APPENDIX E

Agency Letters and Pertinent Correspondence

Tybee Island, Georgia Shore Protection Project 2014-2015 Renourishment

June 2014

Table of Contents

Comments by U.S. Fish and Wildlife Service
Tybee Island, Georgia Shore Protection Project
Draft EA and BATES

USFWS COMMENTS (5/15/13):

- The Service does not concur with the District finding that the project May Affect and is Not Likely to Adversely Affect (MANLAA) federally listed endangered or threatened species, or result in the destruction or adverse modification of designated critical habitat.
- The Service recommends the red knot (a candidate species) be included in the EA and BATES.

DISTRICT RESPONSE (12/17/13):

- The District changed its' finding from May Affect and is Not Likely to Adversely Affect (MANLAA) to May Affect and is Likely to Adversely Affect (MALAA) wintering Piping Plover and Critical Habitat Unit-GA-1 due to incidental take in the form of harassment and requested formal consultation.
- The District maintained its' finding of MANLAA other listed species, including the leatherback and loggerhead sea turtles.

USFWS COMMENTS (1/18/14):

- The Service does not concur with the Districts' determination of May Affect and is Not Likely to Adversely Affect (MANLAA) loggerhead and leatherback sea turtles.

DISTRICT RESPONSE (2/5/14):

- The District maintained its' finding of MANLAA sea turtles.

USFWS COMMENTS (2/10/14):

- The Service maintains non-concurrence with determination of May Affect and is Not Likely to Adversely Affect (MANLAA) and continues to recommend the District voluntarily confer on effects to the red knot.
- The Service will provide a Biological Opinion by June 25, 2014 in accordance with Section 7 formal consultation.

DISTRICT RESPONSE (2/27/14):

- The District concurs with the Service that the project May Affect and is Likely to Adversely Affect (MALAA) nesting sea turtles after construction due to changes in beach slopes.
- The District agrees to address potential project impacts to the red knot in the final EA.

Comments by National Marine Fisheries Service
Tybee Island, Georgia Shore Protection Project
Draft EA and EFH

NMFS COMMENTS (1/22/14):

- NMFS recommends updating the Essential Fish Habitat (EFH) assessment to cite updated fishery management plans.
- Two EFH Conservation Recommendations were included: (1) The District shall limit the dredging to depths likely to fill in with beach compatible sand, and (2) The District shall monitor the borrow area and surf zone in a manner similar to that conducted in 2008.

DISTRICT RESPONSE (1/27/14):

- The District will work with NMFS to update the EFH assessment.
- The District does not concur with conservation recommendation (1), to limit dredging in the borrow area to 1 meter due to increased construction costs and uncertain environmental benefits. The District concurs with conservation recommendation (2), funding a monitoring program similar to that performed in 2008 to determine benthos recovery rates.

Comments by Georgia Department of Natural Resources, Coastal Resources Division and Wildlife Resources Division Tybee Island, Georgia Shore Protection Project Draft EA

GADNR/CRD/WRD COMMENTS (1/17/14):

1. No work will be allowed to occur during sea turtle nesting season (May 1-Sept 30).
2. Compaction testing and tilling should be conducted prior to turtle nesting season for 4 years after project completion.
3. Escarpments that form outside of the project template should not be leveled.
4. Tilling funds should be in place prior to project commencement to ensure the beach is prepared before turtle nesting season.
5. In the event beach fill contains shell content greater than 15%, a mechanism to mitigate for high shell content should be addressed and an analysis of cumulative effects of beach nourishment should be incorporated into the EA.
6. In the event inferior beach material is placed, a plan for removal or amelioration should be in place.
7. If the project design includes sand fencing, GADNR guidelines for fencing should be followed.

DISTRICT RESPONSE (2/18/14):

- The District concurred with all comments except numbers (5) and (6). Borrow area analysis showed material had less than 10% shell content and is high quality for beach placement. There is no evidence that borrow material will be unsuitable for beach fill. The borrow area that was used in 2008 will be used for this nourishment. That site had high compatibility with the existing beach. Areas within this site that were not disturbed in 2008 will be used for this nourishment.

Comments by R. Todd Silliman on behalf of the Ocean Plaza Beach Resort Tybee Island, Georgia Shore Protection Project Draft EA

SILLIMAN COMMENTS (1/17/14):

1. Past nourishments have caused the creation of harmful sand mounds and their removal should be considered.
2. Removal of sand dunes should be addressed in the EA to benefit recreation.
3. The EA should consider sand mound impediments to aesthetics.
4. The benefit to cost ratio should be recalculated with sand dune removal considerations.
5. The EA does not address negative impacts of sand dunes to nesting sea turtles or dredging impacts to right whales.
6. The District should consider dredging the sand bar off the southern tip as part of the project and conduct further contaminant testing of the existing borrow area.
7. The District should consider dune modification to increase tourism and provide storm protection benefits.
8. The District should reconsider cumulative impacts and prepare an Environmental Impact Statement in place of an EA.
9. The District should consider other alternatives than renourishment, especially dune field manipulation.
10. The District should withdraw the FONSI and EA.

DISTRICT RESPONSE (2/18/14):

1. The District does not concur with the statement that harmful sand mounds are present. The District views the sand dunes as beneficial for storm protection and habitat enhancement. No dune creation is planned as part of this renourishment. The District concurs that dune locations shall be revised in the final EA.
2. The District does not concur that sand dunes are causing a detrimental impact to recreational benefits. Dune management on private property is an operations and maintenance (O&M) responsibility of the City if sand migrates offsite from the constructed template. No sand dunes will be constructed or removed as part of this Federal project.
3. The District does not concur that sand dunes are unsightly and impeding aesthetics and that past renourishments are the main cause of sand dune formation. No sand dunes will be constructed or removed as part of this project. Without renourishments, the front beach would experience a reduction in dry beach sand, causing a negative impact to aesthetics, human safety, and tourism revenue.
4. District does not concur that sand dunes have a negative effect on economics or that the BCR should be recalculated. The benefits used to economically

justify the renourishment project are primarily derived from those associated with storm damage reduction. Benefits or a lack of benefits associated with recreation and/or tourism would not significantly impact the BCR.

5. The District concurs that sand dunes provide no nesting habitat for sea turtles. However, no dunes are present in areas turtles are likely to use for nesting. An environmental protection plan will be enforced, including a right whale observer and watch plan to ensure no right whales are harmed as a result of the project. A re-examination of existing sand dunes and the beach management plan written by Dr. Oertel would be considered if the City and Corps pursue extending the Federal project beyond 2024.
6. The District does not concur that the sandbar between Tybee and Little Tybee Island should be dredged as part of this project. The sandbar sits inside the Little Tybee Island Coastal Barrier Resources Act (CBRA) zone line and dredging of the sandbar would likely cause detrimental impacts to Little Tybee.
7. The District does not concur that the borrow site should be tested for hazardous, radioactive, or toxic waste, because there is no reason to suspect that HTRW issues are of concern in those sediments. No major pollution events have occurred since the last testing, no known activities involving HTRW have occurred in the vicinity of that site, and the borrow area material is largely quartz sand (over 90%) which does not retain HTRW. Therefore, testing is not warranted.
8. The District does not concur the renourishment will have an adverse effect on tourism and the economy. Renourishments have a positive effect on storm protection and tourism by providing storm surge barriers and creating additional dry recreational beach. No sand dune removal is planned as part of this Federal project.
9. The District does not concur that past renourishments have caused adverse cumulative impacts to Tybee Island. Tybee Island has been a renourished beach since 1974. Without renourishments, the beach would continue to erode away, greatly reducing the amount of dry beach present. If the beach is allowed to continue to erode, structures on the island would be subject to higher damages or potential total loss. Additionally, the amount of sea turtle nesting habitat would be greatly reduced.
10. The District does not concur that alternatives need to be re-assessed. The final beach template design for renourishment will be based on current surveys to be conducted of the entire Federal project, including Back River, immediately prior to construction. The final design template will take into consideration current and anticipated beach material losses and will be designed to optimize shore protection through 2024.
11. The District does not concur that the FONSI should be withdrawn. The FONSI is accurate and no sand dune removal or creation is planned for this renourishment. An analysis of beach management as described in Dr. Oertel's report and in other publications will be addressed should the project extend past 2024.

CORRESPONDENCE LETTERS

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
100 W. OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

REPLY TO
ATTENTION OF:

Planning Division

December 17, 2013

PUBLIC NOTICE
U.S. Army Corps of Engineers, Savannah District

TO WHOM IT MAY CONCERN:

SUBJECT: Notice of Availability of a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for 2015 Tybee Island Shore Protection Project, Georgia.

Notice of the following is hereby given:

a. Pursuant to the National Environmental Policy Act of 1969, notice is hereby given that the US Army Corps of Engineers, Savannah District has selected to perform periodic beach renourishment on Tybee Island, Georgia.

b. The Savannah District announces the availability to the public of a Draft EA and Draft FONSI concerning the action involving the Tybee Island Shore Protection Project. The plan calls for placement of approximately 1,748,750 cubic yards (c.y.) of material on the beach at Tybee Island within the limits of the Federal project. The exact quantity to be placed and the final project template will be determined based on physical conditions and funds available at the time of construction. The proposed construction is scheduled to occur between November 2015 and April 2016. Copies of the Draft EA and unsigned FONSI can be obtained through email request to the following address: CESAS-PD@usace.army.mil, or contacting Ms. Ellie Covington at (912) 652-5578. Copies may also be downloaded from the District website http://www.sas.usace.army.mil/About/DivisionsandOffices/PlanningDivision/PlansandReports.aspx

c. Written statements regarding the Draft EA and FONSI for the proposed action will be received at the Savannah District Office until

12 O'CLOCK NOON, JANUARY 17, 2014

from those interested in the activity and whose interests may be affected by the proposed action.

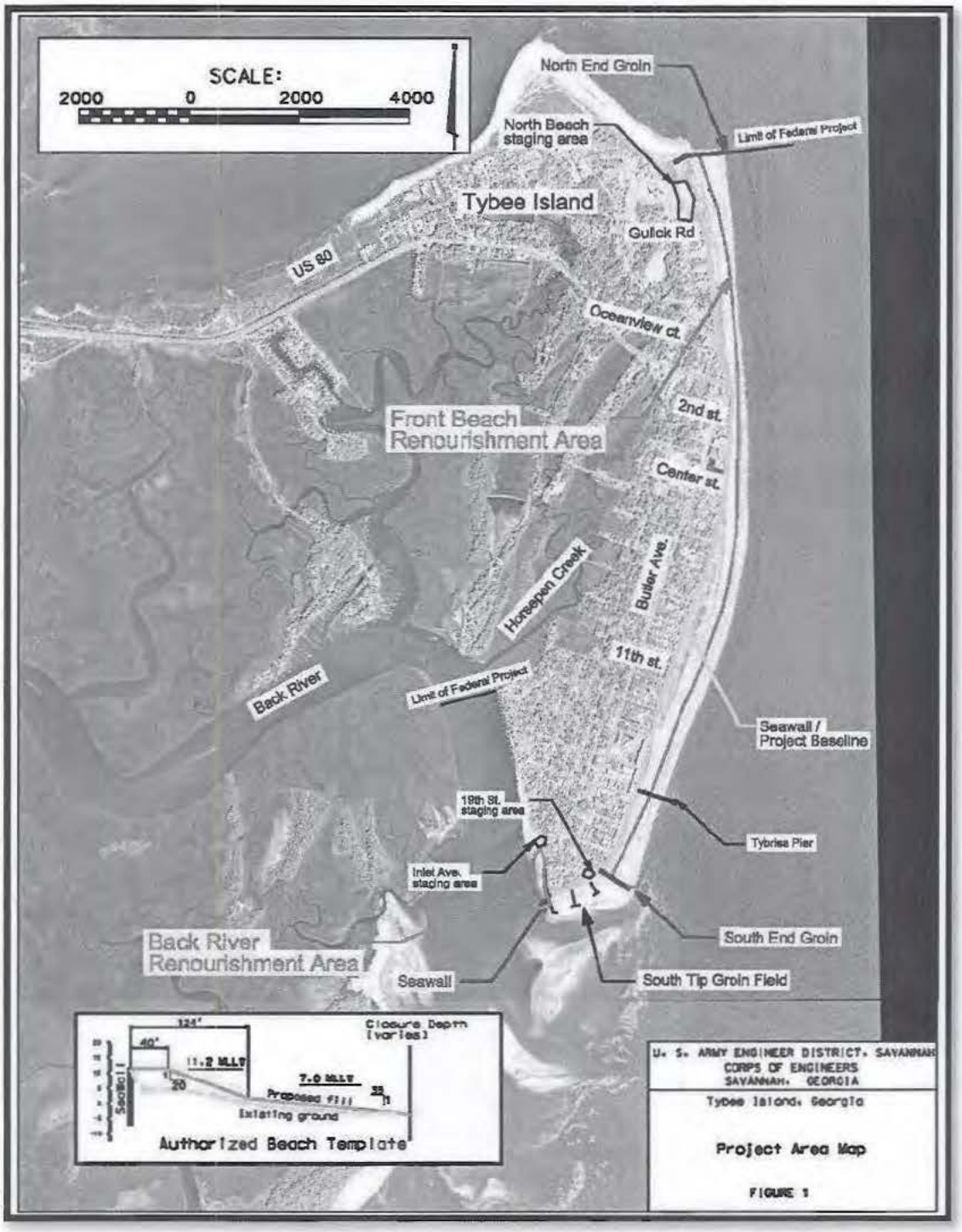
PROJECT DESCRIPTION: This authorized 3.5 mile long project was initially constructed in 1974 with a 50-year project life and periodic renourishments to occur every 7 years. The beach was last renourished in 2008 and is scheduled to be renourished again in 2015. In 2015, there will be 9 years left in the project life (i.e. Federal participation). The Savannah District, with the non-Federal sponsor's concurrence, selected to perform the 2015 periodic renourishment for the remaining 9 years of the 50-year project life. The renourishment volume to be placed includes the volume needed to restore the project plus an additional 312,000 cubic yards to account for potential erosion through 2024. The beach template will be slightly modified to include placement of the additional material by extending the berm up to the North terminal groin of the template. This area has been nourished during previous renourishment cycles, but not during the 2008 renourishment. In addition, the berm will be extended seaward up to 50 feet beyond the previously constructed template to account for erosion during the additional 2 years for a 9 year cycle. The same borrow area that was used for the 2008 renourishment, Borrow Area 4, will be used for this final renourishment.

Alternatives to the Proposed Action were developed as part of the planning process. The alternatives that were considered were as follows:

a. Alternative 1: Without Project Condition/No Action Alternative - no beach renourishment. This alternative would result in continued erosion to the Tybee Island Shore Protection Project, including potential loss of property and structures. Since December 2008 an average loss of approximately 164,000 cy/yr has occurred on the oceanfront beach. The majority of erosion occurred at the Second Street "hot spot" with a lesser degree of erosion in the vicinity of the Tybrisa Pier. With no renourishment, the beach would continue to erode, with a concomitant loss in storm damage protection and recreational benefits. In addition, if erosion were to be allowed to continue unimpeded, seawall and dune damage would be expected to occur at an accelerated rate.

b. Alternative 2 (Selected Alternative): Beach Renourishment. The proposed project template design is based on project performance and erosion rates since the last renourishment project in 2008. Beach fill will primarily be placed in areas included in the previous renourishment in 2008. These areas include the Oceanfront North Beach from the north terminal groin to Center Street, the Oceanfront South Beach from 11th Street to the South End Terminal (Federal) Groin, and the Back River Beach from Inlet Avenue to Southernmost end of Groin G-1 in the South Tip Groin Field. Additional fill will be placed between these areas to provide a more stable beach profile and to avoid some of the excessive losses in the 2nd Street "hot spot" from project end losses and offshore losses that resulted from the wide beach constructed at this location during the last renourishment. Constructed beach widths on the Back River Beach vary from 30 feet to 110 feet at +11.22 MLLW. Beach widths on the Oceanfront Beach will vary from a 25 foot width berm, to a berm approximately 350 feet wide at the elevation of +11.22 MLLW. Based on natural angle of repose on the existing beach, and experience with previous placement, a beach slope of 1 vertical (V) on 25 horizontal (H) will be required on the oceanfront beach. The Back River will have an 11.2 foot elevation MLLW and a 1V:15H slope. The constructed berm width is calculated to

protect the authorized template for 9 years. The figure below illustrates the template proposed design.



