DISPOSAL SITES.

5.12 Other legitimate uses of the ocean - Items that may be included in this category are a short pipeline extending seaward from the north end of Amelia Island (NOAA Chart-11502, 19th edition) and a telecommunication cable extending seaward from a location approximately three nautical miles south of the St. Johns River mouth (NOAA Chart 11488, 16th edition). The candidate site is approximately 6 nmi removed from the pipeline and 13 nmi from the telecommunication cable. There is no reason to believe that use of the candidate site will interfere with the above entities or their activities.

5.13 The existing water quality and ecology of the site as determined by available data or by trend assessment or baseline surveys [40 CFR 228.6(a)9]. As evidenced from the baseline survey (CSA, 1986), water quality at the candidate site is influenced by the oceanic and riverine environments. Influence of coastal rivers can be easily detected by the presence of turbid water and a salinity of less than 36 ppt. Turbid waters were present at the candidate site during the baseline study. Texas Instruments, Inc. (1978) shows riverine influence in the region of the candidate site in all seasons but summer. Except for suspended solids (a measure of turbidity), values for water quality parameters analyzed pursuant to the baseline survey were below the limit of detection. Dissolved oxygen at the site (5.2 to 7.2 ppm), as determined in the baseline survey (CSA, 1986), is adequate to maintain aquatic life (U.S. EPA, 1976).

5.14 The baseline survey (CSA, 1986), (Appendix A of the Draft EIS) indicates that the ecology of the site is typical of that described by Struhsaker (1969) as "Coastal Habitat." Bottom sediment at the site is medium to very fine sand. This type of habitat, which occurs from estuaries and sounds out to about 60 ft, is found on most of the shelf region from Cape Hattaras to the Florida Keys and in the northern Gulf of Mexico. Commercially important species that are supported by this habitat and that were collected during the baseline survey at the candidate site include shrimp, crab, croaker, spot, sea trout, and red and banded drum. Candidate site baseline data indicate the presence of three distinct macroinfaunal assemblages whose spatial distribution correlates well with the distribution of sediment grain size. Biomass at a great majority of the baseline macroinfaunal stations was dominated by annelids, mollusks, and arthropods.

5.15 Potentiality for the development or recruitment of nuisance species in the disposal site [40 CFR 228.6(a)10]. Disposal of dredged material should not attract or promote development of nuisance species. New material should contain little to no fecal coliform bacteria, but these organisms may be present in maintenance dredged material. Even with disposal of maintenance material, it is improbable that fecal coliform bacteria will become established under temperature and salinity conditions existing at the site.

5.16 Existence at or in close proximity to the site of any significant natural or cultural features of historical importance [40 CFR 228.6(a)11]. Features identified as possibly being relevant to this criterion are shown in Figures 3 and 4. The candidate site is at least six nautical miles from any identified feature on land and even further from identified wrecks-at-sea.

5.17 The dumping of materials into the ocean will be permitted only at sites or in areas selected to minimize the interference of disposal activities with other activities in the marine environment, particularly avoiding areas of existing fisheries or shellfisheries, and regions of heavy commercial or recreational navigation [40 CFR 228.5(a)]. As detailed in Section 5.09, the boundary of the candidate site is at least two nautical miles from any identified major fisheries, shellfisheries, or area of recreational use. The site is far removed from any safety fairway, channel, or anchorage. Location of the candidate site in relation to the region's sport fishing and recreational areas are shown on Figure 3; shipping channels and anchorages are shown on Figure 6.

5.18 Locations and boundaries of disposal sites will be so chosen that temporary perturbations in water quality or other environmental conditions during initial mixing caused by disposal operations anywhere within the site can be expected to be reduced to normal ambient seawater levels or to undetectable contaminant concentrations or effects before reaching any beach, shoreline, marine sanctuary, or known geographically limited fishery or shellfishery [40 CFR 228.5(b)]. It is expected that temporary perturbations in water quality will be reduced to ambient or undetectable levels within a short distance of the release point. The location of the candidate site should be in compliance with this part of the criterion because the boundary of the candidate site is at least six nautical miles from any beach, shoreline, or marine sanctuary (see Figure 4) and the prevailing currents are parallel to the shore, effectively isolating the candidate site from these features. Fisheries are not geographically limited in the Fernandina Project Area (Moe, 1963; Struhsaker, 1969; USDOI, MMS, 1984).

5.19 If at anytime during or after disposal site evaluation studies, it is determined that existing disposal sites presently approved on an interim basis for ocean dumping do not meet the criteria for site selection set forth in 228.5 and 228.6, the use of such sites will be terminated as soon as alternate disposal sites can be designated [40 CFR 228.5(c)]. This criterion is not applicable for the initial selection or designation of a disposal site.

5.20 The sizes of ocean disposal sites will be limited in order to localize for identification and control any immediate adverse impacts and permit the implementation of effective monitoring and surveillance programs to prevent adverse long-range impacts. The size, configuration, and location of any disposal site will be determined as part of the disposal site evaluation or designation study [40 CFR 228.5(d)]. The size of the site has been set at approximately four square nautical miles. The projected amount of material that will require ocean disposal dictates a large disposal area. A smaller disposal area would have potential problems with mounding and would provide a much smaller area in which mixing could occur. A monitoring program will be implemented on an as-needed basis to determine whether or not disposal at the site is significantly affecting adjacent areas and to detect the presence of long-term adverse effects. A

monitoring plan will be developed on a case-by-case basis taking into account such factors as the type of materials to be disposed, the constituents of the material, and the type of equipment that will be used. At a minimum, the monitoring program will consist of bathymetric surveys, sediment grain size analyses, chemical analysis of selected constituents in the sediments, and chemical analysis of tissues from commercially important benthic organisms.

5.21 EPA will, whenever feasible, designate ocean dumping sites beyond the edge of the continental shelf and other such sites that have been historically used [40 CFR 228.5(e)]. The continental shelf is very wide (over 70 nmi) in the Fernandina Project Area (Meisburger and Field, 1975). Such a distance would not only be economically prohibitive but also place the site in water depths that would preclude meaningful benthic monitoring if trend assessment is desired. The Fernandina Harbor interim designated site (area -1.0 square nautical mile) is not sufficient in size to entirely accommodate the quantity of material that will be generated by projected projects and would preclude the use of some types of equipment. Expansion of the site is not practical because the shallow depths of the waters around the interim site would continue to preclude the use of some types of equipment.

