application (to the State of Florida) for Water Quality Certification pursuant to Section 401 of the Clean Water Act; certification of state lands, easements, and rights of way; and determination of Coastal Zone Management Act consistency.

Agency Role: As the non-Federal sponsor and leading local expert; DERM will provide extensive information and assistance on the resources to be impacted, mitigation measures, and alternatives.

DEIS Preparation: It is estimated that the DEIS will be available to the public on or about October 9, 1998. We plan to post the DEIS on the environmental documents page of the Jacksonville District's web site. (http://www.saj.usace.army.mil/pd/env-doc.htm.)

Dated: August 7, 1998.

George M. Strain,

Acting Chief, Planning Division.

[FR Doc. 98-22470 Filed 8-20-98; 8:45 am]

BILLING CODE 3710-AJ-M

DEPARTMENT OF DEFENSE

Department of the Navy

Notice of Availability of Invention for Licensing; Government-Owned Invention

AGENCY: Department of the Navy, DOD.

ACTION: Notice.

SUMMARY: The following invention is assigned to the United States Government as represented by the Secretary of the Navy and is available for licensing by the Department of the Navy: U.S. Patent Application Ser. No. 08/940,043 entitled "Fiber-Reinforced Phthalonitrile Composite Cured With Low-Reactivity Aromatic Amine Curing Agent," Navy Case No. 78246.

ADDRESSES: Requests for copies of this patent application should be directed to the Office of Naval Research, ONR 00CC, Ballston Tower One, 800 North Quincy Street, Arlington, Virginia 22217-5660, and must include the Navy Case number.

FOR FURTHER INFORMATION CONTACT: Mr. R.J. Erickson, Staff Patent Attorney, Office of Naval Research, ONR 00CC, Ballston Tower One, 800 North Quincy Street, Arlington, Virginia 22217-5660, telephone (703) 696-4001.

(Authority: 35 U.S.C. 207, 37 CFR Part 404.)

Dated: August 12, 1998.

Michael I. Quinn,

Commander, Judge Advocate General's Corps, U.S. Navy, Federal Register Liaison Officer.

[FR Doc. 98-22473 Filed 8-20-98; 8:45 am]

BILLING CODE 3810-FF-P

DEPARTMENT OF ENERGY

Pit Disassembly and Conversion Demonstration Environmental Assessment and Research and Development Activities

AGENCY: Department of Energy.

ACTION: Finding of no significant impact.

SUMMARY: An environmental assessment (EA) has been prepared to assess potential environmental impacts associated with a U.S. Department of Energy (DOE) proposed action to test an integrated pit disassembly and conversion process on a relatively small sample of pits and plutonium metal at the Los Alamos National Laboratory (LANL) in New Mexico. The proposed action would involve performing work in a series of interconnected gloveboxes using remote handling, automation, and computerized control systems to minimize operator exposure where possible, increase safety, and minimize the amount of waste generated by the process. Based on the analysis in the EA and considering comments received, DOE has determined that the proposed action is not a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act (NEPA). Therefore, the preparation of an environmental impact statement (EIS) is not required. The EA also discusses other on-going research and development activities, which have already been reviewed pursuant to NEPA, and which concern pit disassembly and conversion, potential mixed oxide (MOX) fuel fabrication, and immobilization of surplus plutonium.

ADDRESSES AND FURTHER INFORMATION: Single copies of the EA and further information concerning the proposed action are available from: Mr. G. Bert Stevenson, NEPA Compliance Officer, Office of Fissile Materials Disposition (MD-4), U.S. Department of Energy, PO Box 23786, Washington, DC 20026-3786, (202) 586-5368.

For further information regarding the DOE NEPA Process, contact: Ms. Carol Borgstrom, Director, Office of NEPA Policy and Assistance, Office of Environment, Safety and Health, U.S. Department of Energy, 1000 Independence Avenue, SW, Washington, DC 20585, (202) 586-4600 or (800) 472-2756.

SUPPLEMENTARY INFORMATION:

Purpose and Need

DOE needs to develop the capability to disassemble surplus plutonium pits which are sealed in metallic shells. (A pit is a nuclear weapons component.) In order to develop this capability in a timely manner, safety and operational design information must be obtained from the actual disassembly of up to 250 representative pits and the conversion of the recovered plutonium to plutonium metal ingots and plutonium dioxide. The resulting experience would be used to supplement information developed to support the design of a full-scale disassembly and conversion facility should DOE decide to construct such a facility in the *Surplus Plutonium Disposition Environmental Impact Statement* (SPD EIS) Record of Decision (ROD).

Background

DOE is implementing a long-term program to provide safe and secure storage of weapons-usable fissile materials, and to allow for the timely disposition of weapons-usable plutonium declared surplus to national security needs. The program's goal is to ensure that there is a high standard of security and accounting of these materials while in storage, and that the surplus plutonium is never used again in nuclear weapons.

In January 1997, DOE issued the ROD for the *Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Environmental Impact Statement (Storage and Disposition Final PEIS).* In the PEIS ROD, DOE announced a decision to pursue a strategy to dispose of surplus United States plutonium that allows for two separate approaches: (1) Immobilization of some (and potentially all) of the surplus plutonium; and (2) using some of the surplus plutonium as MOX fuel in existing commercial reactors. In that decision, DOE explained that the timing and extent to which either or both of the disposition approaches are ultimately deployed would depend in part on the follow-on SPD EIS, as well as technology development and research.

Proposed Action

In order to meet the purpose and need for this action, DOE proposes that an integrated Pit Disassembly and Conversion Demonstration take place at LANL's Plutonium Facility-4 in Technical Area-55. No new facilities are needed to support this demonstration; however, minor internal modifications

PD

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1875 Century Boulevard
Atlanta, Georgia 30345

IN REPLY REFER TO:

OCT 0 5 1998

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

Dear Colonel Miller:

The Fish and Wildlife Service has recently received a copy of the August 21, 1998, *Federal Register* (volume 63, page 44850) regarding the Army Corps of Engineers' intent to renourish a segment of the Dade County Beach Erosion Control and Hurricane Protection Project using aragonite from the Bahamas or Turks and Caicos Islands. This letter is submitted in accordance with the provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 15 U.S.C. 661 *et seq.*).

A draft Fish and Wildlife Coordination Act Report dated July 28, 1998, addressing project impacts has been submitted to the Corps. As the project is in the planning stages, many of the details of plan implementation are, as of yet, unknown. Recently, it has come to our attention that conveyance of aragonite to the beach may require a pipeline to be laid across an undetermined reef area. This information was not available at the time when the draft Fish and Wildlife Coordination Act Report was prepared. If the laying of a pipe across reef habitat may be needed for project implementation, additional coordination with the Service's South Florida Field Office will be necessary.

Sincerely yours,

Linda H. Kelsey
Assistant Regional Director
Acting

PD

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecosystem Office
P.O. Box 2676
Vero Beach, Florida 32961-2676

July 28, 1998

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

Attn: Planning Division

Dear Colonel Miller:

The U.S. Fish and Wildlife Service (FWS) has reviewed the project plans for the Dade County Beach Erosion Control project, which were attached to your letter dated March 27, 1997. The U.S. Army Corps of Engineers (COE) proposes to deposit non-domestic oolitic aragonite along a mile-long reach of shoreline in Miami Beach, Dade County, Florida. The current project would be conducted as a test of material for use in beach renourishment along the coast of Florida, particularly where domestic offshore sand has become scarce. The experimental beach would be located from DEP monument markers R-39 to R-44 (between 65th and 80th Streets). The material is to be obtained from either the Bahama Banks or from the Turks and Caicos Islands. The exact source of the material will be determined during the procurement process. This draft report is submitted in accordance with the Fish and Wildlife Coordination Act of 1956, as amended, (16 U.S.C. 661 *et seq.*).