DEPARTMENT OF THE ARMY EVALUATION:

Environmental Assessment: Savannah District has prepared a Draft Environmental Assessment (EA) and found that an Environmental Impact Statement will not be required for this action. The Draft EA is being coordinated concurrently with this Notice to Federal and State natural resource agencies for review and comment. No wetlands would be impacted by the proposed action.

Threatened and Endangered Species: The District reviewed the most recent information on Federally-listed endangered or threatened species and determined that the proposed action may affect, but is not likely to adversely affect Wood storks, Sea turtles, Manatees, Right whales, Atlantic and Shortnose sturgeon due to the time of year construction is scheduled. These species are not likely to be present in the construction area during 1 November through 30 April. The District determined the proposed project may affect, and is likely to adversely affect the Piping plover and its' wintering Critical habitat Unit GA-1 due to construction activities which may result in incidental take in the form of harassment. Overall positive net benefits to this species critical habitat are expected. This proposed action is being coordinated with the US Fish and Wildlife Service and the National Marine Fisheries Service under Section 7 of the Endangered Species Act.

Cultural Resources: The Area of Potential Effect includes the beach face to be renourished, construction access areas, and the borrow area. Consultation conducted under 36 CFR, Part 800, for previous Tybee Beach renourishment projects has established that placement of sand on this beach face and reuse of previously used access areas will have no effect upon significant historic properties. Archaeological remote sensing surveys were conducted to identify and evaluate historic properties in a large offshore area. The results of these surveys and supplementary diver investigations were used to define the borrow area limits in a manner that will avoid impacts to magnetic anomalies and/or sonar targets that may represent potentially significant historic resources. The results of these investigations and the finding that the proposed project will have no effect upon historic properties are being coordinated with the Georgia State Historic Preservation Office.

Essential Fish Habitat: Savannah District evaluated the proposal's potential effects on Essential Fish Habitat (EFH). No significant impacts to essential fish habitat are expected. An EFH appendix is provided in the draft Environmental Assessment. This determination is being coordinated with the National Marine Fisheries Service.

Water Quality Certification: Water Quality Certification for the proposed work is being requested from the Georgia Department of Natural Resources, Environmental Protection Division.

Coastal Zone Consistency: The Savannah District has evaluated the proposed project and found it is consistent with the Georgia Coastal Zone Management Program to the maximum extent practicable. The District is coordinating it's consistency with the Georgia Department of Natural Resources, Coastal Resources Division in Brunswick, Georgia.

Clean Air Act: This action is being coordinated with the United States Environmental Protection Agency. No violations of air quality standards are expected.

Application of the Section 404(b)(1) Guidelines:
The District has conducted an evaluation of the proposed impacts in accordance with Section 404(b)(1) of the Clean Water Act and determined that the proposed discharge complies with the Section 404(b)(1) Guidelines. That evaluation is included as an appendix to the draft EA for the proposed work.

Public Interest Review: The decision whether to proceed with the project as proposed will be based on an evaluation of the probable impact, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both the protection and use of important resources. The benefits which reasonably may be expected to accrue from the proposal will be balanced against its reasonably foreseeable detriments. All factors that may be relevant to the proposal will be considered, including the cumulative effects thereof. Among these are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife, flood hazards, flood plains, land use, navigation, shoreline erosion/accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, consideration of property ownership, environmental justice, and, in general, the needs and welfare of the people.

Consideration of Public Comments: The US Army Corps of Engineers is soliciting comments from the public; Federal, State, and local agencies and officials; Native American Tribes; and other interested parties in order to consider and evaluate the impacts of the proposed activity. Any comments received will be considered by the US Army Corps of Engineers in its deliberations on this action. To make this decision, comments are used to assess impacts to endangered species, wetlands, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of the Environmental Assessment pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Comment Period: Anyone wishing to comment to the Corps on this proposed action should submit comments no later than the end of the comment period shown in this notice, in writing, to the US Army Corps of Engineers, Savannah District, Planning Division, ATTN: Ms. Ellie Covington, 100 West Oglethorpe Avenue, Savannah, Georgia 31401-0889, by FAX to 912-652-5787, or by emailing the comments to the following address: CESAS-PD.SAS@usace.army.mil.

William G. Bailey

William G. Bailey
Chief, Planning Division

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
100 W. OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

REPLY TO
ATTENTION OF:

Planning Division

APR 03 2013

Bill Wikoff
Biologist, U.S. Fish and Wildlife Service Region 4
Ecological Services Coastal Georgia Sub Office
4980 Wildlife Drive, NE
Townsend, GA 31331

Dear Mr Wikoff:

The US Army Corps of Engineers, Savannah District has prepared a Draft Biological Assessment of Threatened and Endangered Species (enclosed) for the next periodic beach renourishment of the Tybee Island, Georgia, Beach Erosion Control Project. In accordance with Section 7 of the Endangered Species Act, I am requesting initiation of Informal Consultation on the effects of the project on threatened and endangered species in the area. The District has determined that implementation of this beach renourishment is "Not Likely to Adversely Affect" listed species present in the project area.

The proposed renourishment would use a hydraulic cutterhead dredge to place up to 1,750,000 cubic yards of beach compatible sand along the authorized Federal project shoreline. The sand source is Borrow Area 4 (the same borrow area used in the last renourishment) located approximately 7,000 feet southeast of the southern tip of Tybee Island. Since this renourishment would place sediment sufficient for 9 years of erosion instead of the usual 7 years, the volume is approximately 312,000 cubic yards more than what was placed in 2008. The beach template will be modified from the last renourishment by extending the berm up to the north terminal groin and extending seaward up to 50 feet to allow deposition of the additional volume of material.

We look forward to working with your staff as we continue our efforts to provide shoreline protection in a manner that minimizes impacts to protected species. My point of contact for this action is Ms. Ellie Covington, (912) 652-5578 or email at Ellie.L.Covington@usace.army.mil.

For further information, please contact me at (912) 652-5781 or by e-mail at CESAS-PD@usace.army.mil.

Sincerely,

William G. Bailey

William G. Bailey
Chief, Planning Division
Savannah District

Enclosures

United States Department of the Interior
Fish and Wildlife Service
105 Westpark Drive, Suite D
Athens, Georgia 30606
Phone: (706) 613-9493
Fax: (706) 613-6059

West Georgia Sub Office
P.O. Box 52560
Ft. Benning, Georgia 31995-2560
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Fax: (706) 544-6419

Coastal Sub Office
4980 Wildlife Drive
Townsend, Georgia 31331
Phone: (912) 832-8739
Fax: (912) 832-8744

May 15, 2013

Colonel Jeffrey M. Hall
U. S. Army Corps of Engineers
Planning Division
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3640
Attention: Ms. Ellie L. Covington

Re: USFWS File Number 2013-0407

Dear Colonel Hall:

The U. S. Fish and Wildlife Service (Service) has reviewed the U. S. Army Corps of Engineers (USACE) Planning Division's April 3, 2013, correspondence requesting initiation of informal consultation concerning the next periodic beach renourishment of the Tybee Island, Beach Erosion Control Project, in Chatham County, Georgia. A draft Environmental Assessment (EA) and draft Biological Assessment of Threatened and Endangered Species (BATES) for the action were included as enclosures. Our report is submitted in accordance with section 2(b) of the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), section 7(a) (2) of the Endangered Species Act (ESA) of 1973, as amended; (16 U.S.C. 1531 et seq.), and section 6 of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.).

The project was initially constructed in 1974 and has a 50-year project life scheduled to end in 2024. Periodic renourishments are planned for every 7 years. The beach was last renourished in 2008 and is scheduled to be renourished again in 2015. The Savannah District, with the non-Federal sponsor's concurrence, selected to perform the 2015 periodic renourishment with sediment sufficient for the remaining 9 years of the project. This would be the last renourishment of this 50-year project. Approximately 3 miles of the 3.5-mile-long island is proposed for renourishment. A hydraulic cutterhead dredge would place up to 1,750,000 cubic yards of beach compatible sand along the authorized Federal project shoreline during a construction window between November 1, 2015 and April 30, 2016. The sand source is Borrow Area 4, the same borrow area used in the last renourishment. This borrow area is located approximately 7,000 feet southeast of the southern tip of Tybee Island. Since this renourishment would place sediment sufficient for 9 years of erosion instead of the usual 7 years, the volume is approximately 312,000 cubic yards more than was placed in 2008. The beach template will be

modified from the last renourishment by extending the berm up to the north terminal groin and extending seaward up to 50 feet to allow deposition of the additional volume of material.

Our specific resource concerns are consistent with our 1993 FWCA report; however, piping plover critical habitat has been designated within the project area since the 1993 report. In addition, the red knot, an ESA candidate species, may be listed by the time of the commencement of the project. Our concerns related to: 1) marine nearshore and subtidal bottom habitats and associated fish, shellfish, and benthic invertebrates; 2) the intertidal beach habitat and associated benthic communities; and 3) nesting shorebirds, have been addressed.

Little Tybee Island Unit No.1 in the CBRS is located immediately south of the offshore borrow site at the south end of Tybee Island. The Tybee Island beach renourishment borrow site expansion was developed to avoid impacts to Little Tybee Island Unit No. 1. All offshore dredging activities associated with the beach renourishment project will continue to be setback from the boundary of the Little Tybee Island CBRS unit which extends along the southerly perimeter of the borrow site utilized in 1994 (by the Georgia Ports Authority) and 2000 and 2008 (by the USACE). We commend the USACE for avoiding this area because borrowing from this CBRS unit could adversely affect Little Tybee Island, an outstanding Natural Area that is owned by the State of Georgia. After reviewing our official CBRS map for the area (dated October 16, 2006), we have determined that the offshore borrow site described above is not within the CBRS or Otherwise Protected Area.

We do not concur with your determination that the proposed action may affect but is not likely to adversely affect federally listed endangered or threatened species, or result in the destruction or adverse modification of designated critical habitat. The documents do not adequately address the impacts to red knots, sea turtles, and plovers, and their designated critical habitat. We strongly recommend the red knot be taken into consideration as you consider this action. In order to insure compliance with the ESA, we suggest the USACE initiate formal consultation with the Service. We are available to assist with preparation of the initiation package. The information needed to begin formal consultation is described at 50 CFR 402.14(c).

We appreciate the opportunity to review your letter, draft EA and BATES for the project. If you have any questions, please contact our Coastal Georgia Sub Office staff biologist, Bill Wikoff, at 912-832-8739 extension 5.

Sincerely,

Sandra S. Tucker

Sandra S. Tucker
Field Supervisor

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
100 W. OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

REPLY TO
ATTENTION OF:

Planning Division

DEC 17 2013

Mr. Bill Wikoff
Biologist
Ecological Services Coastal Georgia Sub Office
U.S. Fish and Wildlife Service Region 44980 Wildlife Drive, NE
Townsend, Georgia 31331

Dear Mr. Wikoff:

The Savannah District U.S. Army Corps of Engineers (District) has prepared a Draft Biological Assessment of Threatened and Endangered Species (BATES) for the next periodic beach renourishment of the Tybee Island, Georgia, Shore Protection Project. In accordance with Section 7 of the Endangered Species Act, I am requesting initiation of Formal Consultation on the effects of the project on threatened and endangered species in the area. The District has determined the project "May Affect and is Likely to Adversely Affect" wintering Piping Plover and Critical Habitat Unit-GA-1 due to incidental take in the form of harassment. The renourishment may result in short-term negative impacts to the population and habitat of Piping plover, but result in long-term beneficial gains by increasing wintering habitat in Critical Habitat Unit GA-1. The District concluded the project "May Affect but is Not Likely to Adversely Affect" other listed species in the project area, including the loggerhead and leatherback sea turtles, and Florida manatees since construction is scheduled to occur outside the time of year when these species are expected to be present in the area. The proposed project is scheduled to occur between November 1, 2015 and April 30, 2016.

The proposed renourishment would use a hydraulic cutterhead dredge to place up to 1,750,000 cubic yards of beach compatible sand along the authorized Federal project shoreline. The sand source is Borrow Area four (the same borrow area used in the last renourishment) located approximately 7,000 feet southeast of the southern tip of Tybee Island. Since this renourishment would place sediment sufficient for nine years of erosion instead of the usual seven years, the volume is approximately 312,000 cubic yards more than what was placed in 2008. The beach template will be modified from the last renourishment by extending the berm up to the north terminal groin and seaward up to 50 feet to allow deposition of the additional volume of material.

The draft EA may be downloaded from the District website: http://www.sas.usace.army.mil/About/DivisionsandOffices/PlanningDivision/PlansandReports.aspx. We look forward to working with you as we continue our efforts to provide shoreline protection in a manner that minimizes impacts to protected species. Pursuant to the Endangered Species Act, the Fish and Wildlife Coordination Act, and the National Environmental Policy Act, please provide any comments that you may have within 30

calendar days of receipt of this letter to letter to Ms. Ellie Covington, Planning Division, Savannah District U.S. Army Corps of Engineers, and 100 West Oglethorpe Avenue, Savannah, Georgia 31401-0889. You may contact Ms. Covington at (912) 652-5578 or email at Ellie.L.Covington@usace.army.mil.

For further information, please contact me at (912) 652-5781 or by e-mail at CESAS-PD@usace.army.mil.

Sincerely,

William G. Bailey

William G. Bailey
Chief, Planning Division
Savannah District

United States Department of the Interior

Fish and Wildlife Service
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Athens, Georgia 30606
Phone: (706) 613-9493
Fax: (706) 613-6059

West Georgia Sub-Office
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Fort Benning, Georgia 31995-2560
Phone: (706) 544-6428
Fax: (706) 544-6419

Coastal Sub-Office
4980 Wildlife Drive
Townsend, Georgia 31331
Phone: (912) 832-8739
Fax: (912) 832-8744

January 18, 2014

Colonel Thomas J. Tickner
U. S. Army Corps of Engineers
Planning Division
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3640
Attention: Ms. Ellie L. Covington

Re: USFWS File Number 2013-0407

Dear Colonel Tickner:

The U. S. Fish and Wildlife Service (Service) has reviewed the U. S. Army Corps of Engineers (USACE) Planning Division's December 20, 2013, letter requesting initiation of formal consultation on the effects on threatened and endangered species and comments on the draft Environmental Assessment (EA) for the next periodic beach renourishment of the Tybee Island, Beach Erosion Control Project, in Chatham County, Georgia. The letter contained an effects determination and a link to the EA and draft Biological Assessment of Threatened and Endangered Species (BATES) for the action. Our comments are submitted in accordance with provisions of the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*), and the Endangered Species Act (ESA) of 1973, as amended; (16 U.S.C. 1531 *et seq.*).

