EXHIBIT II

FISH AND WILDLIFE COORDINATION ACT REPORT

TAMPA HARBOR - BIG BEND
NAVIGATION FEASIBILITY STUDY
HILLSBOROUGH COUNTY, FLORIDA

Fish and Wildlife Coordination Act Report

Submitted to:
Department of the Army
Jacksonville District
Corps of Engineers
Jacksonville, Florida

U.S. Fish and Wildlife Service
Ecological Services
Vero Beach, Florida

FEBRUARY, 1994

TAMPA HARBOR- BIG BEND NAVIGATION FEASIBILITY STUDY
Hillsborough County

Fish and Wildlife
Coordination Act Report

Submitted to Jacksonville District
U.S. Army Corps of Engineers
Jacksonville, Florida

Prepared by: Bruce Birnhak, Project Biologist
Approved by: David L. Ferrell, Field Supervisor

Vero Beach, Florida, Field Office
U.S. Fish and Wildlife Service
Vero Beach, Florida
February 1994

United States Department of the Interior
FISH AND WILDLIFE SERVICE
P.O. BOX 2676
VERO BEACH, FLORIDA 32961-2676

February 4, 1994

Colonel Terrence C. Salt
District Engineer
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Attn: Planning Division

Dear Colonel Salt:

In accordance with Section 2(b) and other provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the Fish and Wildlife Service has completed the Fish and Wildlife Coordination Act Report on the Tampa Harbor-Big Bend Navigation Channel Feasibility Study, Hillsborough County, Florida.

This report is provided in accordance with the 1993 Scope of Work for this project by providing the Fish and Wildlife's (Service) evaluation of impacts for dredging of the Big Bend channel as well as offering recommendations on alternative spoil sites as described by the Jacksonville District, Corps of Engineers.

Letters of concurrence have been received from the Florida Game and Fresh Water Fish Commission and the National Marine Fisheries Service and are included in the Attachments section of the report. This report constitutes the final report of the Secretary of the Interior as required by Section 2(b) of the Fish and Wildlife Coordination Act (16 U.S.C. 1531 et seq.) and represents the views of the Department of the Interior.

This report is forwarded to you for inclusion in the Environmental Assessment for this Federal project.

Sincerely yours,

David L. Ferrell
Field Supervisor

cc:
EPA, Atlanta, GA
NMFS, St. Petersburg, FL
NMFS, Panama City, FL
FG&FWFC, Tallahassee, FL
FG&FWFC, Vero Beach, FL
DEP, Tallahassee, FL
FWS, Jacksonville, FL

TABLE OF CONTENTS

List of Figures

EXECUTIVE SUMMARY

The Corps of Engineers (Corps) has requested a Fish and Wildlife Coordination Act Report from the U.S. Fish and Wildlife Service (Service) regarding the environmental impacts of widening and deepening the Big Bend Channel and recommendations on alternative spoil disposal sites that could benefit fish and wildlife resources in Tampa Bay, Hillsborough County, Florida. The Service does not anticipate adverse impacts to general fish and wildlife resources from the project; however, to protect the endangered West Indian manatee, the Conservation Recommendations listed in the enclosed Biological Opinion should become an integral component of any Federally authorized project.

It is the Service's opinion that the most beneficial use of the spoil material would be to place it on the Alafia Bank to alleviate erosion of one of the nation's premier bird nesting sites. Other acceptable spoil locations are the two dredge holes near Whiskey Key. Use of the Whiskey Key site would improve water quality, thus benefitting fish and wildlife resources. Spoil could also be placed on spoil island 3D; however, this would require implementation of our recommended management plan to protect the many nesting shorebirds on the island in accordance with the Migratory Bird Treaty Act.

The Service is opposed to your plan for open water disposal immediately south of Big Bend Channel because of adverse impacts to the shallow water benthic community, loss of estuarine seagrass beds, and disruption of water circulation patterns.