Based on our evaluation of an aragonite beach on Fisher Island in Dade County, the FWS has determined that the effects of depositing 500,000 cubic yards of aragonite on Miami Beach should be insignificant to fish and wildlife resources. The ocean bottom in the area offshore of the proposed project is reported, by Dade County biologists, to be barren sand. Oolitic aragonite is reported to contain less than four percent silt and clay. This should greatly reduce project-related turbidity and reduce the threat of sedimentation on reef areas which may exist at a distance from the fill site. In addition, as no dredging offshore in waters of the United States will be required to obtain fill for this project, dredging effects normally associated with beach project construction will be eliminated.

The FWS does not object to this project, as proposed, but suggests that the COE consider the following conditions to ensure that the project is environmentally sound:

1. Only material containing less than five percent silt and clay should be deposited in the project fill area.

2. When selection of the site is made, samples of the source material should be sent to a laboratory or individual specializing in infaunal analysis. The material should be examined for any organisms which may pose a potential problem to infaunal communities native to South Florida beaches. We suggest that the COE contact Jim Colter of Mote Marine Laboratory, Sarasota County, Florida; Walt Nelson of the Environmental Protection Agency, Newport, Oregon; or Barry Vittor and Associates, Inc. of Mobile, Alabama.

Copies of this letter have been sent to the National Marine Fisheries Service and the Florida Game and Fresh Water Fish Commission for their concurrence. Their response is requested within thirty days of receipt of this letter. Copies of their comments will be forwarded to the COE as soon as they are received by the FWS.

Thank you for this opportunity to provide these comments. Should you require further clarification or assistance, please do not hesitate to contact Chuck Sultzman of our office at (561) 562-3909.

Sincerely,

Kalani D. Cairns

for James J. Slack
Project Leader
South Florida Field Office

cc:
NMFS, Miami, FL
GFC, Vero Beach, FL
DEP, Tallahassee, FL

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, FL 33702

F/SER3:JBM

JUL 15 1998

Mr. George M. Strain
Acting Chief, Planning Division
Jacksonville District, Corps of Engineers
U.S. Department of the Army
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear Mr. Strain:

This is in response to your letter of June 19, 1998, concerning Dade County's Beach Erosion Control and Hurricane Protection Project to test beach fill along a portion of the Atlantic Ocean shoreline of Dade County, Miami Beach, Florida. You propose to use beach-quality material obtained from the Bahama Bank and the Turks and Caicos islands to develop alternative sources of land fill to meet future renourishment requirements. A Biological Assessment was submitted pursuant to Section 7 of the Endangered Species Act (ESA) of 1973, as amended.

We concur with your determination that the proposed action will not adversely affect any listed endangered and threatened species under the jurisdiction of the National Marine Fisheries Service. It is also unlikely that listed sea turtles will be impacted by this activity since 1) no hopper dredging will occur and 2) precautions will be taken to " . . . minimize interference with, disturbance of, or damage to wildlife resources." However, this consultation does not consider the effects to sea turtles on nesting beaches, which is under the purview of the Fish and Wildlife Service.

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

If you have any questions or concerns about this matter, please contact Colleen Coogan, of the Protected Resources Division, at 727-570-5312.

Sincerely yours,

Andrew J. Kemmerer
Regional Administrator

cc: FWS - Vero Beach, FL
F/SER43 - J. Madden

file: 1514-22 f.1 FL

United States Department of the Interior

PD

FISH AND WILDLIFE SERVICE
South Florida Ecosystem Office
P.O. Box 2676
Vero Beach, Florida 32961-2676

June 30, 1998

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

FWS Log No: 4-1-96-268
Proposed Action: Aragonite test beach
Agency : Corps of Engineers
County: Dade

Attn: Planning Division

Dear Colonel Miller:

This responds to your letter of June 5, 1998, regarding the proposed construction of an aragonite test beach in Dade County Florida. A Biological Assessment and Scope of Work were attached to your letter. The Scope of Work, prepared by your Waterways Experiment Station, outlined the protocol for pre-project assessment. Our comments are submitted in accordance with Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

This project is within the scope of the Fish and Wildlife Service (FWS) Coast of Florida Study Biological Opinion (CFS-BO) and is referenced by FWS log No. 4-1-96-268. Beach renourishment at this location with sand from an offshore borrow area was addressed by the FWS in the CFS-BO and, accordingly, Section 6d. of your Biological Assessment states that the Terms and Conditions of the Coast of Florida Study Biological Opinion, as amended, will be followed.

The Corps of Engineers (COE) has determined that this action "may affect" the threatened loggerhead sea turtle (*Caretta caretta*), the endangered (E) green sea turtle (*Chelonia mydas*), leatherback (*Dermochelys coriacea*)(E), and hawksbill (*Eretmochelys imbricata*)(E) sea turtles and the West Indian manatee (*Trichecus manatus*)(manatee).

According to your letter, the standard precautions for the protection of the manatee will be followed during construction. Risk of injury to manatees should be negligible as a result of these precautions. Thus, we concur with your determination that the project is not likely to adversely affect the manatee.

This project differs from the project covered by the CFS-BO in that aragonite sand will be imported from the Bahamas. According to the project biologist at the COE, no additional disturbance to sea turtle nesting will occur during this project than would occur during a renourishment with sand from offshore of Dade County. Thus, the FWS concurs with your determination that the project may effect threatened and endangered sea turtles and that potential adverse affect on sea turtles has been addressed in the CFS-BO. The FWS requests you provide us with a copy of the post-project assessment plans for study of sea turtle nesting at the experimental and control sites.

If modifications are made in the project or if additional information involving potential impacts on listed species becomes available, reinitiation of consultation may be warranted. If you have any questions, please contact Chuck Sultzman at (561) 562-3909.

Sincerely,

Thomas E. Chapman

for James J. Slack
Project Leader
South Florida Field Office

cc:

FDEP-OPSM, Tallahassee, FL
FG&FFC, Vero Beach, FL
FWS, Jacksonville, FL (Attn: Sandy MacPherson)

JUN 19 [illegible]

Planning Division
Environmental Branch

Mr. Charles A. Oravetz
Chief, Protected Species Management Branch
National Marine Fisheries Service
9721 Executive Center Drive North
St. Petersburg, Florida 33702

Dear Mr. Oravetz:

This is in reference to the Dade County Beach Erosion Control and Hurricane Protection Project and the proposed test beach fill along a portion of Miami Beach.

Enclosed is a Biological Assessment pursuant to Section 7(a) of the Endangered Species Act. The purpose of the test fill is to evaluate the physical and environmental performance of aragonite as a sand source for beach nourishment. Potential sources for the material are from the Bahamas Bank and the Turks and Caicos Islands. The proposed project will not involve dredging from offshore borrow areas within the Southeastern United States. The U.S. Army Corps of Engineers has determined that the proposed action will not adversely affect any listed species under the jurisdiction of the National Marine Fisheries Service.

