

APPENDIX C
FISH & WILDLIFE COORDINATION ACT REPORT



United States Department of the Interior

FISH AND WILDLIFE SERVICE
6620 Southpoint Drive South
Suite 310
Jacksonville, Florida 32216-0912

IN REPLY REFER TO:
FWS/R4/ES-JAFL

JUL 24 1997

Hanley K. Smith
Acting Chief, Planning Division
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Attn: Planning Division/Environmental Branch

Dear Mr. Smith:

In accordance with the Fiscal Year 96 Transfer Fund Agreement between the Fish and Wildlife Service and the Jacksonville District Corps of Engineers, this letter transmits the Final Fish and Wildlife Coordination Act Report on the proposed Jacksonville Harbor Deepening Project, Duval County, Florida.

Sincerely,

Linda D. Finger
Michael M. Bentzien
for Assistant Field Supervisor

Enclosure

December 18, 1997

Planning Division
Environmental Branch

Mr. Steve Forsyth
U.S. Fish and Wildlife Service
Post Office Box 2676
Vero Beach, Florida 32961-2676

Dear Mr. Forsyth:

This concerns lighting requirements under the sea turtle incidental take statements for several beach nourishment projects. The statements do not normally allow beach renourishment during the main part of the nesting season for high density nesting beaches. In addition, any work during the nesting season would normally include nest surveys and relocations; making it unlikely that nesting or hatching turtles would be encountered. Therefore, we request that red filters and low pressure sodium (LPS) light requirements be deleted from all future beach nourishment projects, from the "framework" biological opinion for such projects, and those listed on the enclosed table. There are several compelling reasons for this request.

We understand the value and benefit of appropriate coastal lighting for nesting and hatching sea turtles. However, we believe more restrictive requirements for beach renourishment sites are of little benefit to sea turtles and may, actually, affect them adversely.

Essentially, the only turtles which might be affected by lighting associated with beach renourishment would be nesting females. It would appear undesirable to have turtles emerge on the beach to attempt to nest within the construction site. Normal construction sight lighting would tend to prevent sea turtle nesting in the construction site. Since adult turtles are presumed less reactive to LPS lights and red filtered lights, these features would do little to prevent their emergence onto the construction site.

Basically, the turtles may not be able to see the equipment, and the equipment operators would be less likely to see the turtles. For this latter reason, we are also concerned about public and worker safety if red filters are placed on construction equipment and vehicles. Except for the red wavelengths, most of the visible light would be filtered out. This would substantially reduce nighttime visibility for

equipment operators, construction workers, and the public, thus jeopardizing the safety of them all.

While it is possible to meet OSHA's work site illumination requirements with LPS lights, we believe that using monochromatic light at a construction site is unsafe. Under the illumination of LPS lights, it is virtually impossible to discern color (i.e., color coding and warning colors). Also, except for the color blind, color is important for image recognition. Any delay or impediment to image recognition could be a safety hazard on a construction site. The loss of color differentiation could result in reduced hazard recognition capabilities. In addition, we have experienced some difficulty in obtaining LPS lights suitable for construction site lighting. These lights are not commonly available from normal lighting sources and costs to retrofit existing or leased lighting could be substantial resulting in an unnecessary economic burden.

In summary, we do not feel that red filters and LPS lights for beach renourishment projects would benefit sea turtles. Conversely, the use of such lighting raises serious safety issues for turtles, construction workers, and the public. Due to the gravity of this issue, we reiterate our request that red filters and LPS light requirements be deleted from the terms and conditions of Biological Opinions for beach renourishment projects.

Please respond as soon as possible to our request to remove these lighting requirements since there are a number of projects pending which are affected by this provision. In particular, I am concerned about the renourishment of the Boca Raton segment of the Palm Beach County project. This construction is scheduled to begin soon and the biological opinion associated with the Department of the Army permit for this action requires red filters and LPS lights.

If you have any questions, please contact John Hall, Acting Chief of the Planning Division, at 904-232-2238.