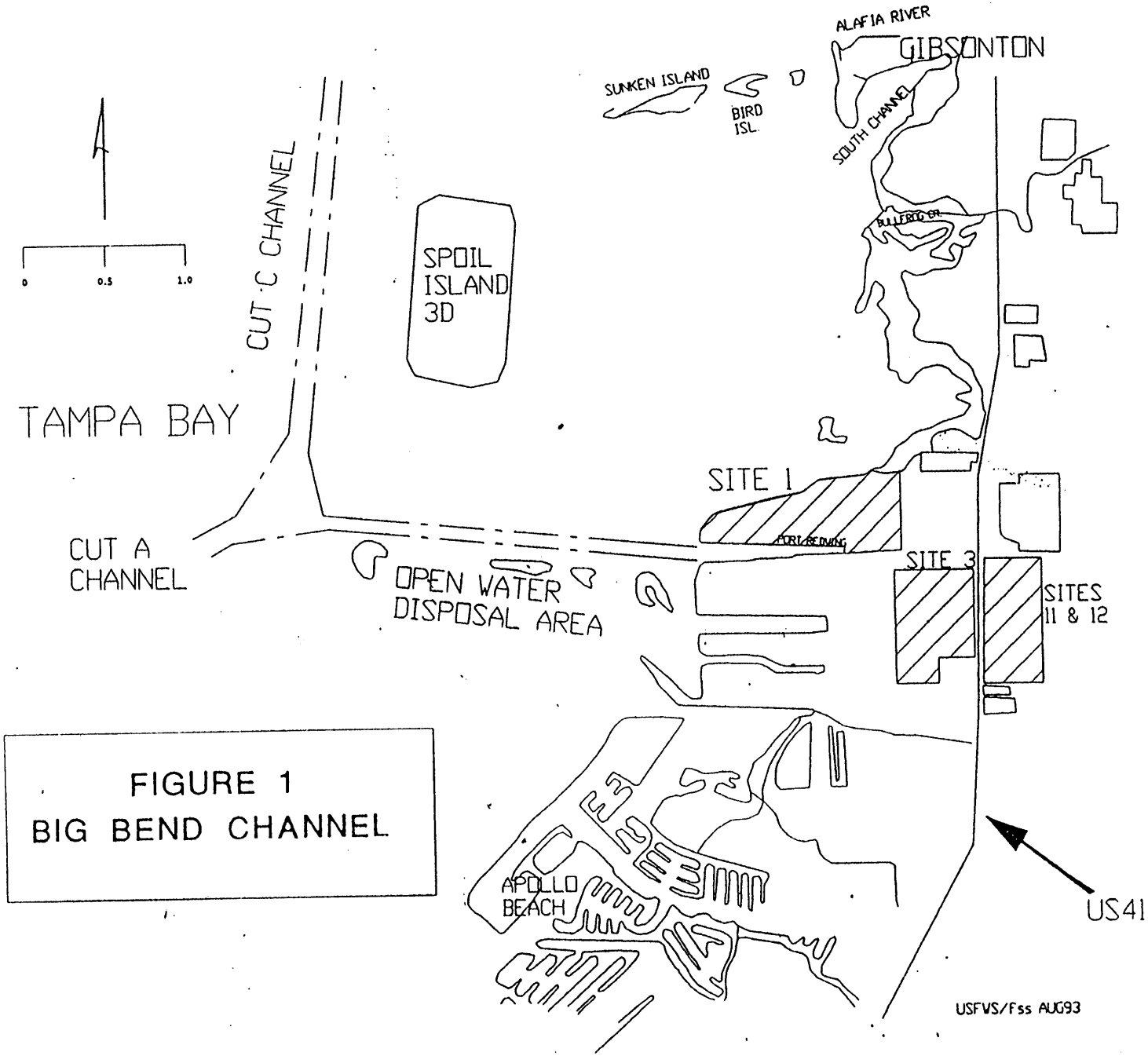

FIGURE 1
BIG BEND CHANNEL

I. INTRODUCTION

The Tampa Harbor-Big Bend Channel Navigation Feasibility Study was authorized by Senate and House Resolutions adopted May 29, 1979, and November 14, 1979, respectively. The primary purpose of the Corps of Engineers (Corps) study is to determine the need and feasibility of widening and deepening Big Bend Channel, as well as disposing of the spoil material.