5.22 Relationship Between Short-Term Use and Long-Term Productivity. Disposal operations should not significantly interfere with the long-term use of any resources at the candidate site. Commercial fishing and sport fishing at or near the candidate site should not be significantly affected because the site is not known to be located in a limited fishery area. In addition, the site constitutes only a very small part of the Georgia Bight inhabited by commercially important species. It is not anticipated that short-term perturbations at the site will significantly affect the long-term productivity of the region.

5.23 Irreversible or Irretrievable Commitments of Resources. Resources irreversibly or irretrievably committed through use of the proposed site will include: (1) loss of fuel to transport the dredged material to the site; (2) loss of some potentially recyclable material (i.e., sand for land fill); and (3) loss of some benthic organisms that will be smothered during disposal operations.

5.24 Unavoidable Adverse Environmental Effects and Mitigating Measures. Use of the proposed site may potentially produce the following adverse environmental effects: (1) temporary water column perturbations (turbidity plume, release of chemicals, lowering dissolved oxygen concentration); (2) smothering of the site's benthic biota; (3) changing the site bathymetry; and (4) altering the site's sediment composition.

5.25 With regard to water column perturbations, the effects should be local and short-term and should have minimal effect on the region. Under normal conditions the region is periodically inundated with turbid waters of riverine origin. Some adverse effects of disposal activities can be lessened



through proper management of the disposal site. Mounding of disposed material can be prevented through judicious placement and movement of the dump buoy and periodically monitoring the site's bathymetry. Effects outside the disposal site can be minimized by confining most disposal activities to the central half of the site. In addition, a monitoring program could detect a potential concern and aid in the prevention of any undue adverse effects that might occur outside the boundaries of the site. The composition of site sediments will be altered because of the introduction of rock, silt, and clay. The rock will not move off-site under any circumstances. Because of the large area of the site and the depth of the site, any movement of the finer fractions that may be induced by major storms or hurricanes should be confined within the boundaries of the site. Any sediments that do move off-site would cause only negligible impacts since they would not be incompatible with surrounding sediments and would tend to be masked by the input of similar sediments by the Nassau River.

The following people were primarily responsible for preparing this document:

| <u>Name</u>         | <u>Expertise</u>                  | <u>Experience</u>  | <u>Contribution</u>   |
|---------------------|-----------------------------------|--|---|
| Mr. Dan Malanchuk   | Biologist                         | 10 years EIS studies   | EIS Coordination  |
| Dr. Bela James      | Biological<br>Oceanographer       | 3 years, senior scientist with<br>CSA; 11 years, senior scientist<br>with TerEco Corporation | Site selection criteria,<br>interpretation of<br>hydrographic and water quality<br>data |
| Dr. E.A. Kennedy    | Oceanographer                     | 3 years, senior scientist with<br>CSA; 11 years, senior scientist<br>with TerEco Corporation | Introduction,<br>interpretation of sediment<br>and epifaunal data                       |
| Dr. Alan Hart       | Biostatistician,<br>Oceanographer | 4 years, senior scientist with<br>CSA; 2 years, research<br>associate, Texas A&M University  | Statistical analyses,<br>meiofaunal and<br>macroinfaunal data analyses                  |
| Mr. Keith Spring    | Biological<br>Oceanographer       | 5 years, senior staff scientist<br>with CSA  | Overall project<br>coordination, field<br>and lab methodologies,<br>video data analyses |
| Dr. David Gettleson | Biological<br>Oceanographer       | 10 years, senior scientist,<br>Vice-President, and Scientific<br>Director of CSA             | Technical review  |
| Dr. Richard Hammer  | Oceanographer                     | 5 years, senior scientist with<br>CSA  | Technical review  |

7.00 Public Involvement - this document will be coordinated with the following agencies, groups and individuals.

Federal

National Marine Fisheries Service  
Fish and Wildlife Service  
OICC Trident  
Office of Coastal Zone Management, U.S. Department of Commerce  
Corps of Engineers  
U.S. Coast Guard, District 7  
National Park Service  
National Ocean Survey, U.S. Department of Commerce  
Bureau of Land Management

State

Office of the Governor - Georgia  
Office of the Governor - Florida  
Administrator, Georgia State Clearing House  
State of Florida A-95 Clearing House  
Georgia Department of Natural Resources  
Florida Department of Natural Resources  
Florida Department of Environmental Regulation  
Georgia Coastal Area Planning and Development Commission  
Northeast Florida Regional Planning Commission

Local

Chairmen of County Commissioners, Camden County, Georgia  
Camden County Administrator  
Nassau County Board of Commissioners  
Superintendent, Cumberland Island National Seashore  
Manager, City of Fernandina Beach

Public

Georgia Conservancy, IMC Coastal Chapter  
Georgia Wildlife Federation  
Skidaway Institute of Oceanography  
Georgia Coastal Audubon Society  
Georgia Sierra Club  
South Atlantic Fisheries Management Council  
Sierra Club, Northeast Florida Chapter  
Florida Audubon  
Florida Wildlife Federation  
Northeast Florida Shrimpers Association  
Florida Cooperative Extension Service  
Dr. A. Quinton White, Jacksonville University  
Marine Advisory Office - Marineland  
Jacksonville Reef Research Divers, Inc.  
Florida Boating Council  
Florida League of Anglers  
Organized Fishermen of Florida

## 7.00 REFERENCES

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## PREPARATION OF THE FINAL EIS

The comments received on the Draft EIS and EPA's responses to those comments are contained in pages 34 through 58. Where appropriate, revisions were made to the Draft EIS and are included in this Final EIS.

Principal preparer of the Final EIS was Christopher A. Provost of the Marine Protection Section in EPA Region IV. Reviews and support were provided by other members of the Marine Protection Section and by the Jacksonville Army District, Environmental Resources Branch.

Sally Turner, Chief, Marine Protection Section, Region IV  
Reginald Rogers, Ocean Dumping Coordinator - Region IV  
Dan Malanchuk, Corps of Engineers, Jacksonville

## SECTION 7 COORDINATION

Contacts were made with the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) regarding any possible effects of this site designation to threatened or endangered species. The FWS concurred with the site designation, as is; and the NMFS indicated it could concur with the site designation, if steps were taken to avoid disturbing the behavior of the right whale. EPA is currently evaluating the options available to minimize the effects of dredged material disposal on the right whale. The comment and response section that follows details the FWS and NMFS comments and the EPA responses.

## COASTAL ZONE MANAGEMENT PLAN CONSISTENCY DETERMINATIONS

At the time of publication of the Draft EIS an evaluation of the consistency of this site designation with Florida's Coastal Zone Management Plan had not been submitted. EPA has submitted this evaluation, and it is currently being reviewed by the State of Florida. The results of that review will be included in the site designation rulemaking.