Sincerely,

Richard E. Bonner, P.E.
Deputy District Engineer
for Project Management

Enclosure

bcc:

CESAJ-RD
CESAJ-OC
CESAJ-CO
CESAJ-SO
CESAD-ET-PR

AD



United States Department of the Interior

FISH AND WILDLIFE SERVICE
6620 Southpoint Drive South
Suite 310
Jacksonville, Florida 32216-0912

IN REPLY REFER TO:
FWS/R4/ES-JAFL

FEB 17 1998

Colonel Joe R. Miller
District Engineer
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Attn: Planning Division

Dear Colonel Miller:

Thank you for your December 18, 1997, letter regarding lighting requirements under the sea turtle incidental take statements for several beach nourishment projects. In your letter you identified problems associated with the restricted lighting requirements and requested that the red filters and low pressure sodium lighting requirements be deleted from all existing and future beach nourishment projects. The Fish and Wildlife Service's South Florida Ecosystem Office has already responded regarding projects within its area of jurisdiction. This letter addresses three projects you identified within the Jacksonville Field Office's area of jurisdiction: Ponce de Leon Inlet Navigation, Nassau County Shore Protection Program, and Brevard County Shore Protection Program.

The Service revises the Terms and Conditions regarding project-associated lighting for the Ponce de Leon Inlet Navigation and Nassau County Shore Protection Program projects to read as follows:

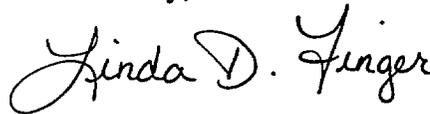
From April 15 through November 30, all on-beach lighting associated with the project shall be limited to the immediate area of active construction only. Shielded low pressure sodium vapor lights are recommended to minimize illumination of the nesting beach and nearshore waters. Lighting on offshore equipment shall be minimized through reduction, shielding, lowering, and appropriate placement of lights to avoid excessive illumination of the water, while meeting all U.S. Coast Guard and OSHA requirements. Shielded low pressure sodium vapor lights are highly recommended for lights on offshore equipment that cannot be eliminated.

The Service revises the Term and Condition regarding project-associated lighting for the Brevard County Shore Protection Program project to read as follows:

From March 1 through April 30 and November 1 through November 30, all on-beach lighting associated with the project shall be limited to the immediate area of active construction only. Shielded low pressure sodium vapor lights are recommended to minimize illumination of the nesting beach and nearshore waters. Lighting on offshore equipment shall be minimized through reduction, shielding, lowering, and appropriate placement of lights to avoid excessive illumination of the water, while meeting all U.S. Coast Guard and OSHA requirements. Shielded low pressure sodium vapor lights are highly recommended for lights on offshore equipment that cannot be eliminated.

Please contact Don Palmer of our office at (904)232-2580 (extension 115) if you have any questions.

Sincerely,



for David L. Hankla
Field Supervisor

cc: Sandy MacPherson, Fish and Wildlife Service, Jacksonville, FL
David Arnold, Florida Department of Environmental Protection, Tallahassee, FL



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

March 4, 1998

REPLY TO
ATTENTION OF
Planning Division
Environmental Branch

Mr. David Hankla
U.S. Fish and Wildlife Service
6620 Southpoint Drive, Suite 310
Jacksonville, Florida 32216

Dear Mr. Hankla:

I am writing you concerning lighting requirements as part of the incidental take statements for various beach nourishment projects. Thank you for your letter dated February 17, 1998, modifying the requirement for red filters and low-pressure sodium (LPS) lights. In your letter, the requirement was modified for following projects: (1) Nassau County Shore Protection, (2) Ponce de Leon Inlet Navigation, and (3) Brevard County Shore Protection.

Our records indicate that at least three other projects within the geographic jurisdiction of your office still have requirements for red filters and/or LPS lights. These are as follows: (1) Jacksonville Harbor Navigation Channel Deepening (in Coordination Act Report of 23 July 1997), (2) St. Johns County Shore Protection (letter of August 18, 1997), and (3) Sand Key Segment of Pinellas County Beach Erosion Control (letter of March 18, 1996).

I request modification of the lighting requirements for these additional projects. If you have any questions, please contact Kenneth Dugger, Chief of the Environmental Coordination Section, at 904-232-1686.

Sincerely,

A handwritten signature in cursive script that reads "John R. Hall".

John R. Hall
Acting Chief, Planning Division



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

IN REPLY REFER TO:
FWS/R4/ES-JAFL

MAR 10 1998

Dr. John Hall
Acting Chief, Planning Division
US Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear Dr. Hall:

This responds to your letter of March 4, 1998, requesting we modify three incidental take statements for projects affecting nesting marine turtles. On February 17, 1998, the Service sent the Planning Division a letter modifying the lighting requirements for three projects in north and central Florida. The three projects the Corps is requesting modifications for are Jacksonville Harbor Navigation Channel Deepening, St. Johns County Shore Protection and Sand Key Segment of Pinellas County Beach Erosion Control.