II. PROJECT DESCRIPTION

The Big Bend Channel connects a multi-owner Industrial Port Complex with the Hillsborough Bay Ship Channel. The channel is about 2.2 miles long, 35 feet deep at mean low water and 200 feet wide, with a turning basin 1,000 feet long by 700 to 1500 feet wide. The Corps will examine the feasibility of widening the channel 50 feet and deepening it about 2-3 feet. The spoil material consists of good quality sand. Various alternative locations are being considered as spoil disposal sites for the material dredged from the channel. These include four upland disposal sites, two dredge holes in the vicinity of Whiskey Key, open water disposal along the Big Bend Channel, and use of spoil island 3D.

III. DESCRIPTION OF STUDY AREA

Hillsborough County is situated on Tampa Bay in central Florida. The proposed project is located within Tampa Bay about one mile north of the town of Apollo Beach (Fig.1).

IV. FISH AND WILDLIFE RESOURCES

Taxa and Important Species

Birds

Dunstan and Lewis (1974) list 83 species of birds associated with marine habitats that occur in Tampa Bay. Spoil island 3D alone supports an estimated 20,000 nests of the laughing gull.

During Service field inspections, the following bird species in the project area were observed: brown pelican, laughing gull, ring-billed gull, cormorant, green heron, and black-necked stilt. According to the Florida Game and Fresh Water Fish Commission, the emergent spoil islands south of Big Bend Channel serve as breeding areas for the American oystercatcher. Species of migrating birds are protected under the Migratory Bird Treaty Act. The Service recommends measures to avoid impacts to migratory birds and maintains permitting authority over such actions.

Fish

Springer and Woodburn (1960) in their study of the fishes of the Tampa Bay area, reported that 253 species had been collected or observed in the region. Comp (1977) accounted for 56 species of fish at Big Bend. Ninety one percent of the fish collected consisted of the following ten species: tidewater silverside, bay anchovy, longnose killifish, spotfin mojarra, striped mullet, sheepshead minnow, silver jenny, rough silverside, scaled sardine, and pinfish.

West Indian manatee

The endangered West Indian manatee is found within the vicinity of the Big Bend Channel. During periods of cold weather, they congregate at the outfall of Big Bend Power Plant which is located immediately south 3/4 mile from the eastern end of the Big Bend Channel. During the months of November through March, up to sixty manatees have been observed using the heated discharge of the Big Bend Power Plant for their survival.

V. FISH AND WILDLIFE SERVICE OBSERVATIONS

On June 9 and July 27, 1993, Service biologists inspected the project area. One of the main goals of our study was to ascertain the impact of the proposed project on seagrassbeds. We were aware from a published seagrass study performed by the Southwest Water Management District that no seagrass was found in this section of Tampa Bay. Because of reduced light penetration in the project area, we limited our seagrass search to depths less than -7 feet mean sea level. We surveyed the area with a depth recorder and snorkeled those areas where shallow depths were found. Sand bottom was encountered on all the shallow water areas investigated.

Water depths in the area where the channel is proposed for widening is about 15 feet deep mean low water (m.l.w.) which is below the depth of seagrass growth in the area.

SPOIL DISPOSAL

The location of the spoil disposal sites is shown on Figure 1.

a. OPEN WATER SPOIL SITES

Big Bend Open Water Disposal Site

This proposed spoil area was used in the past to create a series of four spoil islands. These spoil islands occur south of and parallel to the Big Bend spoil island. Two of these islands are emergent, approximately four acres in size and occur on the east and west end of the Big Bend Channel. The two middle islands are submerged about three feet below m.l.w. The only grassbeds observed were small patches of Cuban shoalgrass (Halodule wrightii) found on the western side of the eastern emergent spoil island. These grassbeds occupy an area of approximately one-half an acre.

