United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

February 28, 2005

Colonel Robert M. Carpenter
District Engineer
U.S. Army Corps of Engineers
701 San Marco Boulevard, Room 372
Jacksonville, Florida 32207-8175

Service Log No.: 4-1-05-F-10922
Date: January 24, 2005
Project: Indian River County "FEMA Plus," and Sectors 3 and 5
Sponsor: Indian River County Board of County Commissioners
County: Indian River County

Dear Colonel Carpenter:

The Fish and Wildlife Service (Service) has reviewed the U.S. Army Corps of Engineers' (Corps) request for emergency formal consultation regarding the construction of emergency berms and beach renourishment projects referenced above. In an email dated January 24, 2005, the Corps determined that the project "may affect" the threatened loggerhead sea turtle (*Caretta caretta*), the endangered green sea turtle (*Chelonia mydas*), the endangered leatherback sea turtle (*Dermochelys coriacea*), the endangered hawksbill sea turtle (*Eretmochelys imbricata*), and the endangered Kemp's ridley sea turtle (*Lepidochelys kempii*). Based on the information provided, the Service concurs with the Corps' determination. This letter is provided in accordance with section 7 of the Endangered Species Act of 1973, as amended (ESA) (16 U.S.C. 1531 *et seq.*).

PROJECT DESCRIPTION

As a result of Hurricanes Frances and Jeanne in September 2004, there are three concurrent actions taking place to restore eroding shorelines in Indian River County: (1) Federal Emergency Management Agency (FEMA) Category B emergency berms (to protect from a 5-year storm event); (2) "FEMA Plus," which involves filling in the gaps between FEMA Category B emergency berms; and, (3) sand placement in Sectors 3 and 5. The first of these actions is being handled directly with FEMA under separate consultation. This letter addresses actions (2) and (3).

For FEMA Plus, approximately 85,204 cubic yards (cy) of sand will be placed at various locations along the Atlantic Ocean shoreline in Indian River County between Florida Department of Environmental Protection (DEP) monuments R-21 and R-107 to fill in the gaps between

FEMA Category B emergency berms. This will result in sand being placed on a total of approximately 0.8 mile of shoreline.

The Corps also proposes to restore the beach profile to pre-storm elevations along approximately 5 miles of Atlantic Ocean shoreline within Sector 3 and Sector 5. Sector 3 extends along 3.23 miles of shoreline between Orchid and Indian River Shores, between DEP monuments R-36 and R-53. Sector 5 includes 2.67 miles of shoreline within the city limits of Vero Beach and town limits of Indian River Shores, between R-71 and R-86. The placement of sand for dune restoration will be increased from 30 feet waterward of the existing escarpment line to a point just above the existing mean high water line. It is anticipated that a minimum of 200,000 cy of beach compatible sand will be needed to restore the beach to pre-storm profiles.

All sand will come from upland sand mines located in Winter Beach, Sebastian, and Fellsmere, Indian River County, Florida. Work will cease prior to May 1, 2005, and will not begin again until after the end of sea turtle nesting season. In the event the proposed activities are not completed, construction will resume after November 1, 2005, and will be completed by March 1, 2006. The material will be transported to the beach by dump trucks. Bulldozers and front-end loaders will be used to manipulate the material.

In a meeting with the applicant on January 11, 2005, the Service reviewed plans for the proposed FEMA Category B emergency berms, "FEMA Plus" emergency berms, and beach renourishment within Sectors 3 and 5. In addition, we examined sediment samples from the proposed upland sand sources. As a result of this meeting, the applicant agreed to:

1. Utilize upland sand sources that meet Florida State standards of beach compatibility. Sand must be compatible both in color and grain size, and free of debris;

2. Limit the use of heavy equipment on the beach to the maximum extent practicable;

3. Remove all storm debris along the beaches of Indian River County prior to any fill activity so as not to cover storm or construction debris with sand associated with restoration of the beach; and

4. Avoid all impacts to exposed rock outcropping, hardbottom, and reef habitat located at or below the post-storm mean high water line of the Atlantic Ocean.