We have evaluated the Corps' request and hereby modify the three incidental take statements similar to the modifications in the February 17th letter for the above referenced Federal projects.

Sincerely yours,

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

Michael M. Bentzien
Assistant Field Supervisor

FISH & WILDLIFE COORDINATION ACT



JACKSONVILLE HARBOR DEEPENING PROJECT

JULY 23, 1997

Table of Contents

Executive Summary	1
Introduction	2
Authorization	2
Project Description	2
Description of the Affected Environment	3
Endangered Species Act	19
Coastal Barrier Resource Act	37

Executive Summary

The U.S. Fish and Wildlife Service (Service) evaluated potential natural resource impacts resulting from a proposed deepening of the main and Blount Island West ship channels within Jacksonville Harbor located in the lower St. Johns River. The evaluation included field surveys of fish, wildlife, and habitats at ten potential spoil disposal sites, review of the affected riverine and riparian areas and proposed mitigation for expected loss of jurisdictional wetlands, and additional natural resource recommendations. Based upon its analysis, the Service objects to any spoil disposal at sites 13A, 16, 22B, and as part of the horizontal expansion option of site 52 (Bartram Island). We recommend limited spoil disposal and associated actions at sites 13D and 13E. We do not object to disposal at existing spoil sites 22A, 52, and 62, and on the beach south of the St. Johns River (Site 68). Changes to the proposed wetland mitigation plan and horizontal expansion of site 52 are recommended in the event that the Corps cannot avoid proposed impacts to open water and intertidal wetland habitats around Bartram island.

The Service determined through section 7 consultation that the proposed project will not affect the bald eagle and red-cockaded woodpecker, is not likely to adversely affect the West Indian manatee, piping plover, wood stork, and eastern indigo snake, and is not likely to jeopardize the continued existence of the loggerhead, leatherback, and green sea turtles. Since the Corps indicated that blasting to deepen the harbor was unlikely, the Service did not consider this action in its response. Should blasting be required, the Service recommends the Corps reinstate consultation on the manatee. The federally threatened shortnose sturgeon is known to occur in the St. Johns River. The corps should contact the National Marine Fisheries Service regarding this species.

Although a small portion of the proposed project will occur within a designated unit (Talbot Island complex - PO2) of the Coastal Barrier Resources System, as defined by the Coastal Barrier Resources Act of 1982, as amended (CBRA), the project is exempted from CBRA's section 5 provision which places a limit on federal expenditures affecting a system.

The above findings and recommendations have been coordinated with the National Park Service and thus constitute the report of the Department of the Interior.

1.0

Introduction

In 1988 and 1993, the U.S. Fish and Wildlife Service (Service) provided the Jacksonville District, U.S. Army Corps of Engineers (Corps), with Planning Aid Letters (PALs) as part of the continuing Reconnaissance Study phase of a proposed channel deepening of Jacksonville Harbor within the St. Johns River at Jacksonville, Duval County, Florida. The letters were submitted in accordance with, and in partial fulfillment of, the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*). The PALs included descriptions and evaluations of ecological resources associated with 25 sites being considered for spoil disposal, and recommendations to mitigate for unavoidable adverse impacts to these resources. Following the first PAL, the Corps removed a number of sites from consideration and added a new oceanfront beach site located immediately south of the mouth of the St. Johns River.

2.0

Authorization

In accordance with a Fiscal Year 1996 transfer funding agreement between the Corps and the Service, the Jacksonville field office has prepared a Coordination Act Report (CAR) for inclusion in the Feasibility Level Study of the harbor deepening project. The agreement required the Service to perform updated evaluations of fish, wildlife, and habitat impacts from the proposed project, review mitigation offered, and provide mitigation alternatives as appropriate. The submission of this CAR is in accordance with the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*). A copy of the agreement with the scope of work is included in Appendix A.