Whiskey Key

Two borrow sites are present on the east and west side of Whiskey Key. The depths of these dredge holes are about 12 feet deep m.l.w. while the surrounding substrate consisted of shallow sand flats approximately one foot deep at the time of inspection.

b. UPLAND SPOIL SITES

Port Redwing

This site is a 284-acre man-made spoil created area vegetated by Brazilian pepper and cabbage palm.

Site 3

This potential spoil area is 183 acres in size and is used as an improved pasture.

Sites 11 & 12

These spoil sites occur adjacent to one another and are farmland presently under cultivation.

c. SPOIL ISLAND 3D

This is a man-made spoil island about 500 acres in size that is located approximately one and one half miles offshore in Hillsborough Bay. The island was constructed by the Corps and is designed as a spoil disposal area.

The island has become an important shorebird nesting area as the following data demonstrate. This information was provided by Rich Paul, National Audubon Society (personal communication), and reflects the nest counts on the island in 1991.

Species	Number of Nests
American Oystercatcher	10
Laughing Gull	10,000-20,000
Caspian Tern	65
Royal Tern	20
Black Skimmer	110

Alafia Bank

This area, comprised of two dredged material islands totalling about 49 acres, is a National Audubon Society Sanctuary. These islands are located about 2.8 miles north of the project area and occur at the mouth of the Alafia River. 10-15,000 pairs of breeding birds use the site, which makes it the largest mixed-species bird breeding colony in the State of Florida. Nesting diversity also may be unrivalled in Florida, with up to 20 species breeding annually. These two islands are presently being eroded. The following species of birds have been recorded nesting on the Alafia Bank: anhinga, brown pelican, double-crested cormorant, great blue heron, green heron, snowy egret, little blue heron, tricolored heron, reddish egret, cattle egret, black-crowned night heron, yellow-crowned night heron, white ibis, glossy ibis and roseate spoonbill.

VI. THREATENED AND ENDANGERED SPECIES

The following represents the Biological Opinion of the Fish and Wildlife Service pursuant to Section 7(a) of the Endangered Species Act of 1973, as amended (Act) concerning the Tampa Harbor-Big Bend Navigation Feasibility Study. An administrative record of this consultation is on file in the Vero Beach, Florida, Field Office.

PROPOSED PROJECT

The Corps of Engineers has determined that the proposed project would have no effect on the West Indian manatee. The Service does not concur with this determination and believes the project "may affect" the West Indian manatee.

There have been seven manatee mortalities attributed to boat/barge collisions from 1974 through December 1990. Manatees aggregate at the Tampa Electric Company warm water discharge during the cooler months. The State of Florida has designated this area as a manatee protection zone from November 15-March 31. This manatee protection zone is located 1 mile south of the proposed project. The Corps has stated that they will condition the contracts for the proposed project with the standard construction precautions to protect manatees. Therefore, it is our Biological Opinion that this project may adversely affect but is not likely to jeopardize the continued existence of the West Indian manatee.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal Agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species.

To further reduce the impact of the proposed project on the manatee, the Service recommends the following conditions, in addition to the standard construction precautions, be made part of any dredging contract issued for this project:

1. That the standard manatee conditions be included in any contract issued for the work.

2. That no dredging occur between November 15 and March 31.

INCIDENTAL TAKE

Sections 4(d) and 9 of the Act, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupts normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Under the terms of Section 7(b)(4) and 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement. The measures described and conditions of this incidental take statement. The measures described below are nondiscretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in Section 7(o)(2) to apply.

The Federal agency has a continuing responsibility to regulate the activity that is covered by this incidental take statement. If the agency fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of Section 7(o)(2) may lapse.

We have reviewed the biological information and other available information relevant to this action. Based upon our review, incidental take is not anticipated for the manatee during implementation of this project. If an accident involving a manatee occurs, all work should cease, and our Vero Beach, Florida, Field Office should be notified immediately (407-562-3909) (1360 U.S. Highway 1, Suite 5, Vero Beach, Florida 32960), as well as the Manatee Hotline (1-800-DIALFMP).