The USACE determined that the proposed action may affect, but is not likely to adversely affect wood storks, sea turtles, manatees, right whales, and Atlantic and shortnose sturgeon due to the time of year construction is scheduled. The USACE stated that these species are not likely to be present in the construction area during 1 November through 30 April. The USACE determined the proposed project may affect, and is likely to adversely affect the Piping plover and its wintering Critical habitat Unit GA-1 due to construction activities which may result in incidental take in the form of harassment. The draft EA and BATES contain

conditions that shall be included in the construction contract to avoid adverse impacts to these species. Sea turtles (when in the water), sturgeon and, whales are the responsibility of the National Oceanic and Atmospheric Administration Fisheries.

We do not concur with your determination that the proposed action may affect but is not likely to adversely affect the loggerhead sea turtle *(Caretta caretta)* and the leatherback sea turtle *(Dermochelys coriacea)*. Adverse effects will be greatly reduced by the protective measures to be taken. However, with regard to indirect loss of eggs and hatchlings, on most beaches, nesting success typically declines for the first year or two following sand placement, even though more nesting habitat is available for turtles (Trindell et al. 1998, Ernest and Martin 1999, Herren 1999). Reduced nesting success on constructed beaches has been attributed to increased sand compaction, escarpment formation, and changes in beach profile (Nelson et al. 1987, Crain et al. 1995, Steinitz et al. 1998, Ernest and Martin 1999, Rumbold et al. 2001). In addition, even though constructed beaches are wider, nests deposited there may experience higher rates of wash out than those on relatively narrow, steeply sloped beaches (Ernest and Martin 1999). This occurs because nests on constructed beaches are more broadly distributed than those on natural beaches, where they tend to be clustered near the base of the dune. Nests laid closest to the waterline on constructed beaches may be lost during the first year or two following construction as the beach undergoes an equilibration process during which seaward portions of the beach are lost to erosion. As a result, the sand project is anticipated to result in decreased nesting and loss of nests that do get laid within the project area for two subsequent nesting seasons following the completion of the proposed sand placement.

The draft EA and BATES contain statements that the project may affect but is not likely to adversely impact listed species or result in the destruction or adverse modification of critical habitat. We disagree and opine that the project may affect and is likely to adversely affect sea turtles and piping plovers and adversely affect plover critical habitat.

We appreciate the USACE statement in the EA that they "will consider any new Reasonable and Prudent Measures and implement measures to minimize take" from any new biological opinion the Service provides for the project.

We appreciate the opportunity to review your request for formal consultation, draft EA and BATES for the project. If you have any questions, please contact our Coastal Georgia Sub Office staff biologist, Bill Wikoff, at 912-832-8739 extension 5.

Sincerely,

Strant Colwell

Strant T. Colwell
Coastal Georgia Supervisor

cc: William G. Bailey, Chief, Planning Division, USACE, Savannah, Georgia
Ann Marie Lauritsen, USFWS Sea Turtle Biologist, Saint Petersburg, Florida

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DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
100 W. OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

REPLY TO
ATTENTION OF:

Planning Division

FEB 05 2014

Mr. Bill Wikoff
Biologist
Ecological Services Division, Coastal Georgia Sub-Office
U.S. Fish and Wildlife Service
44980 Wildlife Drive, NE
Townsend, GA 31331

Dear Mr. Wikoff:

The U.S. Army Corps of Engineers, Savannah District received your letter dated January 18, 2014 acknowledging the District's request for formal consultation for the next Tybee Island, Georgia, Shore Protection Project. While the District appreciates the information provided on sea turtle nesting declines on renourished beaches, that does not change our determination that the project "May Affect but is Not Likely to Adversely Affect" loggerhead and leatherback sea turtles. The project would place sand on the beach in a manner that would allow it to be used by sea turtles for nesting for several years. The District and the Georgia Department of Natural Resources will perform compaction testing prior to four sea turtle nesting seasons and, if needed, the beach will be tilled prior to April 30th to a depth of 36 inches to ensure it is suitable for sea turtle nesting. The District agrees that the project will change the beach profile, but we believe that compaction testing and nest monitoring will identify any areas potentially unsuitable for nesting and that corrective actions will be taken. In addition, the Tybee Island Marine Science Center conducts a robust sea turtle nesting monitoring program that ensures optimum hatchling success. But that program can only be effective if the beach contains sand that provides suitable nesting habitat. The proposed renourishment will result in more nesting habitat for sea turtles than if the beach is allowed to erode back to the seawall.

We maintain our finding of "May Affect and is Likely to Adversely Affect" wintering Piping Plover and Critical Habitat Unit-GA-1 due to incidental take in the form of harassment during the expected 5-month construction period.

We look forward to working with you as we continue our efforts to provide shoreline protection in a manner that minimizes impacts to protected species. If you need additional information, please contact Ellie Covington at (912) 652-5578 or by e-mail.

Sincerely,

William G. Bailey

William G. Bailey
Chief, Planning Division

United States Department of the Interior
Fish and Wildlife Service
105 West Park Drive, Suite D
Athens, Georgia 30606

West Georgia Sub Office
P.O. Box 52560
Ft. Benning, Georgia 31995-2560

Coastal Sub Office
4980 Wildlife Dr.
Townsend, Georgia 31331

February 10, 2014

Colonel Thomas J. Tickner
U. S. Army Corps of Engineers
Planning Division
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3640
Attention: Ms. Ellie L. Covington

Re: USFWS File Number 2013-0407

Dear Colonel Tickner:

This letter acknowledges the U.S. Fish and Wildlife Service's (Service) receipt of a letter dated February 5, 2014, from Mr. William Bailey of your staff that reiterates the Corps' earlier determination (letter dated December 20, 2013) that the proposed beach nourishment at Tybee Island, in Chatham County, Georgia (the Project) is not likely to adversely affect sea turtles protected under the Endangered Species Act (ESA). By letter dated January 18, 2014, the Service had declined to concur with this determination, providing our reasons.

The Service continues to disagree with the Corps' determination for the loggerhead sea turtle and the leatherback sea turtle. The Service may concur with a "not likely to adversely affect" determination and informally conclude the ESA Section 7 consultation process when effects on listed species are discountable, insignificant, or completely beneficial, i.e., effects should never reach the scale where take occurs. Although we recognize that the Project should have longer-term beneficial effects to nesting habitat conditions and sea turtle populations, the Project may result in take of sea turtles during the initial years following construction, as described in our January 18, 2014, letter. Therefore, we advise the Corps to request initiation of formal consultation for Project effects on sea turtles as the means to conclude consultation for these species, without which, the Corps will not obtain exemption from the ESA Section 9 prohibition against taking listed sea turtles.

The Corps has also determined that the proposed action may affect, but is not likely to adversely affect, the wood stork, manatee, right whale, Atlantic sturgeon, and shortnose sturgeon. Sturgeon, whales, and sea turtles when in the water, are the responsibility of the National Oceanic and Atmospheric Administration Fisheries. The draft Environmental Assessment (EA)

and Biological Assessment of Threatened and Endangered Species (BATES) for the Project contain conditions that the Corps has agreed to include in the project contract to avoid adverse impacts to these species. Based on this commitment, the Service concurs with the determinations for the West Indian manatee *(Trichechus manatus)* and the wood stork *(Mycteria americana)*, which satisfies the requirements of Section 7 of the ESA for these species and no further consultation is required. However, the Corps must reconsider its obligations under section 7 of the ESA if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner which was not previously considered in this assessment; or (3) a new species is listed or critical habitat determined that may be affected by the identified action.

The Corps' EA and BATES do not address Project effects to the red knot *(Calidris canutus rufa)*, which the Service proposed for listing as threatened on September 30, 2013, 78 FR 60023, and which we advised the Corps may occur in the Project Area by letter dated May 15, 2013. Action agencies are required to confer with the Service on any action that is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat (50 CFR 402.10(a)). The Project area does not include areas proposed as critical habitat for the red knot. We advise the Corps to ensure that its administrative record for the Project documents its red knot effect determinations, for which Service concurrence is not required. Please advise us whether you wish to voluntarily confer on the Project's effects to the red knot. The ESA prohibitions against jeopardy/adverse modification and unauthorized take become effective 30 days after a final rule is published. These prohibitions apply to all federal actions over which agencies maintain discretionary authority, regardless of an action's stage of completion. Therefore, federal agencies can avoid and minimize potential adverse effects of their proposed actions to proposed species and critical habitats and expedite the consultation process later by using the conference process earlier in project planning.

In addition to the effects concurrence requests discussed above, the Corps' December 20, 2013, letter requested formal consultation for Project effects to the piping plover *(Charadrius melodus)* and its wintering critical habitat unit GA-1. All information required of you to initiate consultation for this species was either included with your letters, EA and BATES, or is otherwise accessible for our consideration and reference. We have assigned USFWS File Number 2013-0407 to this consultation. Please refer to that number in future correspondence on this consultation. Section 7 allows the Service up to 90 calendar days to conclude formal consultation with your agency and an additional 45 calendar days to prepare our biological opinion (unless we mutually agree to an extension). Therefore, we expect to provide you with our biological opinion no later than June 25, 2014.

The ESA requires that after initiation of formal consultation, the Federal action agency may not make any irreversible or irretrievable commitment of resources that limits future options. This practice insures agency actions do not preclude the formulation or implementation of reasonable and prudent alternatives that avoid jeopardizing the continued existence of endangered or threatened species or destroying or modifying their critical habitats.

If you have any questions or concerns about this consultation or the consultation process in general, please feel free to contact me or our Coastal Georgia Sub Office staff biologist, Bill Wikoff, at 912-832-8739 extension 5.

Sincerely,

John Doresky
Acting Georgia Field Supervisor

cc: William G. Bailey, Chief, Planning Division, USACE, Savannah, Georgia

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
100 W. OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

REPLY TO
ATTENTION OF:

Planning Division

FEB 2 7 2014

Mr. Bill Wikoff
Biologist
Ecological Services Division, Coastal Georgia Sub-Office
U.S. Fish and Wildlife Service
44980 Wildlife Drive, NE
Townsend, Georgia 31331

Dear Mr. Wikoff:

The Savannah District U.S. Army Corps of Engineers (District) received your letter dated February 10, 2014 re-affirming the Services non-concurrence with the District's determination of "May Affect but Not Likely to Adversely Affect" sea turtles as part of the next Tybee Island, Georgia, Shore Protection Renourishment Project. While some evidence exists of nesting decline the year immediately following renourishment, there is substantial uncertainty about what environmental factor can be directly correlated with the conditions at Tybee Island.

Your letter cites three environmental factors associated with beach renourishment that may affect sea turtle nesting success: compaction, escarpments, and changes in beach profiles. The first two factors are mitigated at Tybee Island by performance of tilling prior to nesting season and knocking down escarpments that are found within the Federal project area.

The District's letter dated February 5, 2014 discussed the merits of sand placement to nesting sea turtles. While the District still maintains that the renourishment of Tybee Island will provide a net overall benefit to sea turtle nesting habitat, the proposed renourishment will change the beach profile immediately after construction. Research shows that turtles may have a tendency toward "false crawls" when encountering a wider and steeper slope. The current design calls for a 1 vertical on 25 horizontal slope for the oceanfront beach and a 1 vertical on 15 horizontal for the Back River beach. This slope has been determined as the best design to protect the template for the remainder of the project life. In the absence of excessive storms, we expect the slope of the constructed beach to slowly decrease. Because of the potential adverse effects of altering the beach slope, the District concurs with the Service that the project "May Affect and is Likely to Adversely Affect" nesting sea turtles after construction. This determination is consistent with Jacksonville District's Statewide Programmatic Biological Opinion (SPBO) for sand placement projects in Florida.

The Service also recommended that the District consider the project's effect on a proposed species, the Red Knot (*Calidris canutus*). The District considered potential effects of the renourishment on the Red Knot. Red knots may migrate along the Georgia coast year-round but recorded occurrences of knot sightings on Tybee Island have been infrequent. It is not expected that red knots would congregate on Tybee Island due to the availability of other undeveloped beaches in the vicinity, such as Little Tybee and Tomkins Island. If Red Knots are listed and observed during construction, we would employ the same protective measures as will be used for piping plovers. If the species is listed as threatened prior to or during project construction, the District believes the project "May Affect but Not Likely to Adversely Affect" the knot due to rare reported occurrences and enactment of a protection plan to be followed if the species is observed. We will include our full evaluation in the final Environmental Assessment.

In summary, we maintain our finding of "May Affect and is Likely to Adversely Affect" wintering Piping Plover and Critical Habitat Unit-GA-1 due to incidental take in the form of harassment during the expected 5-month construction period, (2) change our determination on sea turtles to "May Affect and is Likely to Adversely Affect" due to potential incidental take from changes to the beach profile, and (3) find the project "May Affect but Not Likely to Adversely Affect" the Red Knot.

We look forward to working with you as we continue our efforts to provide shoreline protection in a manner that minimizes impacts to protected species. If you need additional information, please contact Ellie Covington at (912) 652-5578 or by e-mail at Ellie.L.Covington@usace.army.mil.

Sincerely,

William G. Bailey

William G. Bailey
Chief, Planning Division

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
http://sero.nmfs.noaa.gov

January 22, 2014 F/SER47:JD/pw

(Sent via Electronic Mail)

Col. Thomas J. Tickner, Commander
Savannah District Corps of Engineers
100 W. Oglethorpe Avenue
Savannah, Georgia 31402-0889

Attention: Ellie Covington

Dear Colonel Tickner:

NOAA's National Marine Fisheries Service (NMFS) reviewed the draft Environmental Assessment (EA) dated December 2013 entitled *Tybee Island Shoreline Protection Project, Georgia, 2015 Renourishment*. EA Appendix B is the Essential Fish Habitat (EFH) Assessment. The project includes placing approximately 1,748,750 cubic yards of material on the Atlantic shoreline of Tybee Island, Chatham County. Construction is scheduled for 2015 or 2016. The Savannah District's initial determination is this project would not have substantial individual or cumulative adverse impacts on EFH or federally managed fishery species. As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, the following comments and recommendations are provided pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

Project Background
The authorized 3.5-mile-long project was initially constructed in 1974 with periodic nourishment expected every seven years for 50 years; the constructed project includes terminal groins and a groin field on the eastern bank of Tybee Creek. Previous nourishments occurred in 1987 by the Savannah District, 1995 by the Georgia Ports Authority, and in 2000 and 2008 by the Savannah District. The volume of sand proposed for the next nourishment event includes material needed to restore the beach to its design profile plus an additional 312,000 cubic yards to account for the erosion predicted to occur through 2024. This additional material requires modifying the design template by extending the berm up to the North terminal groin and extending the berm seaward up to 50 feet beyond the previously constructed template. The project would be constructed using a hydraulic cutterhead pipeline dredge and support equipment. A submerged pipeline would extend from the borrow site to the southern tip of Tybee Island and extend northward as needed to complete the project.

The sand would come from a location known as "Borrow Area 4," which has been previously approved for use, is 7,000 feet southeast of the southern tip of Tybee Island, and is part of an ebb tidal delta. Borrow Area 4 was originally authorized as 298 acres but was expanded to 723 acres in 2008 because the borrow holes used for previous nourishments were not filling with sand suitable for beach nourishment. The exact portion of Borrow Area 4 that would be used for the upcoming nourishment is within a portion of the expanded Borrow Area 4 that was not mined previously. Movement to a new location is necessary because the location mined in 2008 did not fill with beach compatible sand.