Your concurrence on this determination is requested. If you have any questions or need any additional information, please contact Mr. Mike Dupes at 904-232-1689.

Sincerely,

George M. Strain
Acting Chief, Planning Division

Enclosure

bcc: CESAJ-DP-I

ENDANGERED SPECIES ACT
BIOLOGICAL ASSESSMENT
DADE COUNTY BEACH EROSION CONTROL AND HURRICANE PROTECTION PROJECT

SUSTAINABILITY OF RENOURISHMENT
MIAMI BEACH TEST FILL

1. PROJECT LOCATION: The study area is located along the Atlantic Ocean shoreline of Dade County on the lower southeast coast of Florida (Figure 1).

2. DESCRIPTION OF THE PROPOSED ACTION: Offshore borrow sources of beach quality sediment along the Dade County shoreline have been almost completely depleted, and alternative sources of material will be required in the near future to provide continued renourishment of the Dade County Beach Erosion Control and Hurricane Protection Project. Although carbonate sediment from offshore borrow sites has traditionally been used for project renourishment, the use of oolitic aragonite from non-domestic sources may provide an effective alternative for future renourishment requirements.

Virtually unlimited supplies of beach-quality material are available in the Bahamas Bank, located 65 miles east of the project site, and in the Turks and Caicos Islands, located approximately 500 miles to the southeast. The proposed test fill will be constructed using aragonite from one of these sources. The purpose of the test fill, in addition to providing nourishment to an eroded portion of the Federal project along northern Miami Beach, is to evaluate the physical and environmental performance of aragonite on the beach erosion control project.

The proposed test fill site is located along northern Miami Beach, and will extend along approximately one mile of shoreline which has been an erosional area since the project was constructed. The total volume of the test fill is expected to be approximately 500,000 cubic yards. The currently proposed location for the test fill is between 65th and 80th Streets in Miami Beach (DNR monuments DNR-39 to DNR-44), as shown in figure 2. The exact source of aragonite (or other carbonate sand) for the test beach would be determined during the procurement process. Sand sources proposed by contractors would have to meet a set of generic sand specifications and pass a screening process for sand characteristics and possible introduction of undesirable benthic organisms

3. REFERENCES: The following documents are incorporated into this Biological Assessment by reference.

- U.S. Army Corps of Engineers, Biological Assessment for Dredging Navigation Channels in the Southeastern United States from North Carolina through Cape Canaveral, Florida, dated November 8, 1994.

- National Marine Fisheries Service, Regional Biological Opinion dated August 25, 1995, for Hopper dredging of channels and beach nourishment activities in the Southeastern United States from North Carolina through Florida East Coast.

- National Marine Fisheries Service Regional Biological Opinion dated September 25, 1997, for the continued hopper dredging of channels and borrow areas in the Southeastern United States.

4. LISTED SPECIES WHICH MAY BE AFFECTED: Listed species which may occur in the vicinity of the project area and are under the jurisdiction of the National Marine Fisheries Service are: loggerhead sea turtle (*Caretta caretta*, T), green sea turtle (*Chelonia mydas*, E), leatherback sea turtle (*Dermochelys coriacea*, E), hawksbill sea turtle (*Eretmochelys imbricata*, E), Kemp's ridley sea turtle (*Lepidochelys kempii*, E), right whale (*Eubalaena glacialis*, E), humpback whale (*Megaptera novaeangliae*, E), finback whale (*Balaenoptera physalus*, E), sei whale (*Balaenoptera borealis*, E), and sperm whale (*Physeter macrocephalus*, E).

5. DISCUSSION OF POTENTIAL IMPACTS TO LISTED SPECIES:

The potential impacts to listed species are discussed at length in the above referenced documents and are incorporated here by reference.

6. EFFORTS TO ELIMINATE POTENTIAL IMPACTS:

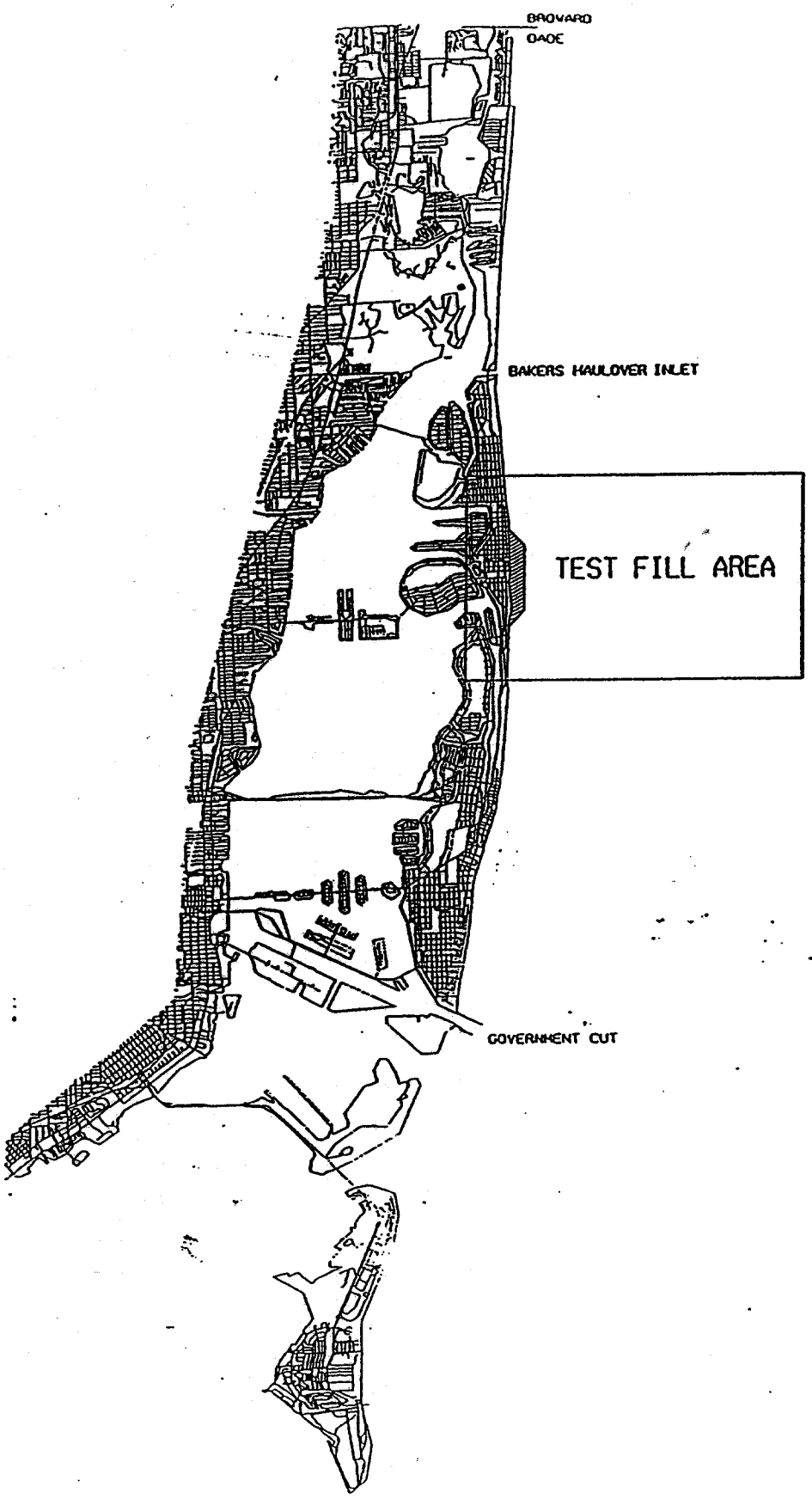
Efforts to eliminate of significantly reduce the potential impacts associated with beach nourishment activities will be addressed by implementing the following actions:

a. Construction activities will be kept under surveillance, management, and control to minimize interference with, disturbance of, or damage to wildlife resources. Prior to the commencement of construction the contractor will be required to instruct all personnel associated with the project that endangered species could be in the area, the need to avoid collisions with them, and the civil and criminal penalties for harming, harassing or killing them.

b. No hopper dredging will occur in borrow areas located in waters of the United States. The material to be placed on the test beach will come from a source located in foreign waters.