3.0

Project description

The proposed project is located within Jacksonville Harbor, Duval County, Florida in the lower St. Johns River and on certain adjacent upland and ocean beachfront sites. The Corps proposes to improve navigation within the harbor by deepening the existing boat channel within several river reaches by adjusting channel depth and/or bottom width through hydraulic dredging and possible blasting. The proposed deepening will occur in phases beginning from the Atlantic Ocean and extending upriver to the northern terminus of the Terminal Channel Reach at Mile Marker 21 (Figure 1). The Corps seeks to achieve operating depths between 40 and 44 feet.

Harbor deepening project impact areas will include the channel reaches, unprotected river shorelines, pipeline crossings between the reaches and the spoil disposal sites, and the spoil disposal sites themselves. The site options for spoil disposal include:

an offshore and/or previously described beach site for unconsolidated materials from the ocean through river mile three,

Buck Island, an existing spoil disposal site located at about river mile six on the southern bank of the St. Johns River, for similar material removed between river mile three and eleven,

Bartram Island, a four-mile long spoil island owned by the Jacksonville Port Authority and located in the middle of the St. Johns River, for both consolidated and unconsolidated spoil excavated between river miles 11 and 21,

an existing spoil disposal site within the St. Johns River Power Park next to San Carlos Creek, to dispose of material from a deepening of the Blount Island West Channel, and one or more additional upland sites to dispose of remaining material from the upper reaches of the harbor project.

To meet its proposed disposal role, the Corps plans to raise the current capacity at Buck Island through removal of existing spoil and increasing the height of its containment dikes. Disposal plans for Bartram Island call for placement of unconsolidated bottom material taken between river mile 11 and 14.7, within a 280 acre diked spoil area at the western end of the island. Dike height would have to be raised in order to store additional spoil generated from the uppermost river segment. Another option is to expand Bartram Island by depositing material taken from the upper harbor on salt marsh, shallow tidal flats, and open water along the southern and southwestern periphery of the island. This option includes enclosing open water habitat at the western end of Bartram Island to create a new diked impoundment that would broadly connect Bartram Island due west about 5400 feet with an unnamed spoil island. This expansion would increase future spoil disposal capacity at Bartram Island.

To mitigate for the expected loss of jurisdictional wetlands at Bartram Island, the Corps proposes to create comparable intertidal wetlands at a 1:1 ratio on-site. The created areas would be located waterward of the proposed boundary of the expanded dredged material storage area along the island's southern shoreline. While most of the created wetlands would lie in a narrow linear strip parallel to the expanded shoreline, a portion would broadly connect Bartram Island with four salt marsh islands within Mill Cove (Marion, New Castle, Randolph, and William Islands).

The proposed use of Buck and Bartram Islands and 24 other upland sites for potential spoil disposal was previously reviewed and described by the Service in Planning Aid Letters contained within two Reconnaissance Reports entitled: Navigation Study for Jacksonville Harbor, Nos. 10208 (December 1988) and 04810 (March 1994). The current report includes a subset of those original sites plus additional acreage owned by Jacksonville Electric Authority and described in the previous PALs as the St. Johns River Power Park. This new acreage is southwest of the Power Park and physically separated from it by San Carlos Creek.