In addition, the Corps has agreed to incorporate into this project the following reasonable and prudent measures and terms and conditions, since the Service believes these are necessary and appropriate to avoid and minimize take of loggerhead sea turtles, green sea turtles, leatherback sea turtles, hawksbill sea turtles, and Kemp's ridley sea turtles.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to avoid and minimize take of loggerhead sea turtles, green sea turtles, leatherback sea turtles, and hawksbill sea turtles:

1. Beach quality sand suitable for sea turtle nesting, successful incubation, and hatchling emergence must be used on the project site;

2. Beach nourishment activities must not occur from May 1 through October 31, the period of peak sea turtle egg laying and egg hatching, to reduce the possibility of sea turtle nest burial, crushing of eggs, or nest excavation;

3. If the beach nourishment project will be conducted during the period from March 1 through April 30, surveys for early nesting loggerhead and green sea turtles must be conducted. If nests are constructed in the area of beach nourishment, the eggs must be relocated;

4. If the beach nourishment project will be conducted at night during the period from March 1 through April 30, nighttime surveys for nesting leatherback sea turtles must be conducted. If the nests are found in the area of the sand placement, the eggs must be relocated;

5. If the beach nourishment project will be conducted during the daylight hours from March 1 through April 30, nighttime surveys for nesting leatherback sea turtles are not required provided all leatherback crawls detected by the daily surveys are considered to have resulted in a nest, which must be marked and avoided;

6. If the beach nourishment project will be conducted during the period from November 1 through November 30, surveys for late nesting sea turtles must be conducted. If nests are constructed in the area of beach nourishment, the eggs must be relocated;

7. Pre- and post-construction beach lighting surveys for compliance with local or county ordinances must be conducted;

8. Immediately after completion of the beach nourishment project and prior to the next three nesting seasons, beach compaction must be monitored and tilling must be conducted as required by March 1 to reduce the likelihood of impacting sea turtle nesting and hatching activities. The March 1 deadline is required to reduce impacts to leatherbacks which nest in greater frequency along the South Atlantic coast of Florida than elsewhere in the continental United States;

9. Immediately after completion of the beach nourishment project and prior to the next three nesting seasons (March 1 through November 30), monitoring must be conducted to

determine if escarpments are present and escarpments must be leveled as required to reduce the likelihood of impacting sea turtle nesting and hatching activities;

10. The applicant must ensure that contractors doing the beach nourishment work fully understand the sea turtle protection measures detailed in this incidental take statement;

11. During the early (March 1 through April 30) and late (November 1 through November 30) portions of the nesting season, construction equipment and materials must be stored in a manner that will minimize impacts to sea turtles to the maximum extent practicable;

12. During the early (March 1 through April 30) and late (November 1 through November 30) portions of the nesting season, lighting associated with the project must be minimized to reduce the possibility of disrupting and misdirecting nesting and/or hatchling sea turtles; and

13. During the sea turtle nesting season (March 1 through November 30), lighting associated with the project must be minimized to reduce the possibility of disrupting and misdirecting nesting and/or hatchling sea turtles.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the ESA, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. All fill material placed must be sand that is similar to a native beach in the vicinity of the site that has not been affected by prior renourishment activities. The fill material must be similar in both coloration and grain size distribution to the native beach. All such fill material must be free of construction debris, rocks, or other foreign matter and must not contain, on average, greater than 10 percent fines (i.e., silt and clay) (passing the #200 sieve) and must not contain, on average, greater than 5 percent coarse gravel or cobbles, exclusive of shell material (retained by the #4 sieve).

2. Beach nourishment must be started after October 31 and be completed before May 1. During the May 1 through October 31 period, no construction equipment or pipes will be stored on the beach.

3. If the beach nourishment project will be conducted during the period from March 1 through April 30, daily early morning surveys for loggerhead and green sea turtle nests must be conducted from March 1 through April 30 or until completion of the project (whichever is earliest), and eggs must be relocated per the following requirements:

3a. Nesting surveys and egg relocations will only be conducted by personnel with prior experience and training in nesting survey and egg relocation procedures. Surveyors must have a valid Florida Fish and Wildlife Conservation Commission (FWC) permit. Nesting surveys must be conducted daily between sunrise and 9 a.m. Surveys must be performed in such a manner so as to ensure that construction activity does not occur in any location prior to completion of the necessary sea turtle protection measures; and

3b. Only those nests that may be affected by construction activities will be relocated. Nests requiring relocation must be moved no later than 9 a.m. the morning following deposition to a nearby self-release beach site in a secure setting where artificial lighting will not interfere with hatchling orientation. Nest relocations in association with construction activities must cease when construction activities no longer threaten nests. Nests deposited within areas where construction activities have ceased or will not occur for 65 days must be marked and left in place unless other factors threaten the success of the nest. Any nests left in the active construction zone must be clearly marked, and all mechanical equipment must avoid nests by at least 10 feet.