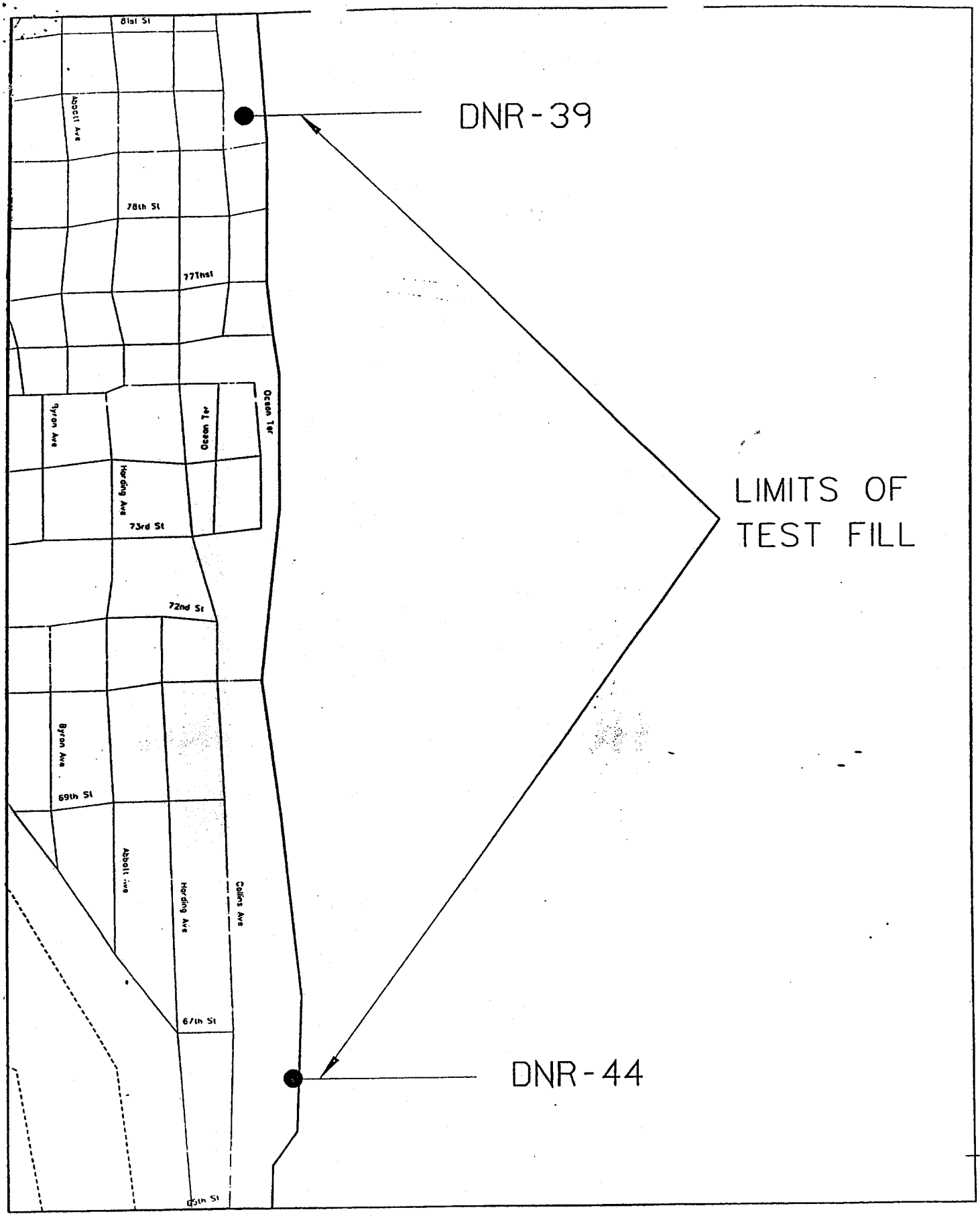
c. Other methods to eliminate or minimize potential impacts are discussed in the above referenced documents and are incorporated here by reference.

7. EFFECT DETERMINATION: Because of the nature of the work, the precautions to be taken as described in the previous section, and the fact that hopper dredging will not occur in waters of the U.S., the U.S. Army Corps of Engineers has determined that the proposed action will have no effect on listed species under the jurisdiction of the National Marine Fisheries service.



DADE COUNTY TEST FILL SITE

FIGURE 1



SUSTAINABILITY OF RENOURISHMENT
MIAMI BEACH TEST FILL

Figure 2

JUN 05 1998

Planning Division
Environmental Branch

Mr. James J. Slack
South Florida Field Office
U.S. Fish and Wildlife Service
Post Office Box 2676
Vero Beach, Florida 32961-2676

Dear Mr. Slack:

This is in reference to the Dade County Beach Erosion Control and Hurricane Protection Project and the proposed test beach fill along a portion of Miami Beach.

Enclosed is a Biological Assessment pursuant to Section 7(a) of the Endangered Species Act. The U.S. Army Corps of Engineers has determined that the planned beach fill may affect sea turtles. Therefore, we are requesting formal consultation with the U.S. Fish and Wildlife Service be initiated to address potential impacts the project may have on nesting sea turtles, turtle nests, and hatchlings.

If you have any questions or need further information, please contact Mr. Mike Dupes at 904-232-1689.

Sincerely,

George M. Strain
Acting Chief, Planning Division

Enclosure

bcc:
CESAJ-DP-I

ENDANGERED SPECIES ACT
BIOLOGICAL ASSESSMENT
DADE COUNTY BEACH EROSION CONTROL AND HURRICANE PROTECTION PROJECT

SUSTAINABILITY OF RENOURISHMENT
MIAMI BEACH TEST FILL

1. PROJECT LOCATION: The study area is located along the Atlantic Ocean shoreline of Dade County on the lower southeast coast of Florida (Figure 1).

2. DESCRIPTION OF THE PROPOSED ACTION: Offshore borrow sources of beach quality sediment along the Dade County shoreline have been almost completely depleted, and alternative sources of material will be required in the near future to provide continued renourishment of the Dade County Beach Erosion Control and Hurricane Protection Project. Although carbonate sediment from offshore borrow sites has traditionally been used for project renourishment, the use of oolitic aragonite from non-domestic sources may provide an effective alternative for future renourishment requirements.