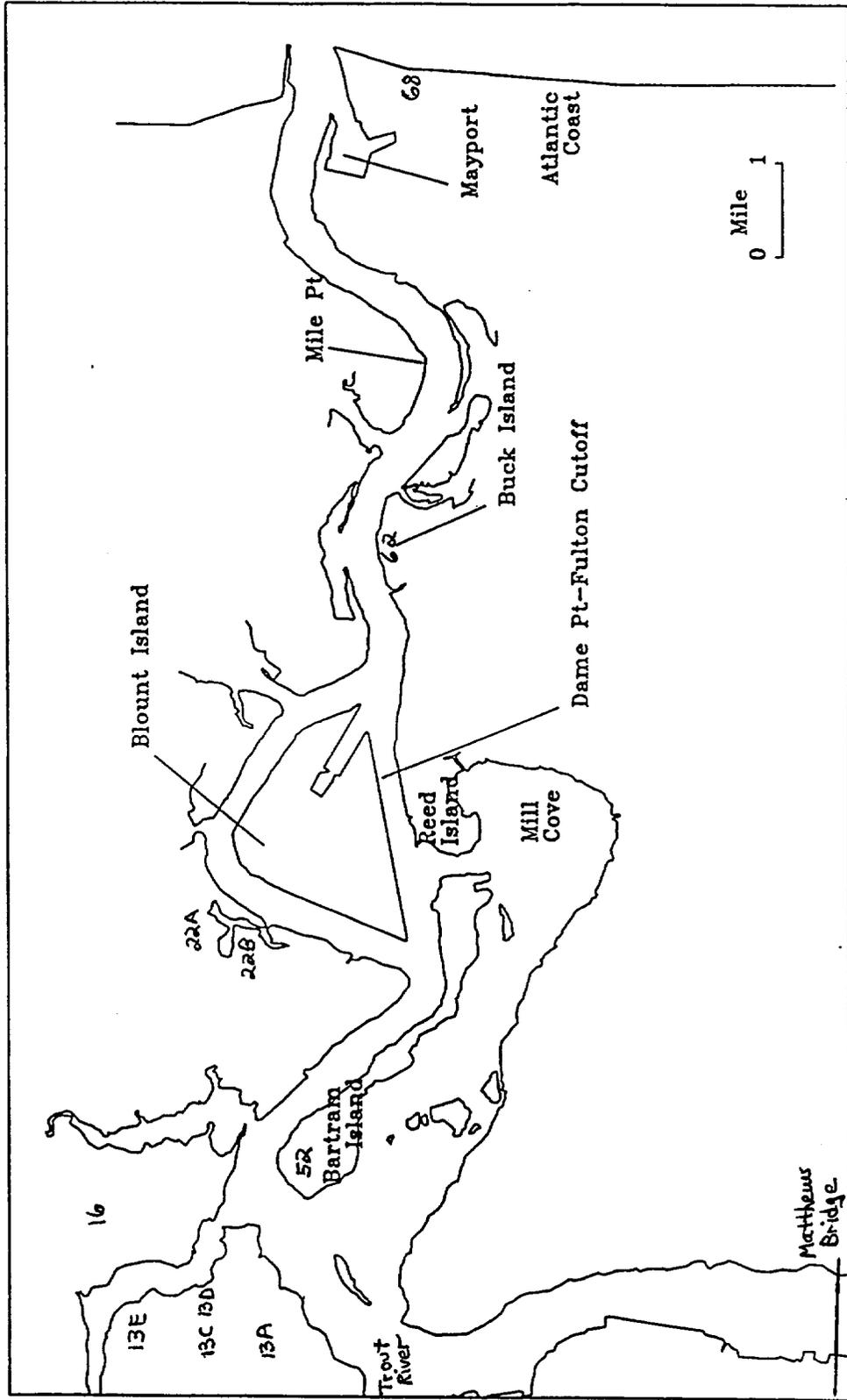


Figure 1. Lower St. Johns River Project Area and Proposed Spoil Disposal Sites

4.0

Description of the Affected Environment

The proposed project is located in east central Duval County, Florida, within the city limits of Jacksonville. The project footprint includes the lower 21 miles of the St. Johns River estuary which extends from the river mouth to just north of the Hart Bridge crossing in downtown Jacksonville. The ten study sites selected by the Corps for possible spoil disposal are located within or immediately adjacent to the river, on nearby uplands generally associated with the Dunn, Drummond, and San Carlos Creek drainages as well as the Broward River, and on beachfront south of the river mouth and adjacent to Mayport Naval Station and Kathryn Abbey Hanna County Park. Numbers used to identify the following potential spoil sites correspond to those used in previous PALs. The St. Johns River is identified and described by the following segments.

St. Johns River - Eastern segment

The eastern segment extends from the river mouth to the eastern end of the Dames Point-Fulton Cutoff. This segment includes and/or borders Federal lands (Mayport Naval Station, Fort Caroline National Memorial, Timucuan Ecological and Historical Preserve), state and county lands (Nassau River - St. Johns River Marshes State Aquatic Preserve, Huguenot Memorial Park), the incorporated city of Mayport, other residential development, small commercial enterprises, and Buck Island, one of three existing spoil disposal sites being considered for use in the proposed project. In addition to the river's sublittoral zone, other habitats associated with this segment include filled wetlands, upland bluffs, salt marsh, beaches, sand dunes, mud and sand flats, and rock jetties. Sand and silt comprise a substantial portion of the benthic sediments within this segment. Given the segment's short flushing time (due to its relative narrowness and proximity to the Atlantic Ocean) and its ecological nourishment from adjacent natural areas, the Service believes that any hydraulic dredging will have only temporary impacts on the open water and benthic flora and fauna. Any blasting within this segment may have more immediate and long term impacts, such as stunning and killing fish, and converting the microbenthic community from one associated with consolidated rather than unconsolidated bottom substrate.