## COMMENTS AND RESPONSES

Following are copies of the comment letters received on the Draft EIS. Individual comments are numbered in the margins. Following the comments are EPA responses. The responses are numbered to correspond with the appropriate comment.



FLORIDA DEPARTMENT OF STATE

George Firestone  
Secretary of State

DIVISION OF HISTORICAL RESOURCES

R.A. Gray Building  
Tallahassee, Florida 32301-8020  
(904) 488-1480

July 25, 1986

Ms. Sally Turner  
Marine Protection Section  
345 Courtland Street  
Atlanta, Georgia 30365

In Reply Refer to:  
Mike Wisenbaker  
Historic Sites Specialist  
(904) 487-2333

RE: Draft Supplement to the Jacksonville Harbor Ocean Dredged Material  
Disposal Sites, Final Environmental Impact Statement for the Designation  
of a New Fernandina Harbor, Florida, Ocean Dredged Material Disposal Site.

Dear Ms. Turner:


In accordance with the provisions of the applicable local ordinance \_\_\_ and/or Sections 253.77\_\_\_, 267.061\_\_\_, 380.06\_\_\_, 380.061\_\_\_ and 403.918(2)(a)6\_\_\_, Florida Statutes, and implementing state regulations, and/or in accordance with the provisions of the National Historic Preservation Act of 1966 (Public Law 89-665) as amended and related federal laws and their implementing procedures for federally involved projects\_\_\_, we have reviewed the above cited project(s) to determine its(their) effect on significant archaeological and historical sites and properties. 0-1

A review of the Florida Master Site File indicates that no significant archaeological and/or historical sites are recorded for or considered likely to be present within the project area(s)\_\_\_✓. Because of the project(s) nature it is considered unlikely that any such sites will be affected\_\_\_. Therefore, it is the opinion of this office that the proposed project(s) will have no effect on any sites listed, or eligible for listing, in the National Register of Historic Places, or otherwise of national, state or local significance. The project(s) is(are) consistent also with Florida's historic preservation laws and concerns, and may proceed without further involvement with this agency. 0-2

If you have any questions concerning our comments, please do not hesitate to contact us. Your interest and cooperation in helping to protect Florida's archaeological and historic resources are appreciated.

Sincerely,

GWP/efk  
Enclosure ( )

  
George W. Percy, Chief  
Bureau of Historic Preservation and  
State Historic Preservation Officer

# The Georgia Conservancy

COASTAL OFFICE

711 SANDTOWN ROAD

SAVANNAH, GEORGIA 31410

912/897-6462

July 25, 1986

Colonel Charles T. Myers III  
Commander  
Jacksonville District  
U. S. Army Corps of Engineers  
P. O. Box 4970  
Jacksonville, Fl 32232-0019

Dear Colonel Myers,

Reference is made to the Draft Supplement to the Jacksonville Harbor  
Ocean Dredged Material Disposal Site EIS. 1-1

Please include in the record the enclosed letter to Mr. Jack T.  
Brawner, Regional Director of the National Marine Fisheries Service.

It is the view of The Georgia Conservancy that extraordinary measures  
must be taken to protect what is a major calving ground for the right 1-2  
whale and which may be the only calving ground for the species. The  
proposed disposal site is in the middle of the heart of the calving  
ground.

Serious consideration should be given to moving the disposal area so  
as to avoid the calving ground or not using the disposal area during 1-3  
the winter months when the whales are present.

Thank you for the opportunity to comment.

Sincerely,

*Hans Neuhauser*

Hans Neuhauser  
Coastal Director

# The Georgia Conservancy.

COASTAL OFFICE

711 SANDTOWN ROAD

SAVANNAH, GEORGIA 31410

912/897-6462

July 25, 1986

Mr. Jack G. Brawner  
Regional Director  
National Marine Fisheries Service  
9450 Koger Boulevard  
St. Petersburg, FL 33702

Dear Mr. Brawner:

On July 7, 1986, Scott Kraus, John Prescott and Amy Knowlton of the New England Aquarium submitted a paper to the World Wildlife Fund-U.S. and the Minerals Management Service entitled "Wintering Right Whales (Eubalaena glacialis) Along the Southeastern Coast of the United States, 1984-1986." That paper summarizes the results of the New England Aquarium's surveys of right whales in the Southeast during the past three years.

In figure 2 of the report, the winter distribution of right whales near Georgia and northeastern Florida is presented. A copy of this figure is enclosed. (A complete copy of the report has been sent to Mr. Paul Raymond of your office.) Right whales congregate in a very small area off the south Georgia and north Florida coast. That area centers around the Georgia/Florida border and extends north about 20 miles and south about 20 miles. The whales tend to occur near the coast, with more than 80% of the animals sighted occurring between the coastline and five miles offshore. (Park Service personnel at Cumberland Island National Seashore have reported cow and calf pairs of right whales swimming between Cumberland Island National Seashore and the mainland and the Kings Bay Nuclear Submarine Base. These sightings have been made two years in a row, and most likely involve different animals.)

The report states that these waters "are a major calving ground for North Atlantic right whales." The waters MAY be the ONLY calving ground for this species.

The importance of these waters to the survival of the right whale should be self-evident. Any activity that occurs in the area should be carefully scrutinized and controlled so as to insure no adverse impact on this most endangered of all the world's large whales.

page two  
Mr. Jack T. Brawner  
July 25, 1986

In view of these new data on the precise location of right whale distributions off so small a portion of the southeast coast, I urge you to re-initiate Endangered Species Section 7 consultations with the other agencies conducting activities in the region. Immediate consultation should begin with both the Navy and the Jacksonville District of the Corps of Engineers regarding their proposed activities in the right whale calving ground. The need for these consultations is urgent due to the present plan of the Navy to deepen, widen and lengthen a navigation channel at the Georgia/Florida border in the heart of the calving ground and due to the plan of the Jacksonville District to relocate a dredge disposal area to the same calving ground.

Please give this matter your immediate attention.

Thank you.