4. If the beach nourishment project will be conducted during the period from March 1 through April 30, nighttime surveys for leatherback sea turtle nests must be conducted from March 1 through April 30 or until completion of the project (whichever is earliest), and eggs must be relocated per the following requirements:

4a. Nesting surveys and egg relocations will only be conducted by personnel with prior experience and training in nesting survey and egg relocation procedures. Surveyors must have a valid FWC permit. Nesting surveys must be conducted nightly from 9:00 p.m. until 6:00 a.m. The project area must be surveyed at 1-hour intervals (since leatherbacks require at least 1½ hours to complete nesting, this will ensure that all nesting leatherbacks are encountered); and

4b. Only those nests that may be affected by construction activities will be relocated. Nests requiring relocation must be moved no later than 9 a.m. the morning following deposition to a nearby self-release beach site in a secure setting where artificial lighting will not interfere with hatchling orientation. Nest relocations in association with construction activities must cease when construction activities no longer threaten nests.

5. If the beach nourishment project will be conducted during daylight hours from March 1 through April 30, nighttime surveys for leatherback sea turtle nests are not required. All leatherback sea turtle crawls must be assumed to have resulted in nests if the nesting process has proceeded to or beyond the stage of the primary body pit. The entire area of disturbed sand plus a 10-foot buffer zone must be conspicuously marked. Neither the operation of equipment, nor the placement of fill, is permitted in the marked nest

location. Any nests left in the active construction area must be clearly marked, and all mechanical equipment must avoid nests by at least 10 feet.

6. If the beach nourishment project will be conducted during the period from November 1 through November 30, daily early morning surveys for loggerhead and green sea turtle nests must be conducted 65 days prior to project initiation and continue through September 30, and eggs must be relocated per the preceding requirements.

7. Non-compliance with local, city, and county beach lighting ordnances on private, commercial, and public property must be monitored and evaluated prior to and immediately after construction. If possible, remediation or enforcement actions should be completed prior to or during construction, but no later than March 1, 2006.

8. Immediately after completion of the beach nourishment project and prior to March 1 for 3 subsequent years, sand compaction must be monitored in the area of restoration in accordance with a protocol agreed to by the Service, the State regulatory agency, and the applicant. At a minimum, the protocol provided under 8a and 8b below must be followed. If required, the area must be tilled to a depth of 36 inches, and each pass of the tilling equipment must be overlapped to allow more thorough and even tilling. All tilling activity must be completed prior to March 1. An annual summary of compaction surveys and the actions taken must be submitted to the Service. (NOTE: The requirement for compaction monitoring can be eliminated if the decision is made to till regardless of post-construction compaction levels. Also, out-year compaction monitoring and remediation are not required if placed material no longer remains on the beach.)

   8a. Compaction sampling stations must be located at 500-foot intervals along the project area. One station must be at the seaward edge of the dune or bulkhead line (when material is placed in this area), and one station must be midway between the dune line and the high water line (normal wrack line).

   At each station, the cone penetrometer will be pushed to a depth of 6, 12, and 18 inches three times (three replicates). Material may be removed from the hole if necessary to ensure accurate readings of successive levels of sediment. The penetrometer may need to be reset between pushes, especially if sediment layering exists. Layers of highly compact material may lay over less compact layers. Replicates will be located as close to each other as possible, without interacting with the previous hole and/or disturbed sediments. The three replicate compaction values for each depth will be averaged to produce final values for each depth at each station. Reports will include all 18 values for each transect line, and the final six averaged compaction values.

   8b. If the average value for any depth exceeds 500 pounds per square inch (psi) for any two or more adjacent stations, then that area must be tilled prior to March 1. If values exceeding 500 psi are distributed throughout the project area but in no case do those

values exist at two adjacent stations at the same depth, then consultation with the Service will be reinitiated to determine if tilling is required. If a few values exceeding 500 psi are present randomly within the project area, tilling will not be required.

9. Visual surveys for escarpments along the project area must be made immediately after completion of the beach nourishment project and prior to March 1 for 3 subsequent years. Escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet must be leveled to the natural beach contour by March 1. If the project is completed during the early part of the sea turtle nesting and hatching season (March 1 through April 30), escarpments may be required to be leveled immediately, while protecting nests that have been relocated or left in place. The Service must be contacted immediately if subsequent reformation of escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet occurs during the nesting and hatching season to determine the appropriate action to be taken. If it is determined that escarpment leveling is required during the nesting or hatching season, the Service will provide a brief written authorization that describes methods to be used to reduce the likelihood of impacting existing nests. An annual summary of escarpment surveys and actions taken must be submitted to the Service. (NOTE: Out-year escarpment monitoring and remediation are not required if placed material no longer remains on the dry beach.)