The Service believes that an indirect operational effect of the project will be an intensification of wake-induced erosion at Huguenot Memorial Park, Fanning Island, and Fort Caroline National Memorial resulting from larger and more frequent ship traffic. The National Park Service stated a similar concern in 1993 and additional concern for possible damage to their historic structures from potential blasting. The Service recommends that any future consideration given to hardened revetments in these areas be restricted to the refurbishment of existing revetments and that other methods, such as the creation or extension of a salt marsh buffer, be considered in other areas whenever practicable.

Regarding federally protected species, the endangered West Indian manatee (*Trichechus manatus latirostris*) and shortnose sturgeon (*Acipenser brevirostrum*) occur within this river segment. This area is also federally-designated critical habitat for the manatee. There is also the potential for the endangered green (*Chelonia mydas*) and leatherback (*Dermochelys coriacea*) sea turtles and threatened loggerhead sea turtle (*Caretta caretta*) to use this portion of the river estuary.

St. Johns River - Middle segment

The river's middle segment extends from the eastern end of the Dames Point-Fulton Cutoff to its confluence with the Trout River. This segment includes and/or borders Federal land (U.S. Navy Fuel Depot), state land (Yellow Bluff Fort State Historical Site) extensive residential, commercial, and industrial development, commercial and Federal government ship cargo terminals Blount Island, Ed Austin Marine Terminal, Hess Oil Terminal), and an inactive spoil disposal site (Reed Island). Bartram Island and Site 22A, the other active spoil disposal sites, are located within or adjacent to this segment, as are the remaining potential upland spoil disposal sites. Principal habitats include filled wetlands, natural upland bluffs, spoil uplands, salt marsh, and mud flats. Sand and silt again comprise the majority of the benthic sediments within this segment. Direct impacts from dredging and blasting will probably be similar to the eastern segment. Ecological adjustments and recovery may take longer, however, due to the greater, human-related inputs into this segment of the river.

Shoreline erosion problems within this segment have been identified along the western edge of the Dames Point Peninsula and the north side of Bartram Island east of the Dames Point Bridge. A replacement revetment is currently being installed on the Dames Point site and the Corps plans to replace the old training wall at the erosion site on Bartram Island.

The Service believes that the possibility of greater erosion caused by larger and more frequent ship wakes is also of concern within this segment. Ship-induced erosion may have its greatest natural resource impact where the channel comes closest to any narrow fringing salt marsh along the northern border of Bartram Island and other salt marsh habitat within the Dames Point-Fulton Cutoff. The Service recommends that the Corps either adjust the channel side slope to minimize wave energy reaching wetlands at those locations, move the channel closer to Blount Island and Dames Point, or add the expected loss acreage of this habitat to the wetlands mitigation plan.

The manatee and the shortnose sturgeon also are expected to occur within this river segment.

St. Johns River - Western segment

The river's western segment extends between its confluences with the Trout and Arlington River, ending approximately 0.6 miles south of the Mathews Bridge. Its bordering properties include a small Federal parcel (U.S. Coast Guard), a commercial ship cargo terminal

(Talleyrand), and extensive commercial, industrial, and residential development. Principal habitats include filled wetlands, altered uplands, and a spoil island. A few small patches of remnant salt marsh and mud flats are also present. The bottom substrate consists of a relatively shallow layer of silt and sand underlain by rock that extends well into the proposed maximum project depth. Of the three river segments within the project's footprint, adjacent human activities have had the most impact on the western segment. Although potential blasting effects and physical changes in the bottom substrate are likely to be greatest in this segment, the Service believes that the overall impacts will be less significant than in the other segments due to the probability of the western segment having the lowest biodiversity of the three segments within the project's footprint.

The manatee and the shortnose sturgeon also are expected to occur within this river segment.

Site 13A - Imeson Inc./Bostwick Parcel

This parcel is an approximately 117-acre tract located north of and adjacent to Hecksher Drive between Drummond Creek and Turner Pond within the Broward and Trout River peninsula. Two warehouses and an electrical substation form its western boundary, while a generally straight line running from Hecksher Drive along an inactive Imeson Airport runway defines its northeastern boundary (Figure 2). Ground surveys were conducted on August 27 and September 24, 1996.