Sincerely,



Hans Neuhauser  
Coastal Director

HN/rrs

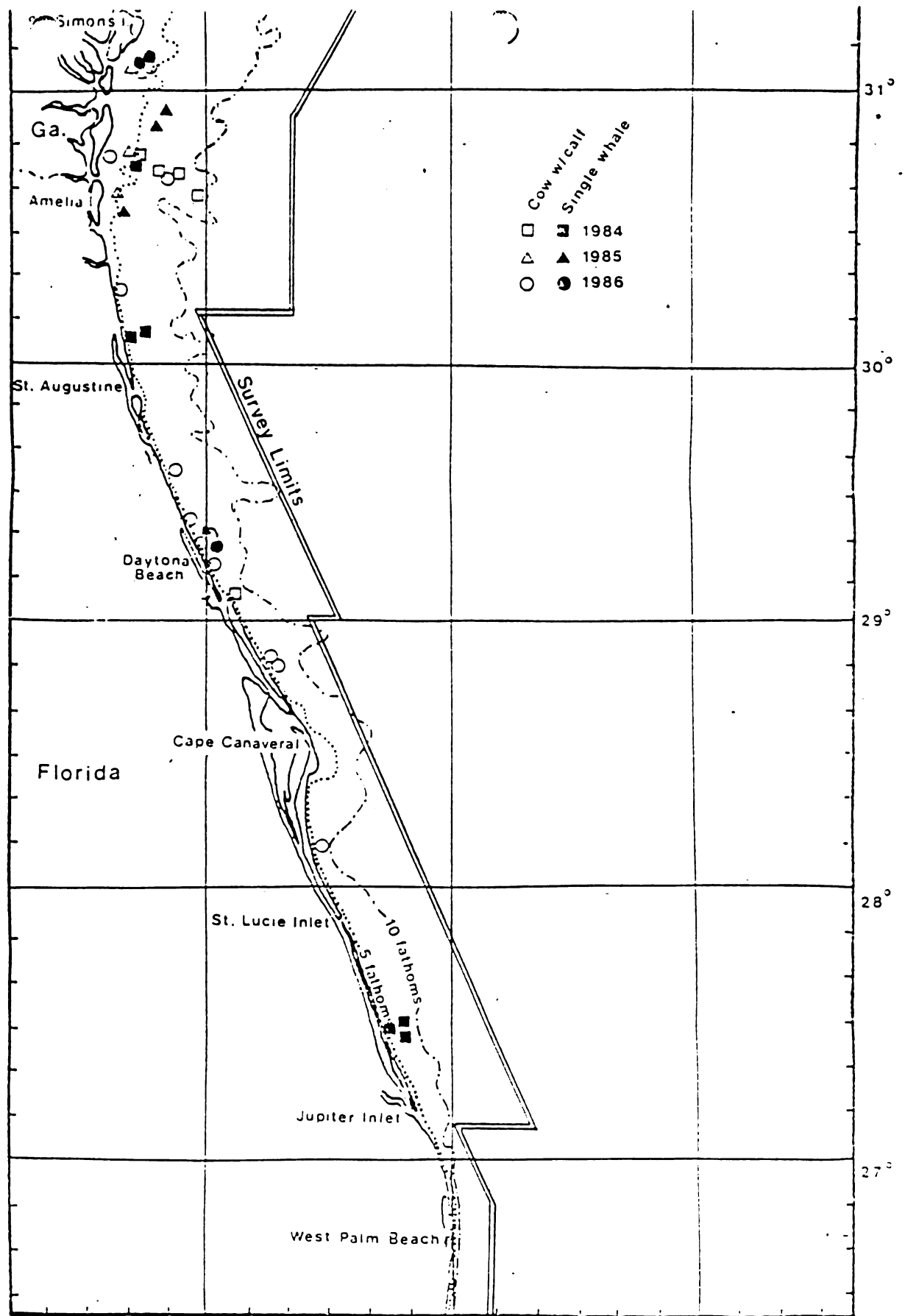


FIGURE 2. Winter distribution of right whales near Georgia and northeastern Florida, 1984-1986 (aerial survey data only).



# United States Department of the Interior

## OFFICE OF ENVIRONMENTAL PROJECT REVIEW

Southeast Region / Suite 1360  
Richard B. Russell Federal Building  
75 Spring Street, S.W. / Atlanta, Ga. 30303  
Telephone 404/221-4524 - FTS: 242-4524

September 5, 1986

ER-86/903

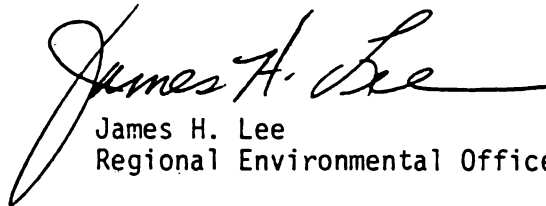
Sally Turner, Chief  
Marine Protection Section  
U.S. Environmental Protection Agency  
345 Courtland Street  
Atlanta, GA 30365

Dear Ms Turner:

The Department of the Interior has reviewed the Draft Supplement to the Jacksonville Harbor Ocean Dredged Material Disposal Site FEIS for the Designation of A New Fernadina Harbor, FL Ocean Dredged Material Disposal Site. We have no comments to offer on the document.

2-1

Sincerely,



James H. Lee  
Regional Environmental Officer



United States Department of the Interior  
FISH AND WILDLIFE SERVICE  
ENDANGERED SPECIES FIELD STATION  
2747 ART MUSEUM DRIVE  
JACKSONVILLE, FLORIDA 32207

September 5, 1986

Ms. Sally Turner  
Marine Protection Section  
U.S. Environmental Protection Agency  
345 Courtland Street  
Atlanta, Georgia 30365

FWS Log No. 4-1-86-332

Dear Ms. Turner:

This is in response to your letter of August 19, 1986 regarding the draft Supplement EIS for the Fernandina Florida dredged material disposal site designation.

We concur with your determination that the proposed disposal site designation will have no effect on federally listed threatened or endangered species under the jurisdiction of the U.S. Fish and Wildlife Service.

3-1

We appreciate the opportunity to provide comments. If you have questions, please contact Mr. Don Palmer or Ms. Linda Walker at this office.

Sincerely yours,

David J. Wesley  
Field Supervisor



# Northeast Florida Regional Planning Council

8649 Baypine Road, Suite 110  
Jacksonville, Florida 32216  
(904) 737-7311 Suncom 694-6037

BAKER SCLAY DUVAL FLAGLER NASSAU PUTNAM ST. JOHNS

September 8, 1986

Ms. Sally Turner, Chief  
Marine Protection Service  
U.S.E.P.A.  
Region IV  
345 Courtland Street  
Atlanta, GA 30365

Dear Ms. Turner:

We have reviewed the draft E.I.S. on the proposed new Fernandina Harbor disposal site. The proposed candidate disposal site appears to have no significant adverse impact on regional resources. It appears that the areas of existing fisheries concentrations, historical ship wrecks, and coastal shore related amenities are adequately protected. 4-1

We do continue to express the concern for disposal of suitable beach nourishment material at ocean disposal sites. It is recognized, however, that material unsuitable for beach nourishment must be disposed of. 4-2

We would like to see more stringent regulations on the type of materials to be disposed of at all ocean disposal sites. A requirement that suitable beach nourishment material be placed on a designated beach site is a priority that would be laudable. 4-3

In closing, we have no objections to the designated candidate disposal site as proposed.