On April 10, 2008, NMFS provided EFH conservation recommendations for the 2008 nourishment event, and those recommendations focused on mining the borrow area selectively to reduce the amount of silt

and shell placed on the beach and monitoring the beach and borrow areas for impacts to fishery habitat. In response, the Savannah District added a monitoring plan to the 2008 project, and the Savannah District had the South Carolina Department of Natural Resources (SCDNR) conduct the monitoring. EA Section 4.18 and EFH Assessment Section 6.0 summarize the results as:

Borrow area monitoring

- The content of fine silts and clays as well as finer silts increased in the borrow area relative to an undredged reference site and remained elevated one year after.
- Infaunal communities changed significantly following dredging but may be a product of seasonal changes more so than dredging.
- Biological communities changed the greatest during the six and twelve months post-dredging period, rather than immediately after dredging in the borrow area.
- The borrow area amphipod community, which normally responds quickly in a negative manner to dredging, exhibited very little change immediately after dredging and decreased in the six and twelve month survey.
- Abundance of opportunistic polychaete worms (mostly deposit feeders) increased in the borrow area while polychaetes indicative of a developed community (mostly predatory and deep burrowing species) decreased.

Beach monitoring

- Beach sediment characteristics changed very little after nourishment, supporting the findings that the borrow area sediments used were of a good match to existing beach sediments.
- Little evidence was found that ghost crab populations decreased significantly in the nourished segments compared to un-nourished reference sites.
- Data suggested that adult ghost crabs avoided the areas of active nourishment and successfully recolonized the affected beach system afterward.
- A decline in juvenile ghost crabs was evident across the entire beach system though adult populations remained relatively stable.
- The small size of Tybee Island made it difficult to distinguish significant changes in ghost crab populations.
- Bean clam densities declined during nourishment.
- There was low recruitment of juvenile clams to the nourished areas during the post-nourishment monitoring period.
- During 2010 a mass mortality of bean clams and other infaunal bivalves occurred at beaches along South Carolina and Georgia. However, the study could not definitively attribute the decline to the beach nourishment.
- Declines in the bean clams may also have affected ghost crab recruitment as the clam is one of the major prey sources.

Essential Fish Habitat in the Project Area

In general, the descriptions in the EFH Assessment are adequate but need considerable updating to use current species names, to reflect amendments to fishery management plans that altered EFH designations, and to incorporate updated EFH source documents provided by the Northeast Fisheries Science Center for bluefish and summer flounder (available at *www.nefsc.noaa.gov/nefsc/habitat/efh/*) and the *Fishery Ecosystem Plan of the South Atlantic Region* developed by the South Atlantic Fishery Management Council (available at *www.safmc.net*). NMFS would be happy to work with the Savannah District on these updates so that future uses of the information are complete.

Impacts to Essential Fish Habitat
NMFS is concerned Borrow Area 4 is not filling with sand and, instead, is filling with mud that appears to be altering the benthic community and possibly the forage value for fishes that feed near the inlet. SCDNR reports similar findings at the Folly Beach borrow site (Bergquist et al. 2008, 2009), which is also near a coastal inlet. The sediment composition of the Folly Beach borrow site shifted from sand to fine grain silts and mud, and this change has persisted for six years post construction. While Borrow Area 4 was monitored for only one year after the 2008 nourishment event, it is reasonable to assume the changes to Borrow Area 4 have persisted due its history and similar inlet location and dredge cut depth relative to those at Folly Beach. This sediment shift is consistent with changes documented in other borrow areas excavated deeper than one meter by hydraulic dredge and located close to a sources of fine terrigenous and estuarine sediments, such as tidal rivers (Bergquist and Crowe 2009). Because infaunal communities are tied to the sediments within which they live, the communities also changed coincident with the dredging and had not recovered by the end of the monitoring effort.

SCDNR's reports to the Savannah District recommended (Bergquist et al. 2010a, 2010b): 1) minimization of borrow pit depths located within the potential influence of major tidal inlets or rivers such as the Savannah River, 2) hydrologic and sediment transport modeling studies be done prior to borrow pit dredging to improve the likelihood of sustainable use of borrow areas, 3) continuation of the monitoring of the benthic environment within the borrow area and perform thorough vibracore surveys of this borrow area if it is to be reused in future nourishment projects, 4) additional pre-construction project coordination so that borrow area monitoring is performed at more than one time prior to dredging, and 5) improved record-keeping of project statistics to increase information compatibility and future management decisions.

Conservation Recommendations
Section 305(b)(4)(A) of the Magnuson-Stevens Act requires NMFS to provide EFH conservation recommendations when an activity is expected to adversely impact EFH. Based on this requirement, NMFS provides the following:

Essential Fish Habitat Conservation Recommendations

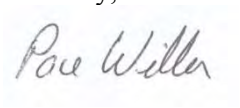
- The Savannah District shall limit the dredging to depths likely to fill with beach compatible sand.
- The Savannah District shall monitor the borrow area and surf zone in a manner similar to the 2008 study.

In accordance with Section 305(b)(4)(B) of the Magnuson-Stevens Act and its implementing regulations at 50 CFR 600.920(k), the Savannah District is required to provide a written response to the EFH conservation recommendations within 30 days of receipt. The response must include a description of measures to be required to avoid, mitigate, or offset the adverse impacts of the proposed activity. If the Savannah District's response is inconsistent with the EFH conservation recommendations, the District must provide a substantive discussion justifying the reasons for not implementing the recommendations. If it is not possible to provide a substantive response within 30 days, the Savannah District Corps should provide an interim response to NMFS, to be followed by the detailed response. The detailed response should be provided in a manner to ensure that it is received by NMFS at least ten days prior to final approval of the action.

Finally, in accordance with section 7 of the Endangered Species Act of 1973, as amended, it is the responsibility of the lead federal agency to review and identify any proposed activity that may affect endangered or threatened species and their habitat. Determinations involving species under NMFS jurisdiction should be reported to our Protected Resources Division at the letterhead address.

We appreciate the opportunity to provide these comments. Please direct related correspondence to the attention of Ms. Jaclyn Daly-Fuchs at our Charleston Area Office. She may be reached at (843) 762-8610 or by e-mail at Jaclyn.Daly@noaa.gov.

Sincerely,



/ for

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

cc:

COE, Ellie.L.Covington@usace.army.mil
GADNR CRD, Karl.Burgess@gadnr.org
GADNR EPD, Jennifer.Welte@dnr.state.ga.us
SAFMC, Roger.Pugliese@safmc.net
EPA, Somerville.Eric@epa.gov
FWS, Karen_Mcgee@fws.gov
F/SER4, David.Dale@noaa.gov
F/SER47, Jaclyn.Daly@noaa.gov

Bergquist, D., S. Crowe, M. Levisen, R. VanDolah. 2008. Change and recovery of physical and biological characteristics of the borrow area impacted by the 2007 Folly Beach Emergency Renourishment Project. Final Report, prepared for the U.S. Army Corps of Engineers, Charleston District. 111 pages

Bergquist, D., S. Crowe, M. Levisen, and R. Van Dolah. 2009. Change and recovery of physical and biological characteristics of the borrow area impacted by the 2007 Folly Beach emergency renourishment project. Final Report, prepared by the South Carolina Marine Resources Research Institute, South Carolina Marine Resources Division, Charleston, South Carolina, for the U.S. Army Corps of Engineers, Charleston District. 70 pages

Bergquist, D. and S. Crowe. 2009. Using Historical Data and Meta-analyses to Improve Monitoring and Management of Beach Nourishment in South Carolina. Final Report, prepared by the South Carolina Marine Resources Research Institute, South Carolina Marine Resources Division for the South Carolina Department of Health and Environmental Control. 99 pages

Bergquist, D., Crowe, S., Cowan, J., and M. Levisen. 2010a. The 2008 Tybee Island Shore Protection Project: Responses of Sediment Composition and Dominant MacroInvertebrates to Nourishment. Final Report, prepared for the U.S. Army Corps of Engineers, Charleston District. 47 pages.

Bergquist, D., Crowe, S., Cowan, J., and M. Levisen. 2010b. The 2008 Tybee Island Renourishment Project: Physical and Biological Responses of the Borrow Area Habitat to Dredging. Final Report, prepared for the U.S. Army Corps of Engineers, Charleston District. 71 pages.

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
100 W. OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

REPLY TO
ATTENTION OF

Planning Division

FEB 2 7 2014

Ms. Jaclyn Daly-Fuchs
Fishery Biologist
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Habitat Conservation Division Southeast Regional Office
219 Fort. Johnson Road
Charleston, South Carolina 29412

Dear Ms. Daly:

The Savannah District, U.S. Army Corps of Engineers (District) received your analysis of our Essential Fish Habitat (EFH) assessment for the Tybee Island, Georgia, Shore Protection Project by letter dated January 22, 2014.

The District appreciates the National Marine Fisheries Service (NMFS) comments and conservation recommendations on the proposed project. The District will coordinate with NMFS to update current EFH fishery management plans and species information as we finalize the Environmental Assessment (EA).

Two EFH conservation recommendations were provided: (1) the District shall limit dredging to depths likely to fill in with beach compatible sediments, and (2) the District shall monitor the borrow area and surf zone in a similar manner to the 2008 study. The District acknowledges the borrow area is likely to fill in with fines and organics rather than beach compatible sands. We do not expect to reuse the same specific footprint for additional borrow in the future. The District does not concur with the recommendation to limit dredging in the borrow area to 1 meter. While there is some evidence in South Carolina (Bergquist, D. and S. Crowe. 2009) that limiting dredging depths could result in a borrow area filling with beach compatible material, a shallow excavation would substantially increase construction costs and provide uncertain environmental benefits. The same literature indicates that borrow areas located downdrift of sounds or major inlets may be more likely to fill in with fines. The borrow area to be used for this renourishment is located downdrift of the Savannah River Entrance Channel.

The District concurs with monitoring of the borrow area and surf zone, similar to that performed in 2008. We have begun discussions with the South Carolina Department of Natural Resources to perform this work.

If you have any additional comments, please provide them to Ms. Ellie Covington, Planning Division, Savannah District U.S. Army Corps of Engineers, 100 West Oglethorpe Avenue, Savannah, Georgia 31401. You may also contact Ms. Covington at (912) 652-5578 or email at Ellie.L.Covington@usace.army.mil.

Sincerely,

William G. Bailey

William G. Bailey
Chief, Planning Division
Savannah District

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESOURCES DIVISION

MARK WILLIAMS
COMMISSIONER

A.G. 'SPUD' WOODWARD
DIRECTOR

January 17, 2014

Ms. Ellie Covington
Planning Division, USACE
100 West Oglethorpe Avenue
Savannah, Georgia 31401-0889

RE: Consistency Determination for the 2015 Tybee Island Shore Protection Project, Chatham County

Dear Ms. Covington:

Staff of the Georgia Coastal Management Program (the Program), Georgia Department of Natural Resources' Coastal Resources Division (GDNR/CRD), and Georgia Department of Natural Resources' Wildlife Resources Division (GDNR/WRD) has reviewed your December 17, 2013 Public Notice of Availability of the Draft Environmental Assessment (DEA) and Findings of No Significant Impact (FONSI). We have also reviewed your December 20, 2013 letter and DEA (including appendices) for the 2015 Tybee Island Shore Protection Project located in Chatham County. The action proposes to place approximately 1,750,000 cubic yards of beach-compatible sand on approximately 3.5 miles of beach at Tybee Island within the limits of the Federal Project between November 1, 2015 and April 30, 2016.

Federal regulations allow the Program 60 days from receipt of a federal consistency determination for review and response rather than the 30 days requested in your December 20, 2013 letter [15 CFR 930.41(a)]. The Program intends to formally respond to the federal consistency determination on or before February 20, 2014. The State offers the following comments or concerns.

1. Section E.2.09 – Summary of Conditions to Minimize Potential Adverse Impacts: The project needs to be complete by April 30th. The 2008 BO allows for activities to extend beyond April 30 if certain reasonable and prudent measures are implemented. The State was adamant in our July 14, 2008 Federal Consistency Determination concurrence letter that work must be completed prior to April 30 and we remain adamant on that point. Any request to continue the project past April 30th will not be justified except under the most extreme of unavoidable events. As in 2008, the State will authorize the project to begin October 1st, one month early, to help ensure timely completion.
2. Section E.2.09 – Summary of Conditions to Minimize Potential Adverse Impacts: Tilling compacted areas is proposed immediately after completion and prior to the next 3 nesting seasons. The volume of sand being placed is larger during this renourishment cycle than in previous cycles since it is designed to last 9 years instead of 7 years. It is anticipated that it will take longer for sediments to sort out, which can lead to extended compaction periods. Based on past renourishment cycles, high compaction rates can be expected for 4 years following completion. The State recommends compaction testing and tilling immediately following completion and prior to the next 4 nesting seasons (2016-2019/2020).
3. Section E.2.09 – Summary of Conditions to Minimize Potential Adverse Impacts: All escarpments greater than 18" high and 100' long that form in the artificially constructed beach profile should be leveled prior to the sea turtle nesting season for 4 years following construction, whether or not the

escarpments are compacted. Escarpments that form in front of naturally occurring dunes outside of the renourishment template should not be leveled. Reference to compaction levels associated with escarpment leveling on page 21 of the DEA should be removed.

4. Sufficient funds should be set aside prior to commencement of the project to assure that tilling requirements will be accomplished in a timely manner.
5. Section E.3.08 – Borrow Area: Core samples indicate that the % shell by volume closely approaches our maximum guidelines of 15% (see attachment). Native Georgia beaches are generally less than 10% shell by volume. USACE beach sampling has shown samples as high as 29% shell by volume, which leads to compaction. The high shell content north of 6th street is likely a cumulative effect of multiple nourishment projects. The Biological Assessment should include a provision to monitor the cumulative effects of increasing shell content on sea turtle nesting. A mechanism to mitigate for high shell content should be addressed.
6. Provisions should be added to the DEA for removal or amelioration of sediments that do not meet the attached guidelines for beach-quality sand to guard against pockets of inferior material on the surface of the beach profile.
7. There is no proposal in the DEA to place sand fence to help build dune features as part of this renourishment project. Should the Corps' or the City of Tybee later add this feature, construction should follow GDNR guidelines that allow sea turtle access to nesting habitat and prevent the trapping of sea turtle hatchlings (see attacchment).

We would like a copy of all comments you receive during the public comment period and a copy of your responses to those comments. Our receipt of your response to comments prior to February 20, 2014 would aid in our timely review of the project. Please feel free to contact Jason Lee if you have technical questions or Kelie Moore if you have questions about the federal consistency process.

Sincerely,

B. Gane

Brad Gane
Ecological Services Section Chief

SW/km

Enclosures: Georgia Department of Natural Resources Guidelines for Beach Renourishment Projects
Georgia Department of Natural Resources Sand Fence Guidelines

cc: Jason Lee, GDNR/WRD
Bradley Smith, GDNR/EPD
Bill Wikoff, USFWS
Jaclyn Daly, NMFS
Eric Somerville, EPA

Georgia Department of Natural Resources
Guidelines for Beach Nourishment Projects

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
WILDLIFE RESOURCES DIVISION

The protection and maintenance of nesting habitat is considered a high priority in the USFWS/NMFS Recovery Plan for the U.S. Population of the Loggerhead Turtle *Caretta caretta*. The purpose of these guidelines is to minimize the affects of beach nourishment projects on sea turtle reproduction and to ensure nourished beaches are compatible with native beaches.