This completes consultation in accordance with the Act. If there are modifications made in the project or if additional information becomes available relating to threatened or endangered species, reinitiation of formal consultation may be required under 50 CFR Section 402.16.

VII. IMPACTS

Big Bend Open Water Disposal Site

Creating emergent spoil islands south of the Big Bend Channel would inhibit tidal circulation and destroy a half acre of seagrassbeds.

Whiskey Key

Filling in the two dredge holes in the vicinity of Whiskey Key to one foot m.l.w. would be beneficial to the benthic community and would improve the dissolved oxygen level of the surrounding waters.

Upland Spoil Sites

Deposition of spoil in the four identified upland sites would not adversely impact fish and wildlife resources.

Spoil Island 3D

We would also not be opposed to spoiling on spoil island 3D if the nesting shorebirds and gulls are protected. To protect these nesting shorebirds the Service advises that material deposition shall not occur during the nesting season, which is April 1 to September 1. We also advise that vegetative encroachment on the spoil island shall be managed to provide barren nest sites. Techniques such as prescribed burning, tilling, and raking are acceptable control methods, and shall be completed outside the nesting season. It is envisioned that when vegetation becomes dense and relatively high, it will need to be controlled probably every three years.

Alafia Bank

The most beneficial use of the spoil material that will be dredged from Big Bend Channel would be to place it on Alafia Bank to inhibit erosion of the two islands. As mentioned previously, these are the most important mixed-colony bird breeding islands in Florida and their continual longevity demands a commitment to stabilize these islands. (see attached National Audubon Society letter requesting spoil material to alleviate erosion at this location).

VIII. DISCUSSION

The project area is located in Tampa Bay which has been designated a National Estuary under the Environmental Protection Agency's National Estuary Program. This means the estuary has outstanding natural resource values of national significance. In view of these outstanding values it is important that resource protection be given the highest degree of consideration when planning projects that may alter the natural systems. These outstanding values should be properly reflected in the Benefit/Cost ratio for this project. Environmental benefits should receive greater weight for this estuary.

Widening and deepening the Big Bend Channel will have a temporary adverse impact on the benthic community of marine worms, mollusks and echinoderms but would be expected to recolonize the channel over several years.

One of the spoil areas, Alafia Bank, is an important rookery area for a variety of bird species. Placing spoil on the eroding Alafia Bank would protect this bird rookery of national significance and should thus receive the highest environmental benefit.

As mentioned previously, if raising of the dikes surrounding spoil island 3D is contemplated the potential exists for harming the shorebirds and gulls that nest in high numbers on this spoil island. To prevent adverse impact to the birds (and thus avoid violation of the Migratory Bird Treaty Act) spoil should not be placed on this island during the nesting season.

Filling in the deep holes in the vicinity of Whiskey Key would also produce environmental benefits by providing shallow water habitat as well as increasing the water quality of the area.

Spoil placement on the upland sites would have a neutral benefit to the environment. While spoil disposal in the Big Bend open water disposal site would have negative environmental consequences as it could cover benthic habitat, fill estuarine grassbeds and disrupt circulation patterns in the area.

The endangered West Indian manatee could also be adversely impacted by the channel dredging, however implementation of our Conservation Recommendations listed in the Biological Opinion on the manatee should adequately protect this species.

Spoil Site Ranking

The following is a priority listing of the spoil sites in relation to their importance in enhancing fish and wildlife resources.

1. The most important spoil disposal area to benefit an extremely important bird breeding area would be to place spoil on the Alafia Bank to inhibit erosion. Spoil placement would have to occur during the breeding birds colony non-nesting season (September 2 to March 31).

2. Filling in the deep borrow sites in the vicinity of Whiskey Key will benefit the benthic community and raise the dissolved oxygen level of the nearby water column.

3. Spoil placement on spoil island 3D needs careful planning so as not to impact the breeding shorebirds that nest on this island. No material deposition should occur during the nesting season, which is April 1 to September 1. Also, vegetative encroachment on the island should be managed to provide barren nest sites.