Sincerely,



Alfred E. Walker  
Senior Regional Planner

AEW:fc



STATE OF FLORIDA

# Office of the Governor

THE CAPITOL  
TALLAHASSEE 32301

**BOB GRAHAM**  
GOVERNOR

September 8, 1986

Ms. Sally Turner, Chief  
Marine Protection Section  
United States Environmental Protection Agency  
345 Courtland Street  
Atlanta, Georgia 30365

Dear Ms. Turner:

This office has reviewed and coordinated a state review of your Draft Environmental Impact Statement for the Designation of a Fernandina Harbor Ocean Dredged Material Disposal Site. Your proposed action would designate a disposal site off the coast of Florida six miles east of Amelia Island in water depths of 60 feet. The site would receive material generated by new and maintenance dredging work from Fernandina Harbor and the entrance channel. The preferred alternative or candidate site was selected after examining and eliminating three alternate sites, an interim designated site, land disposal and the no-action alternative.

5-1 As part of our response to this draft document, attached are comments from the Departments of Commerce, Environmental Regulation and Natural Resources. In summary they request clarification on the source of the dredge material and potential contaminants. An assessment of potential mounding and migration offsite of dumped spoils should be provided. This analysis should include the probability of such occurrences, using typical and worst case parameters. Impacts on endangered species should be given further evaluation with particular emphasis on whales and loggerhead turtles. The Department of Environmental Regulation notes that the draft document does not include a federal consistency determination as required by the Coastal Zone Management Act. This evaluation should be completed as soon as practicable and be a part of the final EIS.

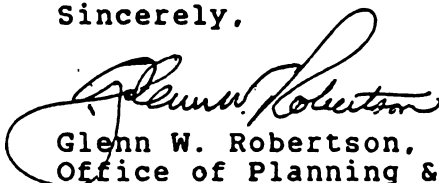
5-2 Based on the information presented in the draft document, the disposal site will be used for receiving sand material that is compatible with material naturally found on beaches. Disposal of beach quality material, a nonrenewable resource, has been a major state concern. The Departments of Commerce and Natural

Billy Turner  
Page Two

Resources suggest that this sand material be placed on the Amelia Island beaches or in the littoral zone. The beaches of northeast Florida including those on Amelia Island have been adversely impacted by the construction and maintenance of Federal navigation projects. These projects have directly and indirectly resulted in the loss of millions of cubic yards of sand from the beach system. The State of Florida cannot agree to a program or project that proposes to continue past misguided practices. Therefore, we find this proposal and designation of a disposal site near Fernandina unacceptable and contrary to state plans, policies and programs. We request that no final action be taken by your agency or other federal agencies until our concerns are satisfactorily addressed.

This office looks forward to arranging a meeting with you and other federal cooperating agencies for the purpose of resolving our concerns and avoiding unnecessary project delays. Please contact Walt Kolb at 904 488-5551 to make the necessary arrangements.

Sincerely,



Glenn W. Robertson, Jr., Director  
Office of Planning & Budgeting

GWR/jkc

Attachments

cc: Dr. Elton Gissendanner  
Ms. Victoria Tschinkel  
Ms. Pam Davis  
Ms. Lynn Griffin  
Dr. Robert Dean  
Mr. Jack Woodward

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION



TWIN TOWERS OFFICE BUILDING  
1600 BLAIR STONE ROAD  
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM  
GOVERNOR  
VICTORIA J. TSCHINKEL  
SECRETARY

September 5, 1986

Mr. Walt Kolb  
Senior Governmental Analyst  
Office of Planning and Budgeting  
Office of the Governor  
404 Carlton Building  
Tallahassee, Florida 32301

Dear Walt:

Re: Draft Environmental Impact Statement,  
Fernandina Harbor Ocean Dredged  
Material Disposal Site Designation

The EPA is proposing to designate a new ocean dump site to accommodate construction and maintenance dredged material from Fernandina Harbor, the harbor entrance channel and the ocean portion of the St. Marys River entrance channel. The preferred site is located 6 miles offshore of Amelia Island at depths of approximately 50-60 ft. The site will be 4 nmi<sup>2</sup>.

Overall, the EIS is very well done and represents the best effort to date for ocean disposal site designation. The site selection process screened out sites located in prominent fisheries areas and hard live bottom habitat. Amenity areas do occur within 2 miles of the site, however, and would be of concern if highly contaminated sediments were dumped. Because of this we believe the EPA should clarify whether material dredged to maintain other interior channels and basins would be eligible for disposal in this site. If so, what are the potential contaminants which are expected to be associated with these materials?

5-3

Historically, a weak point in site designation evaluations has been the assessment of potential mounding and migration offsite of dumped spoils. We believe EPA

5-4

Mr. Walt Kolb  
September 5, 1986  
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should provide in the EIS an analysis of the probability of such occurrences using parameters selected as typical and worst case. That is, the grain size and level of contamination of a given volume of material should be specified and a prediction of its dispersion made given particular currents and weather circumstances. This would provide a greater degree of confidence in a conclusion that nearby fishery habitat would be unaffected by dumping. Such an evaluation could also guide the development of the monitoring program.

We request the inclusion of still photographs in future site selection documentation. If there are some available for the sites reviewed in this EIS, we would like to see them.

5-5

The EPA did not include a federal consistency determination as required under the Coastal Zone Management Act in the draft EIS. This evaluation should be completed prior to publishing the final EIS. The issues raised above should be addressed in the evaluation.

5-6

We appreciate the opportunity to comment on this document. Please contact me at 904-488-8615 if there are any questions.

Cordially,



Lynn F. Griffin  
Environmental Specialist  
Intergovernmental Programs  
Review Section

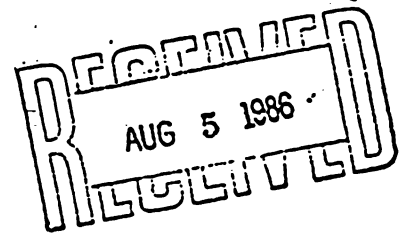
cc: Dave Worley  
Mary Smallwood  
George Henderson



STATE OF FLORIDA DEPARTMENT OF COMMERCE

Division of Economic Development

July 31, 1986



Walter Kolb  
Office of Planning and Budgeting  
Office of the Governor  
Room 404 Carlton Building  
The Capitol  
Tallahassee, Florida 32301

Dear Walt:

The Florida Department of Commerce has reviewed the U.S. Environmental Protection Agency (EPA) final EIS for the designation of a new ocean disposal site for material to be dredged from St. Mary's Inlet as part of the Kings Bay Navy Project. We have no additional comments concerning the EPA final EIS. The comments that we made on the U.S. Army Corps Draft Supplemental EIS in our letter to you dated July 15, 1986 would also apply to this EIS.