Site 13A is underlain by six different soils, three of which are excessive to moderately well-drained and associated with sandhill ridges (Kershaw-Ortega, Kureb, and Ortega fine sands) while the others range from somewhat poorly (Pottsburg fine sand) to poorly and very poorly drained (Leon-Ridgeland-Wesconnett and Wesconnett). Upland habitat on this site consisted primarily of a highly disturbed sandhill vegetative community dominated by turkey oak (*Quercus laevis*), longleaf pine (*Pinus palustris*), and sand live oak (*Quercus geminata*), and a live oak hammock at the lower elevations, characterized by both live and laurel oaks (*Quercus virginiana* and *Q. laurifolia*), cabbage palmetto (*Sabal palmetto*), southern red cedar (*Juniperus virginiana* var. *silicicola*), sugarberry (*Celtis laevigata*) and saw palmetto (*Serenoa repens*) (Figures 3,4,5).

The remaining acreage, which constituted approximately 60% of the site, consisted of a variety of freshwater emergent, scrub/shrub, and forested wetlands, two small depression ponds, and a drainage ditch connecting Turner Pond with Drummond Creek (Figures 6 thru 12). The emergent wetlands were located at areas of little or no slope along both sides of the drainage ditch and along the northeastern and northwestern sections of the parcel. The natural topography of these sections had been highly altered by past excavations. Three active gopher tortoise burrows (*Gopherus polyphemus*) were observed on the higher and drier portions of this area, with wetlands forming in the numerous depressional pockets scattered within this section. These wetlands appeared to be seasonally flooded and were dominated by cattail (*Typha* sp.), sedges (*Carex* spp.), soft rush (*Juncus effusus*), and red root (*Lachnanthes*

caroliniana). The scrub/shrub swamp was dominated by red maple (*Acer rubrum*), Carolina willow (*Salix caroliniana*), and small cypress (*Taxodium* sp.) with cattail around the margins. The forested wetlands were of two cover types, a mixed pine/hardwood community with an overstory of loblolly and slash pine (*Pinus taeda* and *P. elliottii*), sweetgum (*Liquidambar styraciflua*), water oak (*Quercus nigra*), red maple, and sweetbay (*Magnolia virginiana*) and a bottomland hardwood swamp dominated by red maple, cypress, water hickory (*Carya aquatica*), and tupelo (*Nyssa aquatica*).

The diversity and abundance of wildlife in this parcel has likely been historically reduced as a result of man's impacts such as mining, silviculture, development, poaching, dumping, and off-road vehicle activity. Parts of the parcel continue to be used by off-road vehicles and as dump sites for household and commercial refuse. Despite past and current disturbances, the mosaic of remaining upland, wetland, and open water habitats does have ecological value to migratory and resident birds, fish, small mammals, reptiles, amphibians, numerous invertebrates, and plants. The gopher tortoises observed may be part of a larger population north and east of this site on contiguous ruderal habitat. Their presence often means that other animal species associated with and often dependent upon the tortoise burrows may occur on the site. As a state species of special concern, any impacts to the gopher tortoise would first have to be coordinated with the Florida Game and Fresh Water Fish Commission.

Project use of this parcel would result in the complete and unavoidable loss of diverse freshwater wetlands, including freshwater habitat associated with the drainage ditch, and would require at least a 1:1 ratio of in-kind mitigation, preferably within the same watershed. Additional mitigation may be required if conveyance of dredged material and drainage water into and out of this site via the drainage ditch impacts off-site salt marsh and other intertidal habitat within the Drummond Creek drainage.

Although these wetlands contribute the majority of the ecological value to the parcel, mitigation for upland loss may be required pursuant to State of Florida guidelines. Of the two upland areas, the relatively undisturbed live oak hammock provides the most natural resource benefits. Any State guided compensation, however, would probably be based on the presence of gopher tortoises within the ruderal and disturbed sandhill community.

Due to the extensive and varied wetland impacts and the sites' overall ecological attribute, the Service objects to the proposed use of this parcel for spoil disposal.

The endangered wood stork (*Mycteria americana*) and threatened Eastern indigo snake (*Drymarchon corais couperi*) are the only federally protected species which may occur within the site. Although there are no historic records for the latter species in Duval County north and west of the St. Johns River, in the northern portion of its range, the species' activity area usually includes both wetland and upland habitats and an active gopher tortoise population.