Virtually unlimited supplies of beach-quality material are available in the Bahamas Bank, located 65 miles east of the project site, and in the Turks and Caicos Islands, located approximately 500 miles to the southeast. The proposed test fill will be constructed using aragonite from one of these sources. The purpose of the test fill, in addition to providing nourishment to an eroded portion of the Federal project along northern Miami Beach, is to evaluate the physical and environmental performance of aragonite on the beach erosion control project.

The proposed test fill site is located along northern Miami Beach, and will extend along approximately one mile of shoreline which has been an erosional area since the project was constructed. The total volume of the test fill is expected to be approximately 500,000 cubic yards. The currently proposed location for the test fill is between 65th and 80th Streets in Miami Beach (DNR monuments DNR-39 to DNR-44), as shown in figure 2. The exact source of aragonite (or other carbonate sand) for the test beach would be determined during the procurement process. Sand sources proposed by contractors would have to meet a set of generic sand specifications and pass a screening process for sand characteristics and possible introduction of undesirable benthic organisms

3. REFERENCES: Several Biological Assessments and Biological Opinions have been prepared for previous shore protection projects within Dade County. These documents are listed in the reference section and are incorporated into this Biological Assessment by reference.

4. LISTED SPECIES WHICH MAY BE AFFECTED: Listed species which may occur in the vicinity of the study area and are under the jurisdiction of the U.S. Fish and Wildlife Service

are: loggerhead sea turtle (*Caretta caretta*, T), green sea turtle (*Chelonia mydas*, E), leatherback sea turtle (*Dermochelys coriacea*, E), hawksbill sea turtle (*Eretmochelys imbricata*, E), and the West Indian manatee (*Trichecus manatus*, E).

5. DISCUSSION OF POTENTIAL IMPACTS TO LISTED SPECIES:

The potential impacts to sea turtles and manatees that can be associated with beach nourishment projects have been discussed at length in the Biological Assessments and Biological Opinions referenced above and are incorporated here by reference. The following addresses potential effects to sea turtles if calcium carbonate sand from the Bahamas is used.

Few beaches in Florida have been nourished with sand imported from the Bahamas. Fisher Island, in Miami, Florida was renourished with commercially mined aragonite in 1991. The impact of nourishment in relation to sea turtle nesting on the beach at Fisher Island has been part of a three-year study by the Sea Turtle Laboratory at the Rosenstiel School of Marine and Atmospheric Science. There were a total of six natural[1] nests laid in 1991 on Fisher Island beach and a total of 15 in 1992 (Lutz et al. 1991, 1992).

It has been noted that turtles nest in various types of sands, both calcareous types (including shell and aragonite) and silica types (quartz sands). Quartz sand has a hardness of 7.0 on the Mohs scale, while aragonite ranges near 4.0 (Campbell et al. 1984). The aragonite sand is physically spherical to ellipsoidal in shape and is denser than native sand. The mean grain size ranges from 0.25 mm to 0.29 mm and is moderately sorted (U. S. Army Corps of Engineers 1995). The increased density and shape of the aragonite tend to make it behave as a larger grain sized material. Aragonite sand has a lower silt/clay content than natural offshore borrow sources. Aragonite would tend to be more stable than native Florida sands because of its spherical shape and higher specific gravity. Aragonite has essentially no material finer than 200 microns and is well sorted with peaks at 300 to 500 microns (Wanless 1983). Because of the small amount of fines, the use of aragonite in beach nourishment is expected to reduce turbidity-related impacts, both in the nearshore zone and near the offshore reefs (Coastal Planning & Engineering 1994).

In addition to the monitoring of the natural nests in the Fisher Island Study, nests from Juno Beach, Jupiter, Florida, were relocated and monitored at two hatcheries, one filled with aragonite and the other filled with Florida sand. The hatcheries were located approximately 75 feet from the shore on the east side of the renourished Fisher Island beach (Lutz et al. 1991). First year results revealed that aragonite sand on average is 2°C cooler than Florida silicate, significantly extending incubation times by 5 days and quite possibly altering natural sex ratios (Lutz et al. 1991). This temperature difference was also noted in the 1992 study. The Fisher Island Study showed no significant differences in hatchling size or hatching success of hatchlings between aragonite and Florida sand nests. The 1992 study revealed similar results as the 1991 study.

---

[1] "Natural" nests refers to nests that were left on the beach undisturbed, i.e. unrelocated nests.

While sea turtles do successfully nest in aragonite sands, it is possible that the rate of success (portion of nests to total crawls) would be different from that in native sand. Because of the cooler temperatures found in aragonite, this may affect incubation time and could alter hatchling sex ratios. A 2°C change may lower the temperature below the pivotal point, therefore potentially causing more males than originally expected (Mrosovsky and Yntema 1980).

To try and answer some of the questions concerning the effects of alternative sand sources on sea turtles a hatchery study was initiated in 1995 at Miami Beach, Florida (Nelson et. al. 1996). The sand types used included: native Miami Beach Sand, Bahamian aragonite sand, renourished sand (from an offshore borrow source) and a 1 to 1 mixture of renourished sand and Bahamian aragonite. The following parameters where studied: nest success measurements (nest incubation period, hatching success, and hatchling size); temperature measurements (sand and nest), and nest sex ratios. The results of this study found no differences in hatchling size and sex ratios for the four sand types tested. Incubation periods were longer and nest temperatures were cooler for nests incubated in aragonite sand. Incubation time was significantly longer in the aragonite sand than the other sands tested. Hatching success was significantly higher in the renourished and the mixed sands than the native sands. The hatching success of the nests in aragonite was not significantly different that the other sand types. A copy of the report, *Evaluation of Alternative Beach Nourishment Sands as Loggerhead Sea Turtle Nesting Substrates*, prepared for the 1995 study is attached to this Biological Assessment as supplemental information (attachment 1). Additional hatchery studies were conducted during the 1996 and 1997 nesting seasons. The results from these studies will be provided when available.

6. EFFORTS TO ELIMINATE POTENTIAL IMPACTS:

Efforts to eliminate of significantly reduce the potential impacts associated with beach nourishment activities will be addressed by implementing the following actions:

a. Construction activities will be kept under surveillance, management, and control to minimize interference with, disturbance of, or damage to wildlife resources. Prior to the commencement of construction the contractor will be required to instruct all personnel associated with the project that endangered species could be in the area, the need to avoid collisions with them, and the civil and criminal penalties for harming, harassing or killing them.

b. Construction access and staging areas along the beach will be identified in the contract plans and specifications. Contractor vehicles, construction equipment and storage facilities will be required to stay within the identified construction area.

c. Precautions will be taken during construction activities to insure the safety of the manatee. To insure the contractor and his personnel are aware of the potential presence of the manatee in the project area, their endangered status, and the need for precautionary measures, the contract specifications will include the standard protection clauses concerning manatees. All small vessels associated with the project will be required to operate at "no wake" speeds at all times

while in shallow water, or channels, where the draft of the vessel provides less than three feet clearance from the bottom. Boats used to transport personnel shall be shallow draft vessels, preferably of the light-displacement category, where navigational safety permits. Vessels transporting personnel between the landing and any workboat shall follow routes of deep water to the extent possible. The contractor shall be held responsible for any manatee harmed, harassed, or killed as a result of the construction of the project. If a manatee is sighted within a hundred yards of the dredging area, appropriate safeguards will be taken, including suspension of dredging, if necessary, to avoid injury to manatees.

d. To eliminate or significantly reduce potential impacts to sea turtles, the Terms and Conditions outlined in the USFWS Biological Opinion (FWS Log No.: 4-1-96-F-268) dated October 24, 1996 for the Coast of Florida Erosion and Storm Effects Study, Region III, as amended by the letter of January 29, 1998 will be followed.

e. Any incident involving the death or injury of any listed threatened or endangered species described in this Biological Assessment shall be immediately reported to the U.S. Army Corps of Engineers (Jacksonville) and the U.S. Fish and Wildlife Service (Vero Beach).

f. Pre- and post-construction monitoring of sea turtle nests on the test beach and two reference beaches will be conducted. A copy of the scope of work for the pre-construction monitoring is attached (attachment 2).