The following are general guidelines for beach nourishment projects:

Construction- Construction shall be allowed outside the loggerhead turtle nesting and hatching season (May 1-October 31).

Sediment Grain Size- Fill material shall be free of construction debris, rocks, or other foreign matter and shall not contain, on average, greater than 10% fines (i.e. silt and clay; passing through a #200 sieve; approx. .075 mm) and shall not contain, on average, greater than 5% course gravel or cobbles (retained by #4 sieve; approx 4.5 mm). Sand grain size on Georgia beaches is generally between 0.15 and 0.3 mm.

Sediment Composition- The sediment composition of Georgia beaches is generally fine-grained silica sand (>90%) with very little fragmented shell. Shell content should remain below 15% of total volume.

Sediment Color- Sediment color should be between 10yr6.5/1 and 10yr7.0/1 on the Munsell soil color chart.

Compaction- Sand compaction should be measured at a maximum of 500 ft. intervals along the fill area. Compaction will be measured at 3 stations along three transects corresponding to the landward, middle and seaward portion of the fill berm. At each measurement station, a cone penetrometer shall be pushed to depths of 6, 12, and 18 inches three times (3 replicates) and the compaction readings will be averaged to produce a final reading at each depth for each station. If the average value for any depth exceeds 500 cpu for any 2 or more adjacent stations, than that area will be cross-tilled from the high tide wave rush to the seaward toe of the dune prior to May 1. If a dune feature is constructed as part of the project, the dune feature should be tested for compaction prior to the planting of vegetation or sand fence construction. If compaction readings are greater than 500 cpu at any of the test depths (6", 12" 18") for 2 consecutive stations, the dune feature should be tilled prior to May 1.

Beach Profile- The constructed beach profile should be gradually sloping rather than an elevated flat terrace to reduce scarping. The beach should be monitored for scarping prior to the nesting season. Escarpments in excess of 18" extending more than 100 ft should be mechanically leveled to natural beach contour prior to May 1.

Sand Fence Construction- Sand fence construction will be in accordance with GADNR guidelines. GADNR Sand Fence Guidelines are designed to allow marine turtle access to nesting habitat and prevent trapping of marine turtles as they return to the sea following nesting.

GEORGIA
Department of Natural Resources
Coastal Resources Division

Georgia Department of Natural Resources
Sand Fence Guidelines

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
WILDLIFE RESOURCES DIVISION

Sand fencing is used extensively along the Atlantic Coast to build and stabilize dunefields and control human access to the beach. Unfortunately, some sand fence configurations have been shown to restrict or inhibit sea turtle nesting. The **Management Plan for the Protection of Nesting Loggerhead Sea Turtles and their Habitat in Georgia** (II, B, 2, C) stipulates that "fencing must be placed so as not to deter turtles' access to nesting areas, and arranged to prevent trapping nesting turtles". The following sand fence guidelines are designed to provide good dune building and stabilization performance, while minimizing impacts to sea turtles.

Standard sand fencing consists of 4' wooden slats wired together with spaces between the slats. Woven fabric type fencing has also been successfully used in dune restoration projects. However, it is important that fabric fencing have a 40% to 60% open to closed space ratio to be effective. Fabric fencing is susceptible to ultraviolet degradation causing it to sag and lose its original shape. With sufficient maintenance, this problem may be avoided.

Guidelines for Sand Fence Placement:

1. Installation and repositioning of sand fences shall be conducted outside the marine turtle nesting season (May 1 – October 15) unless approved by the USFWS or GADNR Nongame-Endangered Wildlife Program.

2. Sand fence shall be installed in a temporary manner in accordance with the attached conceptual drawing. Configuration 1 consists of 10 foot sections of fence spaced at a minimum of 10 feet on a diagonal alignment to the shoreline (facing the prevailing wind). Configuration 2 consists of two 10 foot sections placed in an "open V " shape with the wider end facing the shoreline. Minimum space between ends of the "V" is 10 feet, and minimum width between the close ends of the "V" is 7 feet. For both configurations, the approximate angle of the fence to the shoreline is 45 degrees.

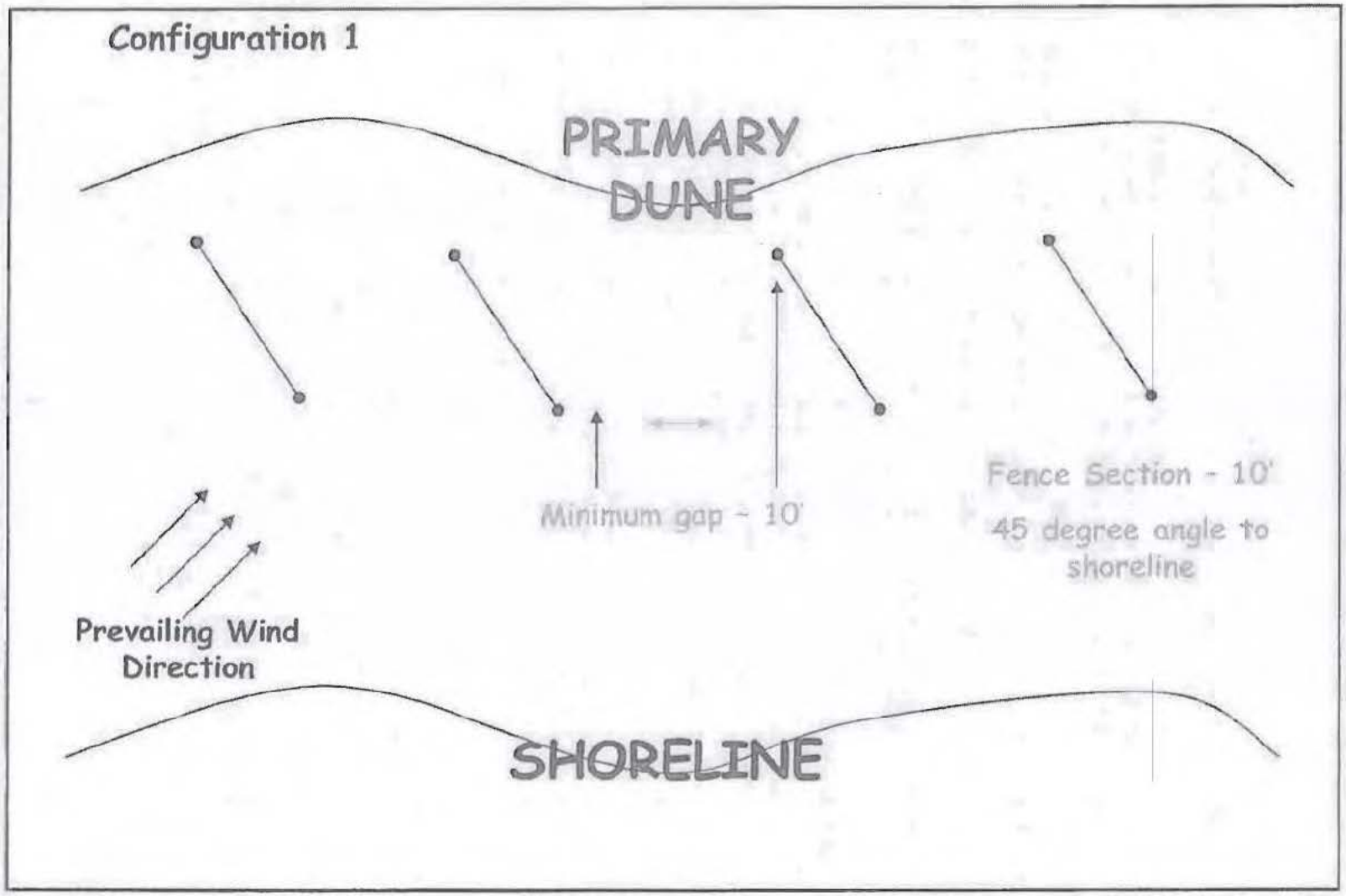
3. Sand Fence shall not be placed in the inter-tidal zone. Sand Fence must be placed above the highest spring high tide line, preferably adjacent to the primary dune.

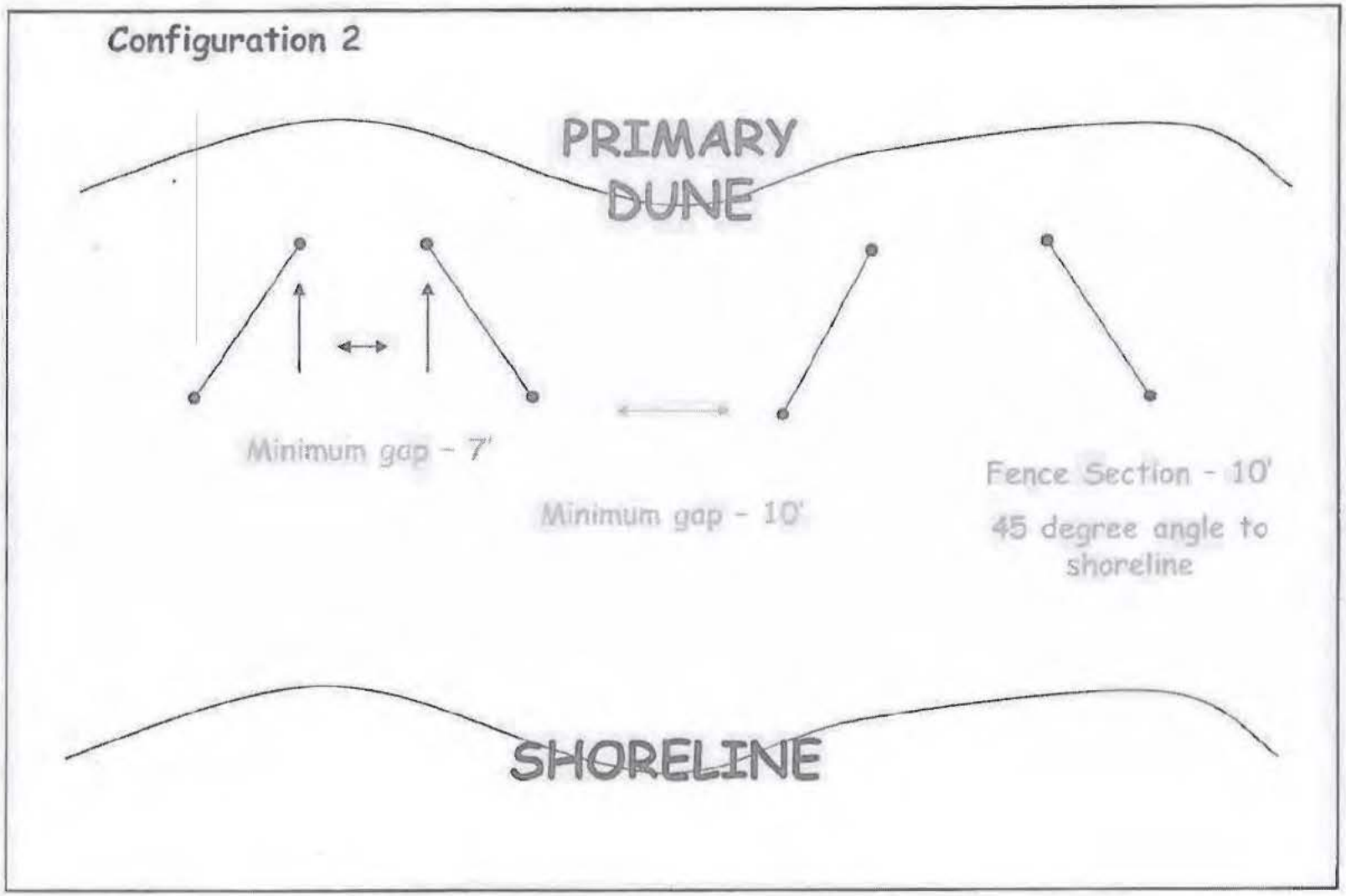
4. Sand Fence shall not be placed within 7' of a beach scarp.

5. Sand Fence shall not be placed in front of an existing fence until the existing fence is completely buried.

6. Sand fences shall not be placed to control pedestrian traffic seaward of the secondary dunes. A post and rope fence may be used to restrict pedestrian access without impacting nesting marine turtles.

7. If fence material is damaged, debris must be removed from the beach area by the owner in an expeditious manner.


Configuration 1
PRIMARY DUNE
Minimum gap - 10'
Fence Section - 10'
45 degree angle to shoreline
Prevailing Wind Direction
SHORELINE


Configuration 2
PRIMARY DUNE
Minimum gap - 7'
Minimum gap - 10'
Fence Section - 10'
45 degree angle to shoreline
SHORELINE

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
100 W. OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

REPLY TO
ATTENTION OF

Planning Division

FEB 18 2014

Mr. Brad Gane
Ecological Service Section Chief
Georgia Department of Natural Resources
Coastal Resources Division
One Conservation Way
Brunswick, Georgia 31520

Dear Mr. Gane:

The Savannah District U.S. Army Corps of Engineers (District) received your letter regarding the Tybee Island, Georgia, Shore Protection Project and request for federal consistency by letter dated January 17, 2014.

The District appreciates the Georgia Department of Natural Resources Coastal Resources Division (GDNR/CRD) comments and recommendations on the proposed project and public comments. Seven comments/recommendations were received.

1) **No work will occur beyond April 30.** The District *concurs* with this recommendation and is enclosing a letter from the project manager to ensure construction does not occur during sea turtle nesting season. Additionally no work will begin prior to October 1 without written permission from CRD or Wildlife Resources Division (WRD).
2) **Compaction testing and tilling shall be conducted for 4 years after construction prior to sea turtle nesting season.** The District *concurs* that tilling shall occur immediately following construction and that compaction testing and tilling, if appropriate, will be conducted for 4 consecutive years prior to May 1 in advance of sea turtle nesting season.
3) **Escarpments greater than 18 inches high and 100 feet long in the template shall be leveled prior to sea turtle nesting season for 4 years following construction.** Escarpments outside of the template shall not be destroyed. The District *concurs* that any escarpments exceeding the dimensions referenced above, regardless of compaction, will be leveled and any escarpments occurring outside of the template will be left in place. The final environmental assessment will be updated to reflect this agreement.

4) **Guaranteed funding for 4 years of tilling shall be set aside by the City.** The District and City *concur* with this recommendation and a letter from the City is enclosed to ensure funding is secured.
5) **The borrow area may have high percent shell content and mitigation measures should be in place in the event material exceeding 15% shell is placed.** The District does *not concur.* Testing conducted in the borrow area shows shell percentage to be less than 15%. Compaction testing will be conducted for 4 years prior to turtle nesting season. The results of this testing will determine whether or not tilling should take place in order to mitigate for potential high shell content.
6) **A mitigation plan should be added to the EA in the event inferior quality beach material is placed.** The District does *not concur.* Testing shows the borrow area material to be acceptable for beach placement (less that 10% shell content). The same approved borrow area that was used in 2008 will be used during this contract. Sediment will be taken from areas that were undisturbed during the 2008 renourishment. The 2008 sediments were of high quality for beach renourishment and no evidence of inferior material was recorded.
7) **Sand Fencing.** The District *concurs* there is no sand fencing planned as part of this project. If sand fencing is considered at a later date CRD will be consulted. The District appreciates CRD including GDNR sand fencing guidelines. A copy of all public comments was sent to CRD on January 23, 2014.

Once again we look forward to working with GADNR on this project and appreciate CRD and WRD's timely responses and comments. If you need additional information, please contact Ellie Covington at (912) 652-5578 or by e-mail Ellie.L.Covington@usace.army.mil.