4. Spoiling on any of the four upland disposal sites should have minimal adverse impact on fish and wildlife resources.

5. Creating spoil islands south of Big Bend Channel could destroy benthic habitat and create water circulation problems.

IX. FISH AND WILDLIFE SERVICE RECOMMENDATIONS

The Fish and Wildlife Service recommends the following be included in Tampa Harbor-Big Bend Navigation Feasibility Study:

1. The proposed open water disposal area located south of the Big Bend Channel be should be deleted from project plans because of adverse environmental effects.

2. The highest priority should be given to providing the spoil needs of the Alafia Bank and its irreplaceable nesting bird colonies.

    A. No spoil should be placed during the birds' breeding season which is April 1 to September 1.

3. The remaining spoil material (that material in excess of that needed for the Alafia Bank) could be placed on spoil island 3D.

    A. No spoil should be placed during the shorebird nesting season, which is April 1 to September 1.

    B. Vegetative encroachment on spoil disposal island 3D should be managed to provide barren nest sites. Techniques such as prescribed burning, tilling, and raking are acceptable control methods, and should be completed outside the nesting season. It is envisioned that when vegetation becomes dense and relatively high, it will need to be controlled probably every three years.

4. The Conservation Recommendations that were listed in our Biological Opinion for the endangered West Indian manatee should be made part of the Feasibility Study.

X. SUMMARY

The Corps has requested a Fish and Wildlife Coordination Act Report from the Service regarding the environmental impacts of widening and deepening the existing Big Bend Channel as well as explore for beneficial uses of the resultant spoil material. Channel dredging will have minimal adverse impact on fish and wildlife resources, as long as the Conservation Recommendations to protect the manatee are implemented and spoil placement is carefully planned.

The Services preferred use of the spoil material to benefit fish and wildlife resources would be to place it on the Alafia Bank to alleviate erosion. The next preferred area to place the spoil would be to fill the two deep dredge holes found at Whiskey Key. Spoil placement at spoil island 3D would serve to raise the dikes of the island allowing additional storage of dredged spoil which would temporarily alleviate the need to build additional large spoil disposal islands in Tampa Bay. Our aforementioned management plan to protect the nesting shorebirds would have to be implemented if the spoil island 3D disposal site is selected. Spoiling on any of the four upland disposal sites would have no adverse effects on fish and wildlife resources.

The Service is opposed to the open water disposal site located south of Big Bend Channel because of its adverse impact on the shallow water benthic community, including one-half acre of seagrassbeds. Placement of spoil in this area will also disrupt local water circulation patterns. Therefore, we recommend that this disposal area be deleted from consideration in the Feasibility Study.

XI. Literature Cited

Comp, G.S. 1977. An assessment of the impact of thermal discharge on fish and macroinvertebrate communities at Big Bend, Tampa (Florida). In R. D. Garrity, S. Mahadevan and W. Tiffany (eds.) Tampa Electric Company- a 316 demonstration, final report on the Big Bend thermal and ecological surveys. Prepared by Conservation Consultants, Inc. 93 pp.

Dunstan, F.M. and R.R. Lewis III. 1974. Avian utilization and plant succession on dredged material islands in Tampa Bay, Florida. Contract report of Coastal Zone Resources Corp., Wilmington, NC. 73 pp.

Ogden, J.C. 1978. Recent population trends of colonial wading birds on the Atlantic and Gulf coastal plains. Pp. 137-153 in A. Sprunt IV, J.C. Ogden and S. Winkler (eds.), Wading Birds. Nat. Audubon Soc. Res. Rept. No. 7.

Springer, V. G. and K. D. Woodburn. 1960. An ecological study of the fishes of the Tampa Bay area. Fl. State Bd. Cons. Mar. Lab. Prof. Pap. Ser.1. 104 pp.