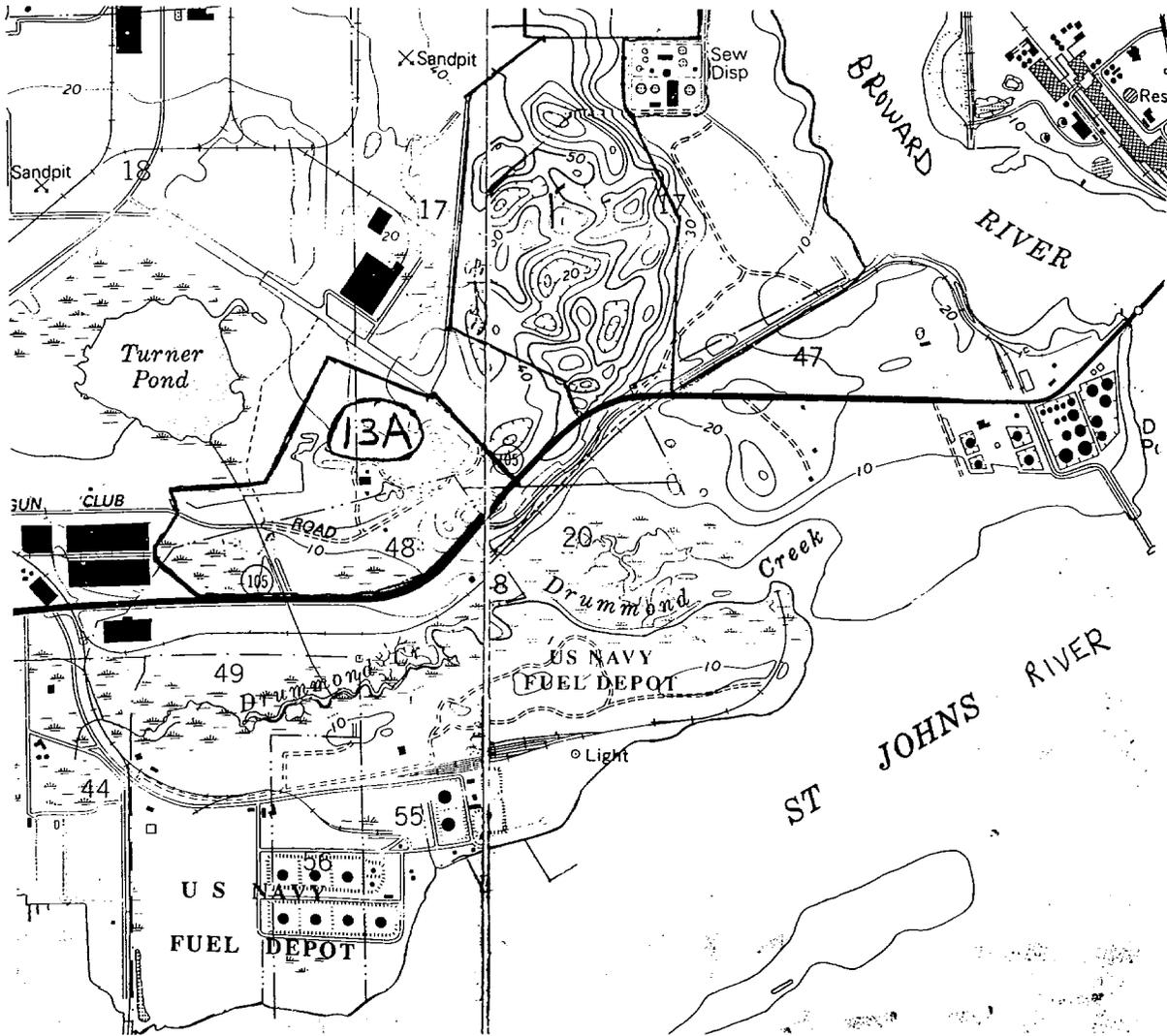


Figure 2. Site 13A



Figure 3. Disturbed sandhill.



Figure 4. Live oak hammock.



Figure 5. Live oak hammock.



Figure 6. Emergent Wetland.



Figure 7. Emergent wetland.



Figure 8. Scrub/shrub wetland.