7. EFFECT DETERMINATION: Because of the nature of the work and the precautions to be taken as described in the previous section, the U.S. Army Corps of Engineers has determined that the proposed action will have no effect on the manatee. Because of the potential effects associated with nesting sea turtles, sea turtle nests, and hatchlings, we have determined that the proposed action may affect sea turtles.

REFERENCES

Previous Biological Assessments prepared by the U. S. Army Corps of Engineers.

Dade County Shore Protection Project, Sunny Isles and Miami Beach Segments - April 23, 1993.

Dade County Shore Protection Project, Surfside and South Miami Beach Segments - December 21, 1993.

Dade County Shore Protection Project, Modifications at Sunny – June 3, 1994.

Coast of Florida Erosion and Storm Effects Study, Region III – October 5, 1995.

Dade County Shore Protection Project, Bal Harbour Segment – April 8, 1997.

Previous Biological Opinions Prepared by the U.S. Fish and Wildlife Service.

Dade County Shore Protection Project, Sunny Isles and Miami Beach Segments – August 11, 1993, amended July 28, 1994.

Dade County Shore Protection Project, Surfside and South Miami Beach Segments – April 15, 1994.

Coast of Florida Erosion and Storm Effects Study, Region III – October 24, 1996

Other References.

Campbell, Thomas J., P.E., Robert G. Dean, Sc.D., Norman H. Beumel, and R. Harvey Sasso. 1984. Engineering and economic evaluation of aragonite sand vs offshore borrow material. 24 pp.

Coastal Planning & Engineering, Inc. 1994. Feasibility Study for the use of aragonite sand for beach renourishment in Broward County. 57 pp.

Lutz, Peter L., Alexis A. Schulman, and Sarah L. Shaw. 1991. Fisher Island sea turtle project annual report 1991. 51 pp.

Lutz, Peter L., Alexis A. Schulman, and Sarah L. Shaw. 1992. Fisher Island sea turtle project annual report 1992. 49 pp.

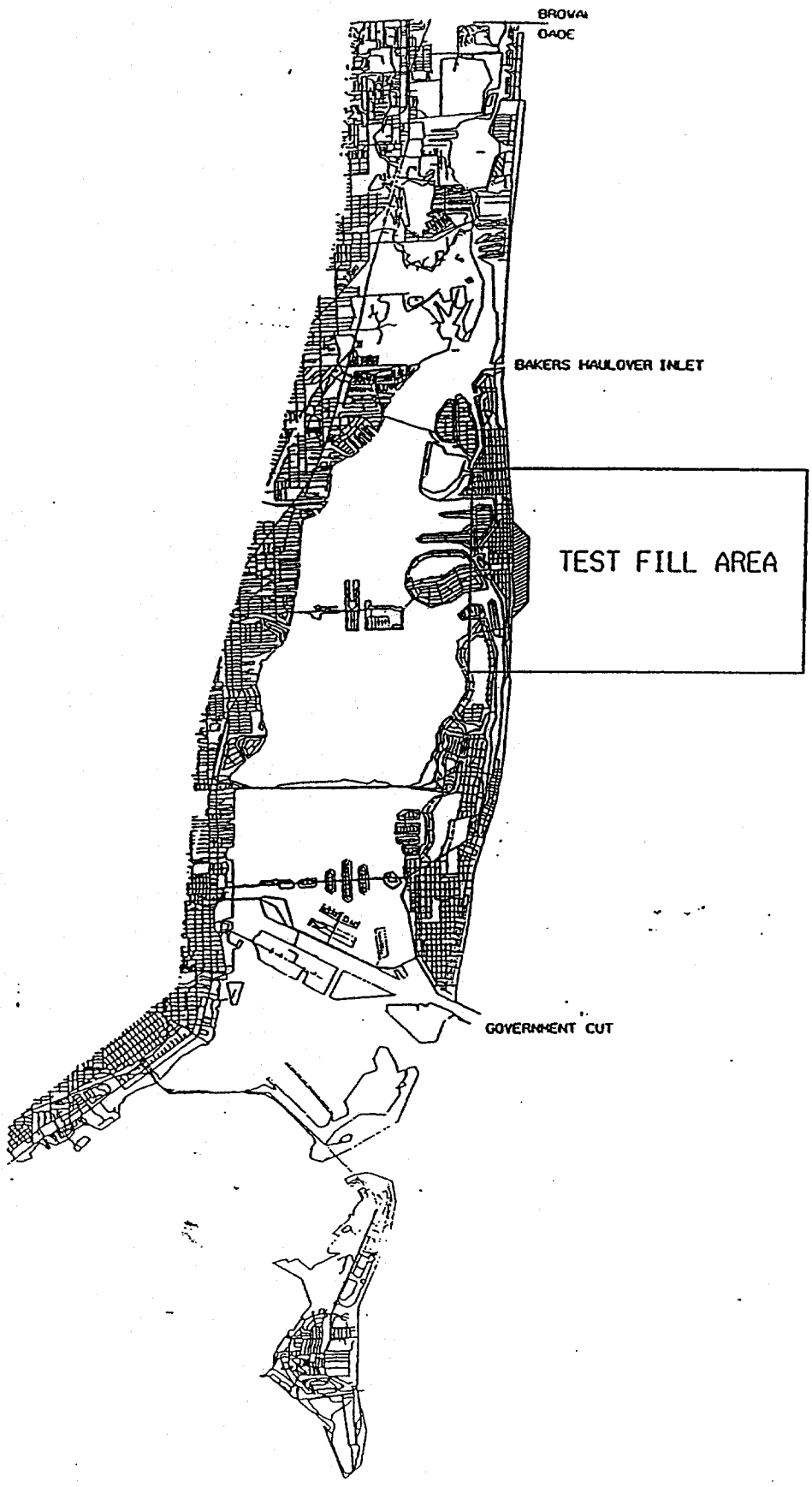
Mrosovsky, N. and C. L. Yntema. 1980. Temperature dependence of sexual differentiation in

sea turtles: implications for conservation practices. Biological Conservation 18:271-280.