FLORIDA GAME AND FRESH WATER FISH COMMISSION

MRS. GILBERT W. HUMPHREY, Miccosukee | JOE MARLIN HILLIARD, Clewiston | J. BEN ROWE, Gainesville | JULIE K. MORRIS, Sarasota | QUINTON L. HEDGEPETH, DDS, Miami

ALLAN L. EGBERT, Ph.D., Executive Director
WILLIAM C. SUMNER, Assistant Executive Director

FARRIS BRYANT BUILDING
620 South Meridian Street
Tallahassee, FL 32399-1600
(904) 488-1960
TDD (904) 488-9542

RECEIVED
JAN 18 1994

January 11, 1994

Mr. Dave Ferrell
United States Department of the Interior
Fish and Wildlife Service
P.O. Box 2676
Vero Beach, Florida 32961-2676

RE: Hillsborough County, Draft Fish and Wildlife Coordination Act Report on Tampa Harbor-Big Bend Navigation Feasibility Study, October 1993

Dear Mr. Ferrell:

The Office of Environmental Services of the Florida Game and Fresh Water Fish Commission has reviewed the proposed revised report on the referenced project, and concurs with your findings and recommendations as specified in the report.

Please call me if we can be of further assistance.

Sincerely,

Bradley J. Hartman, Director
Office of Environmental Services

BJH/JWB3/lav
ENV 1-5-2
bigbendt.fws
cc: Colonel Terrence C. Salt
District Engineer
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0012

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

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

November 4, 1993

BB
RECEIVED
NOV 10 1993

Mr. David L. Ferrell
United States Department of Interior
Fish and Wildlife Service
Post Office Box 2676
Vero Beach, Florida 3261-2676

Dear Mr. Ferrell:

This responds to your October 12, 1993 request for concurrence and comments regarding the October 1993 Draft Fish and Wildlife Coordination Act Report for the Tampa Harbor-Big Bend Channel Navigation Feasibility Study. The existing channel is approximately 2.2 miles long, 35 feet deep and 200 feet wide and connects a multi-owner industrial port complex with the Hillsborough Bay Ship Channel. The proposal is to widen the channel 50 feet and deepen it 2-3 feet.

The proposed project would not impact submerged aquatic vegetation (SAV) and depths in the project area depths are approximately -15 feet mean low water. In view of this, we agree that impacts, resulting from the dredging, to living marine resources (LMR) are expected to be minimal and temporary.

Placement of the dredge material could be beneficial, adverse or immaterial to LMRs. Beneficial uses of the material could include providing adequate elevation and creating emergent marsh for protection of the Alafia Bank or by filling the deep borrow pits (that historically experience low dissolved oxygen) near Whiskey Key. We strongly agree that no open water disposal should occur south of the Big Bend Channel due to the presence of SAV and shallow water habitat. However, we believe that use of Disposal Island 3D, thereby reducing its overall capacity, should not be considered if upland disposal sites are available. Upland disposal would not affect LMRs.

In view of the above, the National Marine Fisheries Service recommends the following:

1) That upland disposal have higher priority than Disposal Island 3D on disposal site ranking list in Section VII; and,

2) That filling of the borrow sites near Whiskey Key and use of upland disposal sites be recommended instead of Disposal Island 3D in Section IX.

If you have any questions regarding these comments, or if we can be of further assistance, please contact Mr. David N. Dale at 813/893-3503.

Sincerely,

Andreas Mager, Jr.
Assistant Regional Director
Habitat Conservation Division

cc:
F/SEO2
F/SEO23-St PETE

National Audubon Society

TAMPA BAY SANCTUARIES
410 WARE BLVD., SUITE 500, TAMPA, FL 33619 (813) 623-6826

September 23, 1993

RECEIVED
SEP 27 1993
FE

Mr. David Ferrell, Field Supervisor
Office of Ecological Services
U. S. Fish and Wildlife Service
P. O. Box 2676
Vero Beach, FL 32961

Subject: Need for dredge material additions at Alafia Bank

Dear Mr. Ferrell:

We are the stewards of several important bird colonies in the Tampa Bay region. The most important of these occurs on a pair of dredge material islands in Hillsborough Bay known as the Alafia Bank. In 1993, an estimated 10,000 breeding pairs of 22 species nested at this site, including nine state-listed Species of Special Concern (Brown Pelican, Snowy Egret, Little Blue Heron, Tricolored Heron, Reddish Egret, White Ibis, Roseate Spoonbill, Black Skimmer, and American Oystercatcher). In addition, 75 pairs of Caspian Terns nested here, the only known breeding site for this species in Florida. None of these species is currently federally listed, although the Brown Pelican was formerly classified as Endangered and the Reddish Egret is currently a "Category 2" species.