Sincerely,

William G. Bailey

William G. Bailey
Chief, Planning Division
Savannah District

Enclosures

CITY OF TYBEE ISLAND

February 6, 2014

Spencer Davis
Project Manager
U.S. Army Corps of Engineers
100 W. Oglethorpe Avenue
Savannah, GA 31401

RE: Request by GADNR concerning tilling of the beach

Mr. Davis,

It is the city's understanding that the GADNR has requested financial assurances for the compaction testing and tilling that would be performed, if needed, prior to the 4 nesting seasons following completion of construction.

Per the O & M agreement the first compaction testing/tilling event is paid for as part of the construction contract for the 2014 renourishment. The three subsequent years after renourishment the Corps and GADNR staff would perform the proper compaction tests in early April of each season. The City of Tybee Island has arranged for a contractor to till the beach at the cost of $7,985 each year as needed pending the outcome of the compaction tests.

In the past, GADNR staff monitored the tilling to insure it was accomplished according to their direction.

With the understanding that the dredging contractor will be responsible for tilling during the first season post renourishment, the city will reserve each fiscal year enough funds to accomplish an annual pre-turtle nesting tilling for the three year post renourishment. The city will conduct said tilling after notification of the GADNR in late March or early April that the compaction level of the beach warrant the tilling.

Sincerely,

Jason Buelterman
Mayor

P.O. Box 2749 – 403 Butler Avenue, Tybee Island, Georgia 31328-2749
(866) 786-4573 – FAX (866) 786-5737
www.cityoftybee.org

From: Covington, Ellie L SAS
To: Covington, Ellie L SAS
Subject: tybee turtle window (UNCLASSIFIED)
Date: Tuesday, February 18, 2014 8:39:16 AM

Classification: UNCLASSIFIED
Caveats: NONE

-----Original Message-----
From: Davis, Spencer W SAS
Sent: Thursday, February 13, 2014 4:21 PM
To: Covington, Ellie L SAS
Cc: McIntosh, Margarett G (Mackie) SAS
Subject: RE: tybee turtle window (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Ellie,

As previously discussed, no work on the Tybee Beach Renourishment will be completed beyond 30 April or before 1 November without written permission from GADNR-WRD.

Thank you.

Regards,
Spencer

Spencer W. Davis, MBA, MSc
Project Manager, USACE
Civil Works Programs & Project Management
O: 912.652.5195
C: 912.660.3165

Classification: UNCLASSIFIED
Caveats: NONE

Georgia Department of Natural Resources
Environmental Protection Division
2 Martin Luther King Jr. Drive, Suite 1456, Atlanta, Georgia 30334
Judson H. Turner, Director
(404) 656-4713

FEB 17 2014

Ms. Ellie Covington
U.S. Army Corps of Engineers
Planning Division
100 West Oglethorpe Avenue
Savannah, Georgia 31401-0889

Re: Water Quality Certification
2015 Tybee Island Shore Protection Project
Savannah River Basin
Chatham County

Dear Ms. Covington:

Pursuant to Section 401 of the Federal Clean Water Act, the State of Georgia issues this certification to the U.S. Army Corps of Engineers, an applicant for a federal permit or license to conduct an activity in, on or adjacent to the waters of the State of Georgia.

The State of Georgia certifies that there is no applicable provision of Section 301; no limitation under Section 302; no standard under Section 306; and no standard under Section 307, for the applicant's activity. The State of Georgia certifies that the applicant's activity will comply with all applicable provisions of Section 303.

This certification is contingent upon the following conditions:

1. All work performed during construction will be done in a manner so as not to violate applicable water quality standards.

2. No oils, grease, materials or other pollutants will be discharged from the construction activities which reach public waters.

3. The applicant must notify Georgia EPD of any modifications to the proposed activity.

This certification does not relieve the applicant of any obligation or responsibility for complying with the provisions of any other laws or regulations of other federal, state or local authorities.

It is your responsibility to submit this certification to the appropriate federal agency.

Sincerely,

Judson H. Turner
Director

cc: Mr. Eric Somerville, US EPA
Mr. Bill Wikoff, US FWS
Ms. Kelie Moore, CRD
Mr. Jason Lee, WRD
Ms. Jaclyn Daly, NMFS

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESOURCES DIVISION

MARK WILLIAMS
COMMISSIONER

A.G. 'SPUD' WOODWARD
DIRECTOR

February 20, 2014

Ms. Ellie Covington
USACE Planning Division
100 West Oglethorpe Avenue
Savannah, Georgia 31401-0889

RE: Consistency Determination for 2015 Tybee Island Shore Protection Project, Tybee Island, Chatham County, GA

Dear Ms. Covington:

Staff of the Georgia Coastal Management Program (the Program), Georgia Department of Natural Resources' Coastal Resources Division (GDNR/CRD), and Georgia Department of Natural Resources' Wildlife Resources Division (GDNR/WRD) has reviewed the December 17, 2013 Public Notice of Availability of the Draft Environmental Assessment (DEA) and Findings of No Significant Impact (FONSI). We have also reviewed your December 20, 2013 letter and DEA (including appendices) for the next Tybee Island Shore Protection Project located in Chatham County. The action proposes to place approximately 1,750,000 cubic yards of beach-compatible sand on approximately 3.5 miles of beach at Tybee Island within the limits of the Federal Project between November 1st, 2015 and April 30th, 2016.

The 2008 Biological Opinion allows for activities to extend beyond April 30th if certain reasonable and prudent measures are implemented. The State requires that renourishment activities are concluded by April 30th in any given year and would only extend that date under the most extreme of unavoidable circumstances. Work may begin one month earlier, on October 1st, to help ensure timely completion.

The US Army Corps of Engineers is responsible for tilling the entire construction template to a depth of 36" immediately following completion of the project. Compaction testing will then be conducted by GDNR Wildlife Resources Division prior to turtle nesting season for three years, beginning at least one full year after completion of the project. The City of Tybee, acting as the non-federal project sponsor, will till all compacted areas identified during those three years, at a minimum. The City of Tybee will also level all escarpments greater than 18" high and 100' long that form within the artificially constructed beach profile whether or not they are compacted.

Core samples of the areas north of 6th street indicate the shell hash content is approaching our maximum guidelines of 15% by volume and has increased during the life of the Project. This may indicate a previously unidentified cumulative impact. We recommend that the Corps

modify their biological assessment (BATES) to include monitoring this aspect for potential impacts on nesting sea turtles and incorporate an adaptive management mechanism to mitigate this impact if warranted.

The Mineral License issued by the State Property Commission in 1999 and modified in 2008 remains valid until 2024 for removal of up to 1.8 million cubic yards per cycle from the offshore borrow area. Any change to the scope of work for this project that increases removal of material from the borrow area to above 1.8 million cubic yards per cycle will necessitate a modification to the mineral license as well as a new federal consistency determination concurrence letter.

The Program concurs that this project has been designed to comply with the enforceable policies to the maximum extent practicable. Should the project become viable prior to November 1, 2015 the Program remains in concurrence and construction may begin without further review. Please feel free to contact me or Kelie Moore if we can be of further assistance.

Sincerely,

A.G. "Spud" Woodward
Director

SW/km

cc: Jason Lee, GDNR/WRD
Bradley Smith, GDNR/EPD
Bill Wikoff, USFWS
Jaclyn Daly, NMFS
Eric Somerville, EPA

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION

MARK WILLIAMS
COMMISSIONER

DR. DAVID CRASS
DIVISION DIRECTOR

January 3, 2014

William G. Bailey
Chief, Planning Division
Savannah District, Corps of Engineers
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3640
Attn: Julie Morgan, Archaeologist

RE: Tybee Island Shore Protection Project, 2012
Chatham County, Georgia
HP-121221-002

Dear Mr. Bailey:

The Historic Preservation Division (HPD) has reviewed the draft report entitled *Remote Sensing Survey of 300-foot Buffer and Diver Identification of Magnetic Anomalies, Tybee Island Beach Erosion Control Project, Chatham County, Georgia 2015 Renourishment,* prepared by Panamerican Consultants, Inc. and dated November 2013. Our comments are offered to assist the US Army Corps of Engineers in complying with the provisions of Section 106 of the National Historic Preservation Act (NHPA).

Based on the information contained in the report, HPD concurs with the methods, findings, and conclusions contained in the report. However, HPD would like to note a few minor corrections that should be included in the final report:

- Citation: (Garrison et. al. 2012) within the text on pages 5, 6, 8, 14, etc. is not fully referenced in the "VI. REFERENCES CITED" section
- The word "coastal" is misspelled on page 36, line 2
- The word "no" should be removed from page 45, 2nd to last line
- The header in the "IV. INVESTIGATIVE FINDINGS" section mistakenly reads "Introduction"

Please submit one electronic copy of the final report to HPD. Please ensure the electronic copy is an optical character enabled .pdf. For your information, the electronic file will be sent to the Georgia Archaeological Site File at the University of Georgia, Athens for permanent retention.

Please refer to project number **HP-121221-002** in any future correspondence concerning this project. If we may be of further assistance, please do not hesitate to contact Bryan Tucker, State Archaeologist, at (404) 295-1090 or bryan.tucker@dnr.state.ga.us, or Jennifer Dixon, Environmental Review Specialist, at (404) 651-6546 or Jennifer.dixon@dnr.state.ga.us.

Sincerely,

Karen Anderson-Cordova
Program Manager
Environmental Review and Preservation Planning

KAC:jad

Cc: Chris McCabe, HPD Deputy Underwater Archaeologist

Covington, Ellie L SAS

From: P Bowlegs [pbowlegs@outlook.com]
Sent: Friday, January 24, 2014 12:41 PM
To: Covington, Ellie L SAS
Subject: [EXTERNAL] Alabama-Quassarte Tribal Town.

Ms. Covington,

Hello. I apologize for the delayed response from my department. I am the new Historic Preservation Office and have been sorting through several months of unanswered mail and emails.

Currently the tribe is not concerned with this project or any others in the State of Georgia. There is no documentation supporting the fact that the tribe resided in Georgia, therefor, the tribe would not be interested.

Thank you.

Pare Bowlegs

Albany
Atlanta
Brussels
Denver
Los Angeles
Miami
New York

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303 Peachtree Street, NE • Suite 5300
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Seoul
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R. TODD SILLIMAN
Direct Phone: 404.527.4914
Direct Fax: 404.527.4198

EMAIL ADDRESS
tsilliman@mckennalong.com

January 17, 2014

VIA BY EMAIL AND UPS

U.S. Army Corps of Engineers
Savannah District
Planning Division
Attn: Ms. Ellie Covington
100 West Oglethorpe Ave.
Savannah, GA 31401-0889

Re: Draft Environmental Assessment and Draft Finding of No Significant Impact for Proposed 2015 Tybee Island Beach Renourishment

Dear Sir or Madam:

On behalf of Ocean Plaza Beach Resort on Tybee Island, Georgia, I provide the following comments regarding the U.S. Army Corps of Engineers' Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for the proposed 2015 beach renourishment project on Tybee Island, Georgia.

The EA and FONSI are grossly deficient because they fail to take into account that adding sand to Tybee Island beaches, when not accompanied by an active and ongoing dune management program, results in (1) a poorly formed and dissected primary dune field and formation of massive sand mounds on the Tybee Island beach between Fourteenth Street and the Tybee Island Pier that block views of the beach and ocean, degrade aesthetics, inhibit recreation, negatively affect tourism, and provide no storm protection or habitat for nesting sea turtles; (2) formation of large sand mounds that are an intrusion and nuisance on lands adjacent to the Back River; and (3) formation of a large sand bar in the Tybee Inlet that presents a human safety hazard and is a barrier to navigation.

The Corps has a legal obligation to take into account these adverse consequences of past renourishments and consider additional alternatives, including the alternative to remove the harmful sand mounds, redistribute the sand to eroded areas and construct and maintain a new

primary dune ridge and back-dune swale system, and relocate and install structures to protect the new dune system. The Corps should consider these actions, as well as dredging the sand bar in Tybee Inlet and applying that sand to Tybee Island beaches, in lieu of the proposed action. The Corps should include as part of any renourishment activity an active and ongoing dune management program that remedies the detrimental long-term effects of past beach renourishments and prevents them from recurring.

Background

Ocean Plaza Beach Resort

Ocean Plaza Beach Resort on Tybee Island, Georgia ("Ocean Plaza") has been owned and operated by the same family for the past 45 years. Ocean Plaza sits on five acres within the downtown commercial district, along Strand Avenue, between Fourteenth and Fifteenth Streets. The property features 475 linear feet of beachfront property. This parcel of land has been occupied by a hotel for nearly 125 years, dating back to the opening of Hotel Tybee in 1889, making it the second-longest continuously operating hotel on the Georgia coast—second only to the Jekyll Island Club Hotel, which opened in 1886. Touted as "Savannah's Beach Resort," Ocean Plaza has 204 guestrooms, a restaurant and bar, a conference center, two swimming pools, a gift shop, and other amenities. It is the largest hotel on Tybee Island. The hotel employs 100 people, and 100,000 people from all over the world visit Ocean Plaza each year to enjoy the nearby beaches.

Because Ocean Plaza is a beachfront hotel located in the primary tourist and commercial area of Tybee Island, views and access from the hotel to the beach and ocean are vital to it. Also extremely important to Ocean Plaza and the economy of Tybee Island in general is the availability of aesthetically-pleasing beach areas on which visitors can relax, enjoy the environment, and engage in recreational activities.

Problems Created by Past Beach Renourishments

Over the past decade, a series of huge sand mounds have formed along a 900-foot stretch of Tybee Island's oceanfront between Fourteenth Street and the Tybee Pier. A photograph taken on January 17, 2014 of the landward side of one of these mounds located near Fourteenth Street is attached as Exhibit 1. These pyramid-shaped mounds are extremely tall (some up to 40 feet in height) and wide. At the same time, a large sand bar has formed in the Tybee Inlet, and large accumulations of sand have formed on land along the Back River. The source for the large mounds and sand bar is sand that the Corps has dredged and deposited on Tybee Island's beach. That sand has migrated southward, and, instead of forming natural sand dunes, has collected in these unwanted areas.

Dr. George Oertel, a coastal marine geologist specializing in hydrodynamic and morphodynamic investigations of barrier islands and whose work is cited extensively in the Corps' EA, has recently examined the condition of sand dunes and beaches on Tybee Island and prepared a written report of his findings. Dr. Oertel's report, entitled Conceptual Plan for Correcting and Managing Dune Instability Along Commercial Beaches (January 2014)("Oertel Report"), is attached hereto as Exhibit 2. Dr. Oertel concludes that past beach renourishments, without proper management of the deposited sand, have caused the massive sand mounds to form in the area of the Tybee Island beach between Fourteenth Street and the Tybee Pier. Oertel Report at 3, 8, 10. Dr. Oertel concludes that due to poor dune management, breaches form in the primary dune field, resulting in scour basins and massive mounds and the landward end of the scour basins. These mounds do not resemble a normal, naturally-formed sand dune system. *Id.* at 5. These mounds serve no benefit and instead are detrimental to the functions that dune systems normally provide. *Id.* at 13. Unlike natural dunes, which form in continuous ridges and may be some 10 feet in height, these mounds do not share sand with the "dry" beach, grow uncontrolled, and do not mitigate erosion from the "dry" beach; are so tall that they block views of the beach and ocean; are unsightly, degrade aesthetics, and negatively impact tourism and businesses located behind them in particular; do not provide effective storm protection; and do not provide habitat for nesting sea turtles. *Id.*

Dr. Oertel concludes that future beach renourishments, if done without measures to mitigate the effects of past renourishments and prevent such problems from reoccurring, will not help restore a well-formed dune system or ameliorate the harmful effects of these massive sand mounds, but instead will worsen the problem. *Id.* at 10. Dr. Oertel therefore proposes a plan that would include the following: (a) remove the existing sand mounds between Fourteenth Street and the Pier; (b) construct a new primary dune ridge seaward of the existing mounds and stabilize it with vegetation such as sea oats; (c) construct and maintain a back-dune swale to protect the primary dune field; (d) correct improperly constructed dune crossings; (d) relocate structures on the beach that disturb proper development and maintenance of the dune system; and (e) install (with great care to location) snow fencing where appropriate. *Id.* at 13-16.