5-7

Thank you for the opportunity to comment on this EIS.

Sincerely,

Wynnelle Wilson  
Economist Supervisor

WW/rs/kw

Enclosure



**STATE OF FLORIDA DEPARTMENT OF COMMERCE**

**Division of Economic Development**

**July 15, 1986**

**Walter Kolb  
Office of Planning and Budgeting  
Office of the Governor  
Room 404 Carlton Building  
The Capitol  
Tallahassee, Florida 32301**

**Dear Walt:**

The Florida Department of Commerce has reviewed the Draft Supplemental Environmental Impact Statement (EIS) for the Submarine Support Base at Kings Bay, which addresses the dredging of St. Marys' entrance channel and beach renourishment on Amelia Island. The latest figures that we have from the Corps estimate that out of the approximately 9.8 million cubic yards to be dredged from the channel, approximately 1.5 million cubic yards will be placed on 3.6 miles of beaches on northern Amelia Island and approximately 3.1 million cubic yards will be disposed of in a near-shore area. Of the remaining 5.2 million cubic yards, the Corps estimates that approximately 28 percent or 1.5 million cubic yards of sand will be disposed of in an ocean site.

Since the Fernandina Beach/Amelia Island economy is heavily dependent on tourists who visit the area to use their beaches, the Department has two major concerns with the Corps' proposal for disposing of the dredged material. First, we would prefer to see the estimated 1.5 million cubic yards of sand that will be disposed of in the ocean site placed on Amelia Island beaches,

Walter Kolb  
July 15, 1986  
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provided it is beach quality material. Second, we understand the benefits of the sand returning to the littoral system from the near-shore site may be minimal because of the depths in the area of the site. If this is the situation, we would prefer to see the 3.1 million cubic yards of sand either disposed of in a near-shore site where the sand will enter the littoral system or placed on Ameila Island beaches.

Thank you for the opportunity to comment on this project.

Sincerely,

*Bob Schmitt for  
Wynelle Wilson*

Wynnelle Wilson  
Economist Supervisor

WW/jg/kw





# State of Florida DEPARTMENT OF NATURAL RESOURCES

DR. ELTON J. GISSENDANNER  
Executive Director  
Marjory Stoneman Douglas Building  
3900 Commonwealth Boulevard, Tallahassee, Florida 32303

BOB GRAHAM  
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GEORGE FIRESTONE  
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JIM SMITH  
Attorney General  
GERALD A. LEWIS  
Comptroller  
BILL GUNTER  
Treasurer  
DOYLE CONNER  
Commissioner of Agriculture  
RALPH D. TURLINGTON  
Commissioner of Education

September 8, 1986

Mr. Walt Kolb, Senior Governmental Analyst  
Office of Planning and Budgeting  
Carlton Building - Room 404  
Tallahassee, Florida 32301

Dear Mr. Kolb:

REF: Evaluation of U.S. Environmental Protection Agency Supplement to  
Jacksonville Harbor Ocean Dredged Material Site.

The subject report proposes a relatively deep water (45 to 63 feet)  
disposal site located approximately six miles east of Amelia Island,  
Florida. The rationale expressed for the need for this site is:

"Projected estimates of new and maintenance material  
from the Fernandina region exceed the capacity of  
available land disposal sites and the existing interim  
designated Fernandina Harbor, Florida, ocean dredged material  
disposal site (ODMDS)."

This statement correctly conveys the present plans for a massive  
dredging program with the preferred placement well outside the lit-  
toral system. Both the subject report and the draft EIS for the Kings  
Bay project characterize the material to be dredged as of generally  
good quality. On the basis of information presented, we judge this  
material to be reasonably compatible with that naturally on the beach.  
In particular, the report shows that for 13 of the 18 grain size ana-  
lyses presented, the silt-clay percentages is less than 10% and one-  
half of the samples have silt-clay percentages less than 5%.

5-8

The basis for our assessment as presented below is: (1) The beaches of  
Amelia Island have been impacted adversely by the existing St. Marys  
Entrance navigational project, (2) we regard the entire nearshore  
system in terminology introduced by coastal geologists as one "sand  
sharing system," (3) surely the consummation of the plans described and  
envisioned in the subject report would cause significant and essen-  
tially irreversible adverse effects to the beaches of Amelia Island and  
to the beaches to the south, and (4) if the plans are carried out, the  
cost of mitigating the resulting damage to the beaches will fall  
heavily, at least in part, on the citizens of the State of Florida.

5-9

Letter to Walt Kolb  
September 8, 1986  
Page Two

Endangered species should be assessed further than a species list in view of the regular whale migrations and the apparent calving by rights whales in the vicinity together with prevalence of loggerhead turtles.

5-10

Based on reasons presented above, we find the proposed disposal site unacceptable. Clearly plans should be revised to utilize all beach compatible material placed on the badly eroded beaches of Amelia Island with these sand transported by natural processes to nourish the beaches to the south.

Sincerely,



Elton J. Gissendanner  
Executive Director

EJG/jwm



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

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

September 29, 1986

F/SER23:PWR:dcg

Sally Turner  
Acting Chief, Marine Protection Section  
U.S. Environmental Protection Agency  
Region IV  
345 Courtland Street  
Atlanta, GA 30365

Dear Ms. Turner:

This responds to your August 27, 1986, letter to Mr. Paul Raymond of my staff, 6-1  
regarding the proposed designation of the Jacksonville Harbor ocean dredged  
material disposal site. The proposed site is six nautical miles east of the  
south end of Amelia Island, Florida.

Pursuant to Section 7 of the Endangered Species Act (ESA) of 1973, EPA has 6-2  
provided a biological assessment in the form of a draft Supplemental  
Environmental Impact Statement (DEIS) for this proposed disposal site  
designation. Your conclusion is that the proposed designation of this site  
will have no effect on threatened or endangered species under NMFS  
jurisdiction. We are currently unable to concur with this conclusion based on  
the information supplied in your letter and the DEIS. The DEIS contains  
insufficient information for us to assess the proposed designation and its  
potential effects on the wintering population of right whales (Eubalaena  
glacialis). The following is a summary of our comments and suggestions for  
providing additional information to comply with your Section 7  
responsibilities:

(1) As stated in your letter, Section 4.16 of the DEIS lists the endangered 6-3  
species that may occur in the area of the site designation. However, there is  
no discussion or assessment as to the potential effects on these species.