By several measures, the Alafia Bank is one of the outstanding bird colonies in the nation. The Florida Game and Fresh Water Fish Commission recently ranked it as the most important colony in the state. In most years, it is one of the largest half-dozen or so colonies in the eastern U. S., and formerly (1940s-1950s) considered to be the largest colony in the country. With 17-22 species nesting annually since at least 1980, it is the most diverse colony in the nation.

The islands occur on the south side of the Alafia ship channel just outside the mouth of the Alafia River, and were created by

sidecasting of dredge spoils during channel construction in the late 1920s. The western end of the island chain has always been subject to chronic erosion. One of the islands, "Sunken Island", eroded away by the 1950s and was rebuilt during channel deepening in 1960. To counter continuing erosion, clean sand dredged during the Tampa Harbor Deepening Project was placed at the western end of Sunken Island in a fishhook configuration in November 1977. A planting project inside the new cove resulted in the rapid development of a solid mangrove stand, and within 7 years of planting, herons and ibis had begun nesting in the new habitat.

The cove continues to provide mangrove nesting habitat for up to 2000 pairs of nesting birds, while the barren uplands behind are used by nesting gulls, terns, and skimmers. The cove also features a diversity of habitats not fully anticipated at the time the project was planned. Mussel bars have formed under the mangroves. Two small creeks and a shifting salt barren testify to the dynamic forces still at work, and provide important fishery values. Fringing Spartina patches offer marsh habitats for small mullet and killifish, and are heavily used by marsh snails (Littorina sp.). A sand bar at the southeastern margin of the cove is an important roost site for a wide variety of resident, migrant and wintering bird species. Large numbers of diamond-backed terrapins use the cove, and its shorelines provide excellent redfishing for a few local guides. We consider this an excellent example of a coastal habitat creation project, with outstanding ecological benefits.

Erosion continues at Alafia Bank, along the major east-west shorelines and especially at the northwest and southwest corners of the Extension. Accretion does occur at some sites, but it does not equal the losses due to erosion. Since I have been here (13 years), shoreline recession has resulted in the loss of significant amounts of nesting habitat. Both routine annual forces and major storm events cause the damage. In the severe March 13 storm, for example, up to 40 feet of shoreline recession was measured at permanent transects. Continuing erosion threatens the long-term suitability of Alafia Bank as a colony site.

We believe that the only feasible way to counter these habitat losses is to periodically add material to the island. Construction-grade material is not often available, so opportunities are few. Two such opportunities appear to exist now: the proposed deepening of the Alafia channel, and the deepening/widening of the Big Bend

channel. I believe that these may be the last opportunities to obtain construction-grade material for the next 40-50 years, since it is unlikely that new channels will be dredged in Hillsborough Bay nor that existing channels will again be deepened.

As the manager of the sanctuary, I must look to the future security of the site. Without construction-grade material available in the future, and with erosion a continuing force, I believe it is very important to obtain material now to ensure the long-term availability of nesting habitat. I have discussed our needs with Bill Fonferek of the Corps of Engineers, Gray Gordon and Dean Kleinschmidt of Cargill Fertilizer, and Bruce Birnhak of your office, and look forward to continuing those discussions to ensure that any proposed project design offers the maximum ecological benefit possible, and a future for this outstanding colony.

I invite your support of the beneficial use of dredge material at Alafia Bank.

Sincerely,

Richard T. Paul

Richard T. Paul
Manager

cc: Bruce Birnhak
Frank Dunstan, NAS
Bill Fonferek, COE
Gray Gordon, Cargill Fertilizer