Nelson, David A., Stephen M. Blair, Rebecca Cheeks, Peter L. Lutz, Sarah L. Milton, and Timothy S. Gross. 1996. Evaluation of Alternative Beach Nourishment Sands as Loggerhead Sea Turtle Nesting Substrates. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

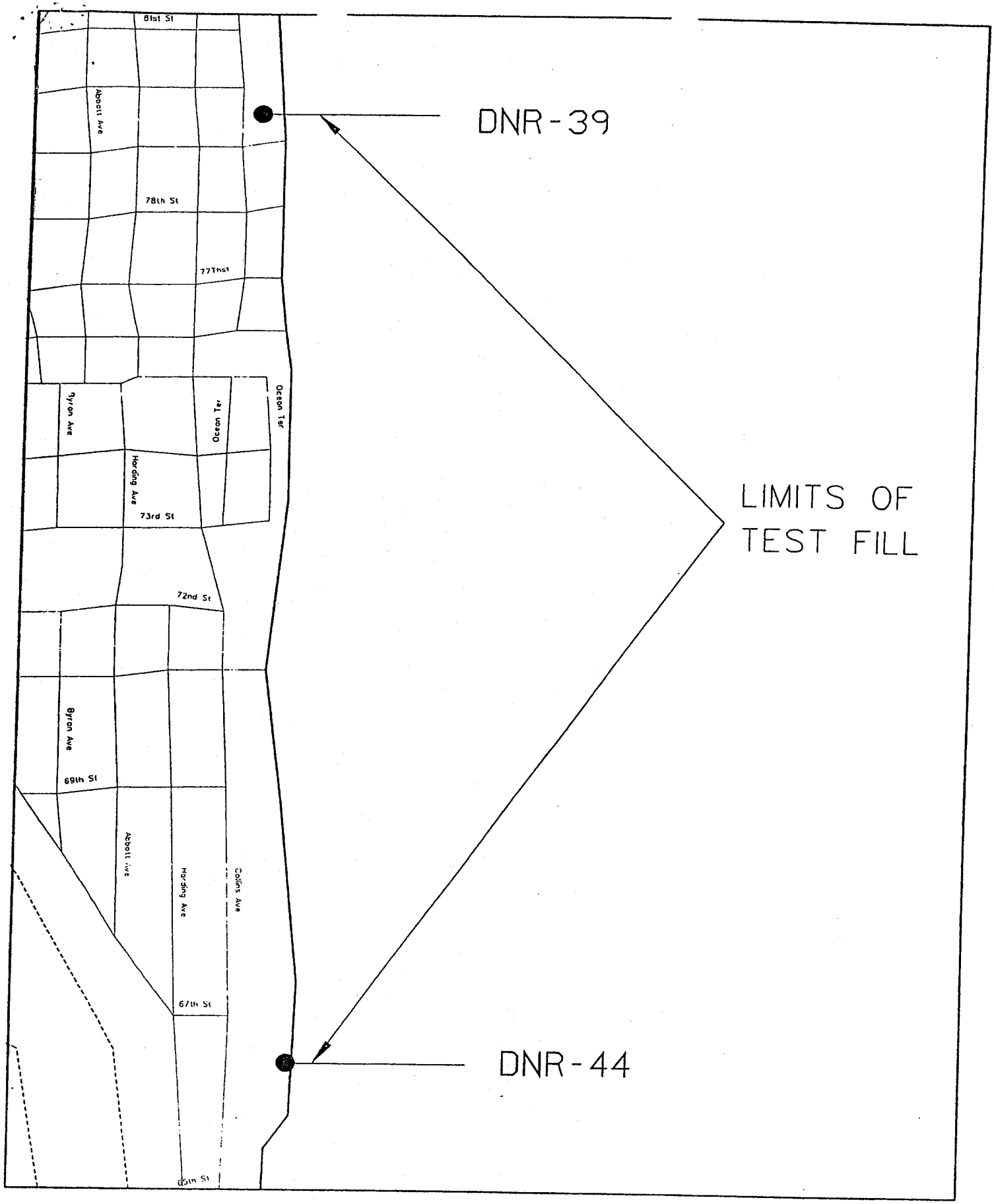
U.S. Army Corps of Engineers. 1995. Environmental Assessment for the second periodic nourishment of Sunny Isles and Miami Beach Segments, Beach Erosion Control and Hurricane Protection Project, Dade County, Florida. 74 pp.

Wanless, Harold R. October 18, 1993. Comparative grain size analyses of an oolitic sand and sands from potential borrow areas in southeast Florida. Arthur V. Strock & Associates, Inc. 19 pp.



DADE COUNTY TEST FILL SITE

FIGURE 1



SUSTAINABILITY OF RENOURISHMENT
MIAMI BEACH TEST FILL

Figure 2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
100 ALABAMA STREET, S.W.
ATLANTA, GEORGIA 30303-3104

JUN 17 1997

District Engineer, Jacksonville
P.O. Box 4970
Jacksonville, FL 32232

Attn: Mr. Hanley K. Smith (CESAJ-PD-PF)
Acting Chief, Planning Division

Subject: Use of Foreign Non-Native Material for Beach Erosion Control and Hurricane Protection, Dade County, Florida

Dear Sir:

In a recent correspondence EPA, Region 4 indicated that it had no significant objections to using "foreign aragonite" material as part of a commercial scale study for the Surfside segment (R-31 to R-36) of the Surfside/South Miami Beach project. However, as a result of subsequent coordination with your staff, we determined that the test reach is actually one mile south of Surfside. Nonetheless, since intensified shoreline development in south Florida makes it likely that nourishment projects will be considered for the majority of the coastline, acquiring borrow material and moving it onshore become operative issues for interagency discussion. Hence, our original concurrence remains valid.

On the basis of the limited information in the May 6, 1997, letter together with discussions with Jacksonville technical staff it appears that acquisition of the subject nourishment material could be accomplished from dynamic shoal areas at acceptable environmental costs. However, in this country direct transport of the material hydraulically from the barge onto the subject beach will be the most problematic aspect of the fill operation, viz., the sediment plume impacting live bottoms. On the other hand, if the material is intermodally handled, viz., barge to truck to beach, there is another set of issues which will have to be evaluated, e.g., air quality considerations along the haul route(s), traffic congestion at the unloading sites, accelerated roadway wear from heavy trucks, associated health/safety issues, etc..

Because of the long-term environmental consequences of beach nourishment, we look forward with interest regarding the constituents of the final scope of work for this proposal. Thank you for the opportunity to comment. If we can be of further assistance in the interim, Dr. Gerald Miller (404-562-9626) will serve as initial point of contact.

Sincerely yours,

Heinz J. Mueller, Chief
Office of Environmental Assessment

Department of Environmental Protection

Lawton Chiles
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Virginia B. Wetherell
Secretary

June 13, 1997

Mr. Hanley K. Smith
Acting Chief, Planning Division
Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32231-0019

Dear Mr. Smith:

I have reviewed the test beach proposal contained in your letter of May 3 , 1997, to David Arnold. The environmental testing program for marine turtles was fairly detailed; additional clarification of components of the experimental design are listed below.

Experimental analyses should be designed to determine if placement of foreign aragonite on marine turtle nesting beaches alters marine turtle nesting behavior and success. Marine turtle nesting patterns and success vary both temporally among years and spatially along the shoreline. To detect treatment effects, in this case placement of foreign aragonite, on the response variable, marine turtle nesting patterns and success, a test beach site and a control site must be identified. Background and baseline information must be collected on both sites.