10. The applicant must arrange a meeting between representatives of the contractor, the Service, the FWC, and the permitted person responsible for egg relocation at least 30 days prior to the commencement of work on this project. At least 10 days advance notice must be provided prior to conducting this meeting. This will provide an opportunity for explanation and/or clarification of the sea turtle protection measures.

11. From March 1 through April 30 and November 1 through November 30, staging areas for construction equipment must be located off the beach to the maximum extent practicable. Nighttime storage of construction equipment not in use must be off the beach to minimize disturbance to sea turtle nesting and hatching activities. In addition, all construction pipes that are placed on the beach must be located as far landward as possible without compromising the integrity of the existing or reconstructed dune system. Temporary storage of pipes must be off the beach to the maximum extent possible. Temporary storage of pipes on the beach must be in such a manner so as to impact the least amount of nesting habitat and must likewise not compromise the integrity of the dune systems (placement of pipes perpendicular to the shoreline is recommended as the method of storage).

12. From March 1 through April 30 and November 1 through November 30, direct lighting of the beach and near shore waters must be limited to the immediate construction area and must comply with safety requirements. Lighting on offshore or onshore equipment must be minimized through reduction, shielding, lowering, and appropriate placement to avoid

excessive illumination of the waters surface and nesting beach while meeting all Coast Guard, EM 385-1-1, and OSHA requirements. Light intensity of lighting plants must be reduced to the minimum standard required by OSHA for General Construction areas, in order not to misdirect sea turtles. Shields must be affixed to the light housing and be large enough to block light from all lamps from being transmitted outside the construction area (Figure 1).

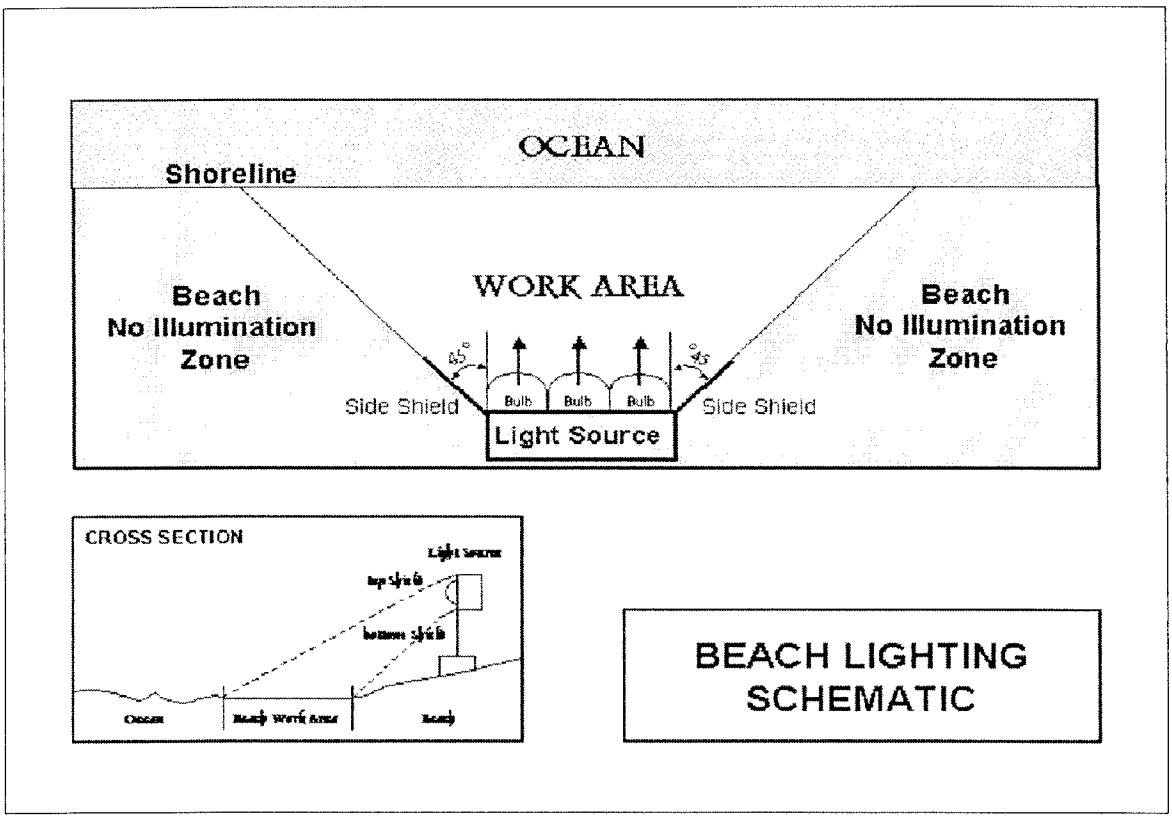


Figure 1. Lighting diagram.