(2) Recent data indicates that the coastal waters immediately offshore the 6-4  
Florida/Georgia border is the peak region where most known right whale  
cow/calf pairs occur (Kraus et al., 1986; copy of the report is enclosed).  
Right whales in the western North Atlantic are currently estimated to number  
between 200 and 400 individuals. Additional literature on right whales is  
enclosed for your review and use.

(3) Right whale sightings in the waters off the Georgia/Florida border tend 6-5  
to occur near the coast, and there is some preference for water depths of  
about 5 fathoms. The proposed offshore disposal site is in the direct  
vicinity of the identified right whale calving grounds. The effects of  
offshore disposal activity on right whale behavior is unknown. Therefore, we  
suggest the EPA incorporate conditions in their site designation that will:  
(a) restrict the use of this disposal site to months outside the known



calving/wintering periods (i.e., no disposal between December and March); or (b) provide for a NMFS approved observer program to be established aboard the disposal vessels during the peak calving season (January-March). This observer program would be coordinated with right whale researchers from the New England Aquarium. Percent coverage would be contingent upon observer availability, weather conditions, and the applicability of using disposal vessels (hopper dredges) as observer platforms.

The above monitoring condition will not alter the timing, scope, or use of the site designation, if adopted. If the EPA is willing to accept and incorporate the monitoring requirements or the restrictions on disposal use (Dec.-March), we are able to concur with the determination of no effect. If no agreement on a condition can be made and incorporated, then we would request the EPA to initiate formal Section 7 consultation.

We look forward to your continued cooperation in meeting our endangered species responsibilities. If you have any questions or require additional information regarding this consultation, please contact Mr. Paul Raymond, Fishery Biologist, at FTS 826-3366.

Sincerely yours,

*Charles A. Oravetz*

Charles A. Oravetz, Chief  
Protected Species Management Branch

Enclosures

cc: F/M412  
F/SER1  
FWS - Jacksonville

## RESPONSES TO COMMENTS ON DEIS

### Introduction

Several of the comment letters indicate concerns about EPA's proposed designation of an ocean site six miles east of Amelia Island for disposal of dredged material. These concerns do not appear to be questioning the environmental suitability of the particular ocean site proposed for designation. Rather, those concerned about this site designation would apparently object to EPA's designation of any ocean site located sufficiently close to Fernandina Beach so as to provide a feasible ocean alternative to land disposal for beach-compatible sand expected to be generated by the Navy's proposed St. Mary's entrance channel dredging project. They contend that all such beach-compatible dredged material should be used exclusively for beach nourishment.

EPA believes that these concerns should be addressed during the Corps of Engineers evaluation of the particular dredging project(s) to which they apply, and not in the context of EPA's ocean disposal site designation, which itself neither authorizes any dredging project nor permits disposal of any dredged material. While such matters may be highly relevant to determinations about the need for ocean dumping in relation to a specific dredging project, EPA does not regard them as being relevant to the issue now before this Agency: whether or not to designate an ocean disposal site to serve those dredging projects for which ocean disposal may, in the future, be approved.

The Fernandina Harbor area is important to commercial shipping, naval operations and other activities requiring safe navigation conditions. In the past, dredging operations in the inner Harbor and its entrance channels have frequently been undertaken in order to maintain the depths required for safe navigation, and future dredging operations in this area, including the Navy's proposed project, are clearly foreseeable. Based on the historical use of the ocean as a means of disposing of dredged material generated by such projects, and on the Corps of Engineers' statutory requirement to dispose of dredged materials by the most economical means, EPA believes that the need to have a designated disposal site available in the area is readily apparent.

Although this Agency is authorized by the Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA) to designate sites for ocean dumping, EPA has no authority to impose, either directly or indirectly, a blanket prohibition on ocean disposal of dredged materials. Decisions about whether to permit ocean disposal of any dredged materials must be made on a case-by-case basis through the application of permitting criteria (40 CFR Part 227) to individual projects. These permitting criteria, applied in the course of the Corps of Engineers' public interest review of permit applications for projects involving ocean disposal of dredged materials, are different from the criteria applicable to site designations (40 CFR Part 228). Among these

differences is the inclusion in the permitting regulations of criteria for evaluating the need for ocean dumping in light of alternative methods of disposal (40 CFR Part 227, Subpart C). EPA views the need for ocean dumping with respect to any particular dredging project as being a different issue from the need to have an EPA-designated ocean dumping site available for consideration as a disposal option in dredging projects generally. Therefore, we believe that concerns related to adverse effects on a beach of possible ocean disposal of beach-compatible sand should be addressed during the Corps' project review process, which provides for public notice and opportunity to comment.

This interpretation of the scope of concerns to be studied within the site designation Environmental Impact Statement is, in our opinion, consistent with Congress' expressed desire that ocean sites designated by EPA should be used for ocean disposal of dredged materials whenever feasible. If this Agency were to refuse to designate any ocean disposal site in an area because of opposition to aspects of a dredging project proposed there, the lack of an EPA designated site would not preclude ocean disposal in the area, but rather would abrogate to the Corps of Engineers the duty of selecting a site whenever ocean dumping was found to be the preferred disposal method. EPA believes that the environment is better served when disposal site designation is performed by EPA after a thorough environmental assessment and scientific analysis, and that matters relevant only to specific project evaluation should not impede or delay the site designation process.

Therefore, the comments submitted concerning the objections to the site designation based on the proposed use of the site for beach-compatible sand disposal are not germane to this EIS. Issues relevant to this site designation are the site's relationship to marine resources, coastal amenities, historical resources and other factors included in the eleven criteria (pages 14-21) given in the Ocean Dumping Regulations.