The test beach and control sites should be as similar as possible with respect to background conditions, including slope, temperature, color, moisture, gas exchange, lighting, overland drainage, upland development, beach/dune profile, nearshore environment and biotic communities, and offshore bathymetry. Marine turtle nesting patterns, including nest density, nest to false crawl ratio, hatch success, and emergence success, should also not differ between the test and control beach prior to the placement of the foreign aragonite. Differences between the two sites should be assessed by comparing one or more years of baseline measurements from the test and control beach prior to the nourishment activity.

Standard experimental methodology requires that the test and control beach be treated identically with the exception of the treatment effect. Thus, the control beach should be nourished with native beach sand at the same interval and using the same methodology as the test beach. Otherwise, we will not be able to separate differences in marine turtle nesting due to renourishment in general from differences due to use of foreign aragonite as fill material, if any exist.

Postconstruction measurements of substrate suitability, including scarps, compaction, slope, stability, temperature, color, moisture and gas exchange, should be collected on both the test and control beaches after nourishment. Marine turtle nest site selection, including the number of false crawls, the type of false crawl, the number of nests, nest morphology, the false crawl to nest ratio, and nest success parameters, including incubation period, nest success, sex ratios, and emergence success, should be collected on both test and control beaches after nourishment. The number, duration, and location of scarps and associated false crawls, should also be measured.

Given the lower density of marine turtle nests in Dade County, there is potential that there will be too few nests on the test or control beach for statistical comparisons. A similar study has been proposed for Broward County. Addition of a second control and test plot in Broward County would increase the power of the proposed experiments to assess effects of a foreign aragonite source on marine turtle nesting. This additional set of experiments should be implemented simultaneously, if possible.

Please contact me at (904)922-4330 if you have questions about my comments. I look forward to working with you on an optimal design for the foreign aragonite test beach study.

Sincerely,

Timothy J for

Robbin N. Trindell, Ph.D.
Biological Administrator
Bureau of Protected Species Management

BROWARD COUNTY
FLORIDA

Department of Natural Resource Protection
Biological Resources Division
218 S.W. 1st Avenue
Fort Lauderdale, FL 33301
(954) 519-1230 • FAX (954) 519-1412

June 2, 1997

Dr. Hanley K. Smith, Acting Chief, Planning Division
Corps of Engineers, Jacksonville District
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Dr. Smith:

Thank you for the opportunity to comment on the diagram for environmental testing of a nourishment project using experimental non-domestic beach fill. We have reviewed the diagram and conclude that the major elements necessary for proper evaluation of the material are present.

There remains a question, however, about whether sufficient sea turtle nesting occurs at the proposed test beach to adequately evaluate this parameter. As you may remember, two years ago a meeting was held at John U. Lloyd Beach in Broward County among Interior Secretary Bruce Babbitt, Congressman E. Clay Shaw, Jr., Jacksonville District Engineer Col. Terry Rice, and others, at which a decision was made and announced that a Broward component of the test project would be needed to test for sea turtle nesting. Discussions at the Jacksonville meetings in April also addressed this question.

We believe that a test site at John U. Lloyd Beach State Recreation Area would provide adequate sea turtle nesting activity data for input into the evaluation program. Accordingly, we request that the scope of work developed for the program be formulated such that Broward County can incorporate the appropriate parameters and protocols into our ongoing sea turtle conservation program. This is particularly important with respect to the gathering of pre-project baseline information.

Again, thank you for the opportunity to comment on this important program. Please continue to include this office when distributing materials for review and comment. Should you have questions or comments on the foregoing, please feel free to contact me at the letterhead address, or call directly at (954) 519-1265.

Sincerely,

Stephen Higgins
Beach Erosion Administrator

c: Eric Myers, Director Biological Resources Division
Pamela Landi, Legislative Aide (Coastal), Office of Congressman E. Clay Shaw, Jr.

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

Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, Florida 33702

May 27, 1997

Colonel Terry Rice
District Engineer, Jacksonville District
Department of the Army, Corps of Engineers
Planning Division, Environmental Branch
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear Colonel Rice:

The National Marine Fisheries Service (NMFS) has reviewed your request for comments dated May 6, 1997, regarding the environmental testing for a test beach composed of aragonite sand. The test beach would be about one mile in length and consist of approximately 500,000 cubic yards of foreign aragonite sand. The project is located in waters of the Atlantic Ocean, Dade County, Florida.

The proposed environmental testing consists of three major components: sea turtles, benthic organisms, and reef, hard grounds and seagrasses. Sea turtles using beaches for nesting are under the jurisdiction of the U. S. Fish and Wildlife Service. Any in-water impacts to sea turtles under the jurisdiction of the NMFS should be addressed by our Protected Species Management Branch.

The NMFS supports monitoring the impacts to benthic infaunal communities for this and other beach nourishment projects to determine the rate of recovery. This information will be important in assessing future projects. A potential source of information for this monitoring effort is a document prepared for the Corps of Engineers, Wilmington District entitled: *A Review and Synthesis of Data on Surf Zone Fishes and Invertebrates in the South Atlantic Bight and the Potential Impacts from Beach Nourishment.*

The environmental testing section for reef, hard grounds and seagrasses should develop allowable levels of turbidity and sedimentation during nourishment activities that are protective of the nearshore environment. These levels should be monitored by measurements other than the State of Florida Water Quality Standards (WQS). The WQS for turbidity (29 NTUs), commonly applied to beach nourishment projects, does not appear to be protective of sensitive habitats such as coral reefs and nearshore hard grounds. Turbidity and sedimentation measurements should be based on the light requirements or tolerances of seagrasses or the ability of corals to cope with sedimentation, respectively. These values may be generated from the literature, but should be reviewed by seagrass and coral experts.

We look forward to reviewing the detailed scope of work for the environmental testing of the suitability of aragonite sands. If you have questions concerning these comments, please contact Mr. John Iliff of our Panama City Branch Office in Miami at 305/595-8352.

Sincerely,

W. Mark Thompson for

Andreas Mager, Jr.
Assistant Regional Director
Habitat Conservation Division

cc:
F/SEO2
F/SEO2-Miami

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecosystem Office
P.O. Box 2676
Vero Beach, Florida 32961-2676
May 16, 1997

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

Attn: Planning Division

Dear Colonel Rice:

Thank you for your letter, dated May 6, 1997, regarding the proposed aragonite test beach in Dade County, Florida. The U.S. Fish and Wildlife Service (FWS) has reviewed the letter and provides the following comments on the proposed study.

Your letter and the attached study diagram do not indicate whether or not this is a scientifically controlled study. Unless tested as such, the FWS would view the results of this study inconclusive and would not endorse the wide spread use of aragonite on south Florida's beaches. The study would require a control site as well as a sample size large enough to yield statistically valid results to support its conclusions. Furthermore, we question whether or not enough sea turtle nests would be laid along one mile of Dade County beach to provide the U.S. Army Corps of Engineers with a sufficient sample size. Finally, the results of the study should be subjected to peer review by experts who have published their results of related studies in each study component.

Thank you for this opportunity to provide these comments. If you require further clarification or assistance, please do not hesitate to contact Charles Sultzman of my staff at (561) 562-3909.

Sincerely yours,

Thomas E. Grahl, Acting Field Supervisor
South Florida Ecosystem Office

cc:
FDEP (OPSM), Tallahassee, FL
FWS, Jacksonville, FL (Attn: Sandy MacPherson)