13. A report describing the actions taken to implement the terms and conditions of this incidental take statement must be submitted to the South Florida Ecological Services Office, Vero Beach, Florida within 60 days of completion of the proposed work for each year when the activity has occurred. This report will include the dates of actual construction activities, names and qualifications of personnel involved in nest surveys and relocation activities, descriptions and locations of self-release beach sites, nest survey and relocation results, and hatching success of nests.

14. In the event a sea turtle nest is excavated during construction activities, the permitted person responsible for egg relocation for the project must be notified so the eggs can be moved to a suitable relocation site.

15. Upon locating a sea turtle adult, hatchling, or egg harmed or destroyed as a direct or indirect result of the project, notification must be made to the Florida Fish and Wildlife Commission, Division of Law Enforcement at 888-404-3922, and the Service's South Florida Ecological Services Office in Vero Beach at 772-562-3909. Care should be taken in handling injured sea turtles or eggs to ensure effective treatment or disposition, and in handling dead specimens to preserve biological materials in the best possible state for later analysis.

The Service believes that incidental take may be limited to the 5.8 miles of beach that have been identified for sand placement. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. The Service believes that no more than the following types of incidental take will result from the proposed action: (1) destruction of all nests that may be constructed and eggs that may be deposited and missed by a nest survey and egg relocation program within the boundaries of the proposed project; (2) destruction of all nests deposited during the period when a nest survey and egg relocation program is not required to be in place within the boundaries of the proposed project; (3) reduced hatching success due to egg mortality during relocation and adverse conditions at the relocation site; (4) harassment in the form of disturbing or interfering with female sea turtles attempting to nest within the construction area or on adjacent beaches as a result of construction activities; (5) disorientation of hatchling turtles on beaches adjacent to the construction area as they emerge from the nest and crawl to the water as a result of project lighting; (6) behavior modification of nesting females due to escarpment formation within the project area during a nesting season, resulting in false crawls or situations where they choose marginal or unsuitable nesting areas to deposit eggs; and (7) destruction of nests from escarpment leveling within a nesting season when such leveling has been approved by the Fish and Wildlife Service.

The amount or extent of incidental take for sea turtles will be considered exceeded if the project results in more than a **one-time placement of sand** on the 5.8 miles of beach that have been identified for sand placement. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Corps must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. Appropriate native salt-resistant dune vegetation should be established on the restored dunes. The DEP can provide technical assistance on the specifications for design and implementation.

2. Surveys for nesting success of sea turtles should be continued for a minimum of 3 years following beach nourishment to determine whether sea turtle nesting success has been adversely impacted.

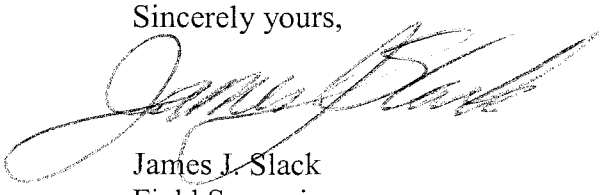
3. Educational signs should be placed where appropriate at beach access points explaining the importance of the area to sea turtles and/or the life history of sea turtle species that nest in the area.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

Following the completion of the emergency actions, the Service requests that the Corps provide the following information: (1) project location by R-monument and address; (2) project description; (3) date of construction, (4) sand source and beach compatibility analysis; and (5) a description of how the reasonable and prudent measures and terms and conditions were implemented. We believe that obtaining this information is necessary to determine the potential adverse affects of the proposed construction projects on our Federal trust resources.
Once the project is completed, we will conclude the consultation process within 90 days. A biological opinion will be issued 45 days thereafter. Although these are our regulatory time frames, the majority of consultations are completed in a much shorter time.

Thank you for your cooperation and effort in protecting fish and wildlife resources. Should you have any questions regarding the findings and recommendations contained in this document, please contact Trish Adams at 772-562-3909, extension 232.

Sincerely yours,



James J. Slack
Field Supervisor
South Florida Ecological Services Office

cc:
DEP, Bureau of Beaches and Coastal Systems, Tallahassee, Florida (Marty Seeling)
EPA, West Palm Beach, Florida
FWC, Bureau of Protected Species Management, Tallahassee, Florida (Robbin Trindell)
NOAA Fisheries, Miami, Florida (Jocelyn Karazsia)
Service, Jacksonville, Florida (Sandy MacPherson)