In addition to the harmful sand mounds between Fourteenth Street and the Tybee Island Pier, past renourishments have caused a large sand bar to develop at the mouth of Tybee Inlet/Back River. EA at 23; Oertel Report at 6. Beach visitors are attracted to the sand bar during low tides and then find themselves stranded on it when the tide turns. This has caused several deaths by drowning and necessitated numerous rescues in recent years. News reports of these incidents and the public safety hazard created by the sand bar are attached hereto as Exhibit 3. A dune management program would help control the migration of sand to the sand bar, and dredging of the sand bar would provide an alternative source of sand for beach renourishments and eliminate the public safety hazard.

Past renourishments also have caused accumulations of sand along the shore of the Back River. Some property owners have experienced large sand mounds piling up in their back yards,

obscuring their views, and even threatening to engulf their homes. Photographs of some of these sand mounds along the Back River are attached as Exhibit 4. The first three photographs were taken in 2006 at the property located at 1805 Chatham Avenue on the Back River just up from the inlet and within the area of the Back River that the Corps has proposed for renourishment. The last two photographs attached as Exhibit 4 were at 1607 Chatham Avenue (in 2013), further upstream from the proposed renourishment area and close to the Back River Boat Ramp.

Comments on Draft EA

The Corps' Legal Obligations Under NEPA

NEPA requires every federal agency to prepare an environmental impact statement (EIS) before undertaking any "major federal action significantly affecting the quality of the human environment." 42 U.S.C. § 4332(C). An EIS is a "detailed statement by the responsible official" of an agency that discusses the environmental impact of the proposed action, adverse environmental effects, alternatives to the proposed action, "the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity," and "any irreversible or irretrievable commitments of resources that would be involved in the proposed action should it be implemented." *See* 42 U.S.C. § 4332(C). "By focusing the agency's attention on the environmental consequences of a proposed project," the requirement to prepare an EIS "ensures that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). The EIS also serves a larger informational role, however, by providing a springboard for public comment. *Id.*

Federal NEPA regulations require preparation of an EA to determine whether an Environmental Impact Statement ("EIS") is required. The primary purpose of an EA is to identify potential environmental effects and to determine whether such effects would be significant. If the agency concludes on the basis of the EA that the effects will not be significant, the agency issues a FONSI. Otherwise, the agency is required to prepare an EIS.

For a federal agency's decision not to perform an EIS to be legally justified, the agency must satisfy the following criteria:

> First, the agency must have accurately identified the relevant environmental concern. Second, once the agency has identified the problem it must have taken a "hard look" at the problem in preparing the EA. Third, if a finding of no significant impact is made, the agency must be able to make a convincing case for its finding. Last, if the agency does find an impact of true significance, the preparation of an EIS can be avoided only if the agency finds that changes or safeguards in the project sufficiently reduce the impact to a minimum.

Hill v. Boy, 144 F.3d 1446, 1450-51 (11th Cir. 1998). A FONSI that is based upon a flawed assumption that caused the agency to underestimate the impact of the action cannot stand; if this occurs, the agency must correct the assumption and redo its NEPA review. *Id.* If the administrative record does not support the agency's failure to perform an EIS, a court will remand the matter to the agency to take a "hard look" at the issue and either perform an EIS or "make a convincing case in support of a finding of no significant impact." *Id.* Moreover, federal agency action must be reversed whenever it has "relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *Miccosukee Tribe of Indians of Fla. v. U.S. Fish & Wildlife Serv.*, 566 F.3d 1257, 1263 (11th Cir. 2009).

Deficiencies of the EA and FONSI

1. Ignorance of Malformed Sand Dunes in Commercial Beach Area and Back River: The FONSI and EA upon which it is based are seriously flawed and deficient because they ignore the fact that past renourishments have caused, and the proposed action will exacerbate, creation of harmful sand mounds along approximately 900 feet of commercial beach between Fourteenth Street and the Pier, and along the Back River. The Corps' neglect of this important aspect of the problem renders its assessment of the impact of the renourishment on recreation, aesthetics, economics, public safety, threatened and endangered species, vegetation, and other factors, incorrect and grossly inadequate.

The EA does not even mention the large sand mounds that have formed. In fact, the EA reflects complete ignorance of their existence. The EA does not discuss the presence of sand dunes along Tybee Island's commercial beach, stating, "Dune areas still exist mainly on the central and north end portions of the beach." EA at 22. Further, the EA states erroneously that there "are no dunes on the Back River." *Id.* It is evident from these statements and the complete failure to mention the harmful accumulations of sand on Tybee Island that the Corps has not considered them in its assessment of the effects of the proposed action.

2. Assessment of Recreation Benefits: Because it does not take into consideration the large sand mounds south of Fourteenth Street and along the Back River, the EA erroneously concludes that the renourishment will only benefit, and will not have any detrimental effects to, recreation. EA at 16, 34. The EA bases this conclusion on its finding that the renourishment in the long-term will create more beach usable for recreation. But the large sand mounds have significantly adverse effects to recreation. They regularly bury the elevated walkways leading to the beach, inhibiting access. A photograph of a walkway located behind Ocean Plaza that is in the process of being overtaken by a sand mound is attached as Exhibit 5. These mounds also have eliminated what Dr. Oertel refers to as the swale behind the dune ridge that otherwise would be available for recreational use. Oertel Report at 16. Furthermore, over the long-term, if

the renourishment is not accompanied by a plan to manage the deposited sand within a healthy dune system, the beaches will merely erode again. An alternative that would remove the existing sand mounds and redistribute the sand to restore eroded areas and establish a normal, continuous dune field would be much better from the standpoint of recreational benefits.

3. Assessment of Aesthetics: The EA mentions that the views of the beach and ocean are an important aesthetic value. EA at 33. The EA concludes that the no action alternative will have negative effects on aesthetics due to loss of beach, and that the proposed action will enhance aesthetics by adding beach. EA at 16. But this ignores that past renourishments have caused formation of large sand mounds that are unsightly and block views of the beach and ocean, and that the proposed renourishment, without action to address the existing mounds and manage the dune system, will make the sand mounds worse. An alternative that would remove the existing sand mounds and redistribute to eroded areas would be far better for aesthetics.

4. Assessment of Economics: The EA concludes that the project will have economic benefits and estimates a benefit-to-cost ratio of 1.36 to 1. EA at 32-33. But this ignores the negative economic effects of the accumulated sand mounds in the southern beach area and Back River. These sand mounds eliminate completely or seriously obstruct the view from the bottom two floors of Ocean Plaza Resort Hotel and other businesses along this 900-foot stretch in the heart of the commercial tourism district of Tybee Island. As a result, the bottom floors or the largest hotel on Tybee Island and other nearby buildings cannot be sold as having ocean views, which seriously diminishes economic value, business revenue, and tax revenue. The degraded aesthetics in the southern beach area also diminishes the experience for other visitors to Ocean Plaza and the commercial district in general. The EA fails to take into account that redistribution of sand that is already present in malformed sand dunes on Tybee Island and the sand bar in Tybee Inlet on a periodic basis would be less expensive and more cost effective than bringing in dredged material from offshore. The Corps must calculate the adverse economic impacts of the undesirable sand accumulations and then recalculate the benefit to cost ratio for the proposed alternative. The Corps also should calculate the benefit to cost ratio of redistributing sand that already is present on Tybee Island and in the sand bar in lieu of or in conjunction with the alternative that the Corps is currently proposing.

5. Assessment of Endangered Species: The EA and Biological Assessment (BA) discuss that effects on nesting sea turtles is a relevant consideration. EA at 17. But the EA and BA fail to take into account that the absence of a naturally-formed, continuous primary dune ridge and presence of large, dissected sand mounds that have formed in place of natural dune ridges deprive sea turtles of nesting habitat. Oertel Report at 13. Removal of existing sand mounds, construction of lower, more contiguous dune ridges closer to the ocean, and measures to preserve the new dune ridges would restore critical habitat for nesting sea turtles. In addition, redistribution of sand already on Tybee's beaches and dredging from the sandbar in Tybee Inlet will have less impact than the proposed dredging activities on right whales, which are present in

the area and at the time when and where the Corps currently proposes to perform dredging for the renourishment.

6. Public Safety: The EA recognizes that the beach renourishment has caused the formation of the sand bar in Tybee Inlet, EA at 23, but it completely ignores the public safety hazard and impediment to navigation that results from the sand bar. The sand bar has caused several deaths and forced numerous emergency rescues. The proposed action will maintain and expand the sand bar. An alternative that would dredge the sand bar, use that sand along with sand already on Tybee Island for the renourishment, and include an active and ongoing dune management program that will mitigate erosion from the beach would be far preferable for public safety.

In addition, the EA notes that the Corps has not undertaken a contaminant assessment of the potential dredge site and instead is relying on a 15-year old contaminant assessment from a nearby area that was a dredge site for a prior renourishment. EA at 30-31. Unlike sands already located on Tybee Island, the sand from the proposed dredge location may contain heavy metals or other contaminants that render such sands unsuitable for placement on the beach. Before the Corps proceeds with dredging at the location it has proposed, it must undertake a contaminant assessment of the sands in that area and include the results in its NEPA documentation.

7. Assessment of Urban Quality: The EA concludes that the proposed action will result in an increase in tourism and tax revenue, and will provide additional storm protection benefits. EA at 39. As discussed above, renourishment without any action to address the large existing sand mounds and manage the deposited sand so that it forms a continuous dune ridge system of normal height will have adverse effects on the businesses located behind these sand mounds and on tourism in the commercial area generally. Further, the existing sand mounds do not provide a storm protection benefit because they are broken up by breaches and scour areas. Oertel Report at 13. Removing the existing mounds and using the sand to create new dunes and restore eroded areas, in lieu of or in conjunction with the proposed action, would be far beneficial from the standpoint of urban quality.

8. Cumulative Impacts: The Corps is required to take into account cumulative impacts, that is, the effects of the action when added to all past actions and all reasonable foreseeable future actions by federal agencies or other persons. By not considering the adverse effects of its past renourishments described above and how the proposed action will exacerbate those adverse effects, the Corps has failed in its cumulative impacts assessment. Properly considered, the adverse impacts of the proposed action are significant and necessitate an EIS.

9. Inadequate Assessment of Alternatives: The EA studies only the no action alternative and the proposed alternative. The adverse effects of the proposed action, more extensive than the Corps represents, and the availability of more beneficial and potentially less costly alternatives, reveal the Corps' alternatives analysis to be grossly inadequate. The duty of

the Corps to take a "hard look" and consider all significant aspects of the problem obligate it to better assess the proposed alternative and to evaluate other alternatives, including an alternative that will seek to remedy the unwanted accumulation of deposits of sand in large mounds in the southern beach and along the Back River and help restore a healthy and productive dune field to Tybee Island's commercial beach.

10. Erroneous FONSI: Because of the above-described deficiencies in the Corps' analysis of the effects of the proposed action, the Corps FONSI should be withdrawn. The proposed action is a major federal action significantly affecting the environment. The Corps should redo its NEPA documentation to take into account the cumulative effects of the proposed action and expand its alternatives analysis to include the approaches discussed above and in the attached report of Dr. George Oertel.

Very truly yours,

R. Todd Silliman

Enclosures

cc: Mr. Harry Spirides, Ocean Plaza Resort
Dr. George Oertel
Mr. Stuart F. Sligh

EXHIBIT 1

EXHIBIT 2

Conceptual Plan for Correcting and Managing Dune Instability Along Commercial Beaches

for

Ocean Plaza Beach Resort
Tybee Island, GA

Oertel Coastal Consultants
Belleair Beach, FL 33786

January 2014

TABLE of CONTENTS

1.0 Purpose and Background

The purpose of this report is to describe the altered conditions found at sand dunes in a densely used commercial area of Tybee Island, and to provide a framework for managing this area in the future. Coastal dune ridges are valuable resources that have a variety of environmental and protective functions. In altered states dune ridges may not provide any of these functions.

Since the linkage of Tybee Island to the mainland in 1923, Tybee Island has provided a unique resource to island guests and residents. However, as is the case with all coastal areas, the shore is constantly shifting in response to waves, tides and sea level rise. Landward shifts in the shoreline in the 1920's and 1930's, prompted initial attempts to manage the beach. In 1938, steel pile and concrete slab seawalls were installed along the shoreline from Fort Screven to Tybee Inlet (see Appendix A). While these structures successfully protected upland areas by stopping shoreline retreat, they also caused a general lowering of the beach surface. Between the 1940's and the 1970's, there were no dunes or dry beach surfaces on the seaward side of the seawalls. All recreational beach use was restricted to lower elevations of the tide when wet-beach surfaces emerged from the sea. In this state, there were no environmental, storm protection, or "sand sharing" benefits from dune ridges.

Coastal sand dunes are a response to fine-grained particles being blown off "dry" beach surfaces and collecting into mounds where wind flow is obstructed. Obstructions may exist as small seedlings or piles of beach straw that occur along lines of beach wrack. Small isolated mounds (foredunes) are generally less than 1-2 feet high and less than 10 feet in diameter. These foredunes have little or no protective value to upland areas.

Dune grasses (Sea oats, Panic grass, and Saltmeadow Cordgrass) baffle airflows 1-3 feet above the beach surface and enhance the rates of sand accumulation at foredunes. These unique plants have the ability to continue growing and spreading even after being buried. As a result, dune grasses augment dune height and dune surface area. Eventually, lines of foredunes may coalesce into ridges and provide a barrier to minor storms and wave uprush. In natural settings, dune ridges form contiguous barriers along the upper beach, achieving heights over 10 feet.

Since there were no dry beaches at Tybee Island between 1940 and the mid 1970's, there was no chance for dune-ridge development that might benefit upland areas. This all changed in the late 1970's with the placement of 2.3 million yards of sand along the Tybee oceanfront. Vast beach surfaces were suddenly available for the winds to excavate fine sands and mold them into dunes. In 1987 and 2000, over 2.5 million cubic yards of additional sand were placed on Tybee

beaches. Following the 1970's nourishment project, shore parallel dune ridges began to emerge on the dry beaches of Tybee Island.

By the late 1990's, multiple dunes ridges had formed a dune field between Center Street and Fourteenth Street. By 2006, dune ridges expanded north to Third Street and south of Fourteenth Street. Between 1980 and 2012, the dune field along the Tybee shore expanded seaward over the newly-placed dry beach surface. By 2012, a dune field greater than 450 feet wide existed between Eighth Street and Twelfth Street. In this area, elevated dune walkways were used to provide pedestrian access to the beach. The maximum dune field width is located at about Eighth Street and tapers to the north and south.

To the north, the dune field gets narrower and completely pinched-out at Third Street. To the south, the field of dune ridges narrows to 225 feet at Fourteenth Street. The area between Fourteenth Street and Eighteenth Street is the commercial beach. Much of this area is dependant on beachfront views and beach access for guests. Strand Avenue runs from Fourteenth Street to Eighteenth Street and is directly adjacent to the shore. A large parking area on Strand Avenue provides points-of-entry to the beach for thousands of beach goers.