## SPECIFIC COMMENT RESPONSES

- 0-1 EPA thanks the State Division of Historical Resources for reviewing and providing comments on the Draft EIS.
- 0-2 Comment noted.
- 1-1 EPA thanks the Georgia Conservancy for its review of the Draft EIS.
- 1-2 The National Marine Fisheries Service (NMFS) has indicated that the effects of disposing dredged material at the proposed site on the right whale are unknown. Based on available information, there are no indications that any past disposal activities have had any adverse effects on right whales (see NMFS comment and responses 6-4 and 6-5). NMFS has made the recommendation to restrict the use of the site to months outside the known calving/wintering periods of the right whale or to provide a NMFS approved whale observer program during disposal operations. EPA and the Corps are currently evaluating various options aimed at the protection of the right whale. The text on page 13 of the FEIS has been changed to reflect these comments. EPA would like to assure those concerned that we are aware of the occurrence of right whales in this area; and although we do not anticipate any impact to their behavior from dredged material disposal, we, along with NMFS, will take the necessary precautions during our review of permit applications to the Corps which involve the ocean disposal of dredged materials at the site to ensure that no adverse impact occurs.
- 1-3 Alternative sites in the area were examined but were found to be less suitable for disposal activities. It is apparent that any site within an economic hauling distance from Fernandina Beach would be in the area used by the right whale; therefore, EPA will continue to coordinate with the NMFS to minimize impacts to this species from disposal at the candidate site.
- 2-1 EPA thanks the Department of the Interior for its review of the Draft EIS.
- 3-1 EPA thanks the U.S. Fish and Wildlife Service for reviewing the proposed site designation and its effect on threatened or endangered species under FWS jurisdiction. The text on page 13 has been changed to indicate that the FWS has concurred with this site designation.
- 4-1 EPA thanks the Northeast Florida Regional Planning Council for their review of the Draft EIS.
- 4-2 The comment on beach nourishment is noted. This comment is addressed in the introduction to the comment response section.
- 4-3 This site is being designated for the disposal of dredged materials only. The Ocean Dumping Regulations require a permit review process which prohibits a number of materials (high level radioactive wastes, floating materials, etc.) and also requires testing to ensure the material is not toxic to marine organisms. See comment response 4-2.

- 5-1 EPA thanks the Florida Governor's Office, and Departments of Commerce, Environmental Regulation, and Natural Resources for their comments on the Draft EIS. Responses to the individual Department comments follow.
- 5-2 See introduction to the comment response section.
- 5-3 Any dredged material from the Fernandina area is eligible for consideration for disposal at the proposed site, once designated. If ocean disposal is the preferred disposal option for a particular dredging project, the dredged material must be tested according to the Ocean Dumping Regulations to show that it is acceptable for ocean dumping. This testing procedure will identify any potential contaminants in the material proposed for dumping, the toxicity of the material, and the potential for bioaccumulation of the contaminants in the material. Once this testing procedure is completed EPA will make a determination on the acceptability of the material for ocean disposal. By administering the Ocean Dumping Regulations it is unlikely that any highly contaminated sediments will be disposed at any ocean dumping site.
- 5-4 It is expected that the majority of the material to be disposed at the site will sink rapidly to the bottom within the site boundaries. This conclusion is made based on past experience with dredged material disposal at sites around the United States coastline. Making predictions as to the extent of initial mounding or spreading of the material within the site is not advised because any predictions of this nature would be based on highly variable parameters such as grain size of the disposed material as well as current speeds and directions and weather conditions, not only during the actual dumping event, but also on a long-term basis. In any event, monitoring at the site after disposal will determine precisely the extent of any mounding or dispersion. Once the characteristics of the mound, if any, are determined, models which have been shown to be accurate can be applied to predict the movement or migration of that mound, if necessary. The site is located in relatively deep water, thus if mounding were to occur, there would be no hazard to navigation. Because of the flatness of the site, some mounding may actually be beneficial by providing relief. In highly dispersive sites no mounding would be expected and the monitoring goal would be to determine if the dispersion of the material is having adverse impacts on the marine environment beyond the site boundaries. The site is selected such that it is far enough removed from any amenities so that if the dispersion of the material is complete there should be no significant impacts to the amenities associated with the disposal of dredged material. Monitoring will ensure that any potential adverse impacts beyond the site boundaries will be avoided. If monitoring shows a potential for significant impacts, use of the site will be altered, or if need be, terminated.
- 5-5 Photo documentation was attempted at the proposed site, but turbidity conditions made it impossible to make useful photographs or videos. Videotapes were made of the other sites considered for designation and are available upon request.



- 5-6 A Coastal Zone Management Plan Consistency Evaluation was submitted by EPA on October 14, 1986, and the State of Florida is currently reviewing that evaluation.
- 5-7 The review was made on the Draft EIS and not the Final EIS. EPA does not agree that the comments made on the Navy's Draft Supplemental EIS for the Submarine Support Base at Kings Bay apply to this EIS. This site designation and associated NEPA documentation are independent of the Navy project. While it is true that the Corps, acting as the Navy's agent, proposes to use the proposed site once designated, that proposal undergoes a separate review process and should not be confused with the site designation review process. See the introduction to the comment response section.
- 5-8 Comment noted.
- 5-9 See comment response 5-7, and the introduction to the comment response section.
- 5-10 The text on page 13 has been changed to reflect the concerns for the right whales. See comment response 1-2. Neither the U.S. Fish and Wildlife Service nor the National Marine Fisheries Service indicated there would be any adverse effects on the loggerhead turtle from this site designation.
- 6-1 EPA thanks the National Marine Fisheries service for its review of the Draft EIS.
- 6-2 While EPA does not anticipate any effect of dredged material disposal on the behavior of the right whale, we will continue to coordinate with the National Marine Fisheries Service concerning possible effects and mitigation measures.
- 6-3 The text on page 13 has been changed to indicate that EPA does not anticipate any adverse impact to these species.
- 6-4 Comment noted. The literature provided was informative and is appreciated.

It should be pointed out that even though the Fernandina area may be near the geographical center of the range in which right whale cow/calf pairs were observed, that range of observations of cow/calf pairs extends approximately 200 miles to the north and to the south of the Fernandina area. Krause (1985) states that aerial surveys conducted in 1984 and 1985 indicate that calving occurs in the coastal waters of Georgia and Florida, but that most of the population does not occur in these waters in the winter and suggests that some cows apparently give birth elsewhere. Krause further states that the sightings of right whales off Florida and Georgia apparently account for only a relatively small percentage of the total right whale population, and the major wintering grounds remain unknown.

6-5 EPA agrees that the effects of dredged material disposal on right whale behavior is unknown. EPA and the Corps are currently evaluating options which will accommodate proposed disposal plans and address the concerns of the NMFS. See comment response 1-2, and page 13 of the FEIS. It should be pointed out that disposal activities have been taking place at the Fernandina interim site, located approximately 8 miles to the north, since 1978 and at the Jacksonville disposal site, located approximately 8 miles to the south, since 1972, with no apparent adverse effects on the right whale or any other species of concern.