The dune field adjacent to Strand Avenue is 225 feet wide at Fourteenth Street and 105 feet wide at Tybee Pier. However, the dunes in this field consist of mounds that are highly disorganized, in an abnormal pyramidal shape, and up to about 40 feet high. South of the Pier, the dune field adjacent to Strand Avenue is 60-75 feet wide and dunes much lower than the north side of the Pier. The primary dune ridge between Fourteenth Street and Eighteenth Street has been breached in numerous places. The assessment is based on a site visit and analyses of aerial photography. Beach nourishment without a monitoring and management plan for wind-blown sand has continued to contribute to an unnatural dune field and increased dune height adjacent to existing dwellings, streets, and parking areas in the area between Fourteenth Street and Eighteenth Street.

A detailed description this area is the topic of *Section 2.0 - Assessment of dune ridges and Beach surfaces.* The assessment is based on a site visit and analyses of aerial photography.

2.0 Assessment of Dune Ridges and Beach Surfaces

On September 4, 2012 a site visit was made to Tybee Island to evaluate the condition of dune ridges and beach surfaces between Fourteenth Street and Eighteenth Street. Aerial photographs were also obtained from *Sligh Environmental Consultants* for historic analyses of the area. Our initial approach to the area from Tybee Drive was obscured by dense thickets of

live oaks, smilax and yaupon holly bordering the east edge of the Strand Avenue parking lot (Figure 1).

Figure 1. Photograph looking southeast across the Strand Avenue parking area behind Ocean Plaza Beach Resort. Photo shows tall thickets obstructing the views of the beach and ocean.

A band of thickets extended along the east edge of the parking lot from Fourteenth Street to the Pier. Just east of the thickets, there were also several sand mounds that rose up above the thickets and appeared to be as high as the second floor of the Ocean Plaza Beach Resort (Figure 2).

Figure 2. Photograph looking northeast across the Strand Avenue parking area behind Ocean Plaza Beach Resort. Photo illustrates how pyramidal shaped dunes have grown to elevations over the tall thickets. Dunes and thickets obstruct beach and ocean views from first and second floor rooms in the Ocean Plaza Beach Resort.

Access to the beach was made via an elevated dune crossing structure that traversed the mounds of sand and thickets. At the top of the access structure, we observed that mounds were not "normal" coastal dunes. As described above, natural coastal dunes form into linear ridges that parallel the shoreline. The sand mounds in this area were extremely tall and had pyramidal shapes and occurred at the landward ends of long scour basins. The scour areas and mounds were oblique to the shoreline with orientations that varied from NNW-SSE to NW-SE. Some remnants of dune ridges could be gleaned from the crossover, but the dune field from Fourteenth Street to the Pier was generally composed of irregular mounds and scour basins. The scour basins originated at breaches at primary dune ridge at the beach ends of the dune-crossing structures.

There are five elevated walkways that cross the dune field and connect the Strand Avenue parking lots to the recreational beach. Dune-crossing structures are located at Fourteenth Street, Tybee Drive, The Tybee Island Marine Science Center, Atlantic Boulevard and Sixteenth Street. It appears that the primary dune ridge was breached in several places by "blowouts" at the beach ends of each of these structures (Figure 3). Landward of these dune breaches are scoured basins that reached deep into the dune field. Pyramidal mounds of sand (possibly disturbed dunes) were located at the landward ends of the scour basins. The scour basins extended diagonally across the dune field and were the sources of sand for the pyramidal mounds. A 2012 Google image of the area showed scour depressions associated with each of the four dune crossing structures (Figure 4).

Figure 3. Photograph on the beach looking northwest a large blow-out and the highly dissected dune field.

Tybee Pier provided an elevated vantage point for observing the highly dissected dune field and the beach surface. The width of dry beach is a very important factor affecting dune development. The dry beach is the main surface supplying wind-blown sand for dune development. (Dry-beach width is defined as the distance between the wrackline and the primary dune ridge).

Figure 4. Photograph from the Pier looking north-northwest at the end of a dune-crossing ramp. The ramp does not extend over the dunes and onto the beach. The garbage containers and beach swing create wind turbulence and wind scour on the beach and dune surface.

North of Fourteenth Street, the dry beach and dune field was about 525 feet wide (with multiple dune ridges, see Appendix B). The dry beach part of this field was only about 50-75 feet wide. Between Fourteenth Street and the Pier (the commercial beach), the dune field was only about 100-200 feet wide, but the dry beach was actually wider than the dune field (Figure 5). Just south of Tybee Pier, the beach was wide but the dunes were low and poorly developed. South of Seventeenth Place, sand dunes were developed into ridges. The sand source for the beaches and dunes in this area are tied to sand bar evolution in Tybee Inlet.

Figure 5. Photograph of the recreational beach in the commercial area showing a dry beach that is wider than the more undisturbed beaches north of Fourteenth Street.

In general, the beach and dune field between Fourteenth Street and Eighteenth Street did not exhibit natural characteristics. The dry beach was wider than adjacent beaches and did not have a typical wrackline where seedlings and foredunes generally initiate. The primary dune ridge was highly dissected and had numerous "blow-out" breaches that led into wind-scour basins in the secondary. Sand dunes in the secondary dune field were pyramidal rather than linear shaped.

North of Fourteenth Street, a broad swale was also located landward of dune ridges. The landward edge of the swale appeared to be along the "old" seawall. The swale is approximately 100-150 feet wide between its landward edge and the landward side of the secondary dune ridges. South of Fourteenth Street, the swale was completely missing, and apparently replaced by the pyramidal dunes described above.

3.0 Cause and Effect of Dune Instability

The net migration of sand from north to south along the Tybee Island oceanfront, fueled by large quantities of sand placed during past beach nourishments, and the lack of an effective dune management program, has contributed to dune instability and the formation of the poorly developed, abnormally-shaped, and highly dissected dunes between Fourteenth Street and the Pier. Dune management is needed to preserve and protect normal dune formation from the stress imposed by beach guests and facilities.

The thousands of beach guests, who are so important to the Tybee tourist industry, impact the beach in a variety of subtle ways. While the City of Tybee Island has provided pedestrian pathways over the dune field, other measures are needed to address disturbances influencing wind-blown sand patterns.

It is known that footpaths through the dunes can damage plants, expose dune surfaces, and re-activate wind-blown sand transport. This is why elevated crosswalks are used to protect dunes and vegetation. Crosswalks are generally very effective over dunes that have been stabilized by vegetation. In exposed (non-vegetated) areas, however, footpaths may alter wind patterns, increase or decrease wind speeds, and enhance flow turbulence. We believe this is the case for the area from Fourteenth Street to Seventeenth Street.

Historically, snow fencing has been used to accelerate dune development by producing baffles to wind-blow sand. Yet, if snow fencing or dune crossings are installed and not maintained correctly, they may actually accelerate scour in dune fields. The use of structures on the shore to manipulate wind-blown sand accumulation requires regular monitoring, feedback and modification. Dune crosswalks in the commercial area may be a significant factor contributing to destabilizing dune surfaces. The crosswalks are too low and not long enough. The beach ends of the crosswalks are located precisely where the primary dune ridge should be developing. The dune crosswalks should have been extended further eastward before they were ramped down to beach. In their present configuration, they are creating wind turbulence and acceleration, and as a result winds are scouring surfaces deeply into the dune field. In fact, the crossing structures that were meant to protect dunes are actually a major cause of their deteriorated state. Scour basins originate at the beach sides of these obstructions (Figure 6). If these areas were monitored, blow-out breaches through dune ridges could have been mended when they first occurred, thus preventing the development of scour basins and excessively high pyramidal dunes. There are also other wind-altering structures that are inhibiting the natural development of a primary ridge. Trash barrels and beach swings have been placed at the toe of

the dunes and near the egress ends to the dune crosswalks (Figures 3 and 4). These structures also create turbulent winds that inhibit primary dune growth and shift sand back into the large pyramidal dunes in the back of the dune field.

Figure 6. Sketch map of the commercial area north of the Pier. Map illustrates seven scour basins in the dune field that terminate at pyramidal dunes. On the east side of each basin, a red circle signifies the locations of dune ridge breaches. The breaches are near the seaward ends of each of the beach walkways (A, B, C, and D)

In summary, the absence of a flexible dune management plan that provides an effective response to problems caused by improper beach traffic routing and improper placement of dune crossings and fencing is contributing to dune ridge degradation in the commercial beach area. As discussed below, further beach nourishment activities, without proper dune management, will not cure, but instead will worsen, the degradation and malformation of the dunes in this area.

4.0 Value of Primary Dune Ridges

The *natural functional value* of coastal sand dune ridges is based on form and positioning. Primary dune-ridge form is influenced by unique "feedback" relationships with pioneer dune grasses and wind-blown sand. As contiguous structures along a shoreline, primary dune ridges provide a barrier to storm waves and storm surge. Alteration to this relationship can change dune form and degrade the natural functional values of a primary dune ridge. Primary dune ridges have protective, sand sharing, habitat and commercial value. A brief review of these values is discussed below.

4.1 Upland Protection

Much has been written about the functional value of dunes to protect upland areas. Coastal dunes have a unique property of being stabilized by vegetation. This means that coastal dunes generally do not migrate across the dune field, but are stable in location. Laypersons often misinterpret this concept of a dune stabilized by vegetation. They frequently think this means vegetation stabilizes the dune against the forces of wave action. This is not true. This is not to say that vegetation does not play an important role in dune dynamics. Dune grasses are crucial for stabilizing dunes and preventing them from migrating across a dune field. In the Tybee case, unstable dunes could migrate into streets, parking lots, private property or commercial areas.

Stable dune ridges located at the upper edge of the dry beach can be protective barriers to areas behind them because of their elevation. Dune ridges are effective first lines of defense against storms only to the extent that storm water cannot penetrate past them. Since dune ridges can be elevated to more than 10 feet above the beach surface, they are effective barriers to the onslaught of storm waves that do not exceed this elevation. Thus, elevation is an important factor determining the potential protection to an upland area.

During storms, waves wear away the seaward sides of dunes. The integrity of a dune ridge is dependent upon the relationships among: [1] the rate material is eroded away from the dune, [2] the duration of an erosional event and [3] the total amount of sand in a dune. Small storms

may only remove a small volume from the toe of a dune, leaving the majority of the dune in place. However, nor'easters may last several days and continuously gnaw away at the dune, leaving a large scarp on the dune face. In extreme cases, the integrity of a dune ridge as a barrier may be impacted. Fortunately, intervals between storms are healing periods for dunes. Sharing sand with the dry beach allows dunes to reconstruct and heal. Winds blowing across dry-beach surfaces incite sand grains to bounce landward and pile up along scarped dune faces.

Even stable natural dunes are no match against nor'easters or large or hurricanes. Dunes are composed of granular particles, and heavily vegetated (stable) dunes are easily eroded by the power of storm waves. While the rates and durations of dune erosion are unpredictable and generally unmanageable, the volume and dimensions of sand in a dune ridge can be adjusted.

4.2 Habitat Value

Dune ridges along the Georgia coast have a well-documented, valuable environmental function. The bases of primary dune ridges provide nesting sites for loggerhead sea turtles. Female sea turtles return to Georgia beaches annually for nesting in the spring and early summer. Upon arriving at the shore, they crawl across the beach surface and dig a nest at the base of a dune and deposit eggs in the nest. About 60 days later, turtle hatchlings emerge from the nest and crawl back to the sea. The surface at the base of the dune ridge has four characteristics that make this a good site for the nest. First, it is composed of loose sandy material that can be dug up by the mature females and can be removed by the emerging hatchlings. Second, it is generally set back far enough from the shoreline and waves to be protected from natural shifts in the position of the shoreline. Third, the beach is flat enough so the loggerhead turtles can accomplish their crawl to the base of the dunes. Yet, the gentle slope allows turtles to climb upslope to a suitable elevation above water level. Fourth, the significant change in slope between the beach and the dune face may signal potential egg laying sites to the crawling females. Breaches in dune ridges may confuse sea turtles and disorient them from finding nesting sites.

4.3 The Sand Sharing System

Dune ridges also have been described as providing protective value to upland areas while also providing sand resources to eroding beaches (the sand-sharing system). Whereas elevation is an important feature protecting the upland from waves and storm surge, these barriers are only as good as ridge continuity and integrity along the shoreline. Dune ridges are much more

effective barriers than individual mounds that have gaps between them. Since dunes are only composed of loose sand, the volume of material is occasionally under threat of breaching by storms that erode away at the toe of a ridge. If enough sand is removed, and the ridge integrity is breached, then water can rush into upland areas behind a dune field. Thus, dune volume is another critical parameter involved in upland protection.

During storms, sand eroded from dunes is often transported seaward and deposited on beaches. In this way, dunes share their sand with the beach. During calm periods (between storms), winds blowing across the dry beach blow sand back to the dunes. In this way the beach shares its sand with the dunes. This part of the sand-sharing system is limited to the primary dunes and beach. Primary dunes are considered "active" because of sand transfers to and from the beach. Secondary dunes (in the back parts of dune fields) are not active in this sand sharing system. Occasionally, large storms may overtop primary dunes and drive sand into secondary dunes and swales. For the Tybee commercial area, this would mean sand would spread into the streets and parking lots. It is apparent that natural dune fields have limited protective values, but they do provide protection from seasonal storms that are unable to overtop the crests of primary dunes ridges.

4.4 Commercial Value

Tourists and vacationers are attracted to the coast because of its tranquil and serene setting. Dune vistas and seascapes have added value to commercial interests in the area. Tourists and vacationers come to Tybee Island from Savannah, north Georgia and the entire eastern seaboard to relax and enjoy the natural coastal setting. At the beach, they enjoy basking in the sun, bathing, walking and numerous other recreational beach activities. Guests only return if they have an enjoyable experience.

An enjoyable beach experience is also a powerful marketing tool for recruiting new guests. Aesthetically-pleasing views of open beachscapes and coastal waters are major contributors to the beach experience. Obstructions to these open vistas degrade the experience, turn away vacationers and are detrimental to merchants that depend on beachgoer patronage.

Along the east side of Strand Avenue, abnormally tall sand dunes and dense thickets obstruct vistas of the beach. These dunes and thickets degrade visitors' aesthetic enjoyment. Thickets are also an attractive nuisance attracting rats, raccoons and other pests. These thickets serve no protective or sand-sharing value to the beach/dune environment.

5.0 Conceptual Management Solution

The highly-disrupted dunes behind commercial beaches on Tybee Island have little to no value for protection, sand sharing, turtle habitat or commerce. Between Fourteenth Street and Eighteenth Street. The dunes are:

[1] Set too far back to provide affective nesting sites for Sea Turtles

[2] Set too far back to *share sand* with the littoral system during moderate storms

[3] Too dissected to *provide protection* from moderate storm waves or storm surges

[4] Too unstable to prevent wind-blown sand from entering secondary dunes

[5] Too tall and thicketed in some areas to allow for aesthetic beachfront views

In the commercial area, elevated dune walks are not extended far enough onto the beach, and trash barrels and beach swings have been placed at the toe of the dune egress ends to the dune crossing structures. The structures are located precisely where the primary dune ridge should be developing. Structures create wind turbulence and a funneling effect that causes scour deep into the dune field. Shifting these two structures seaward and installing (carefully designed) sand fencing may be a temporary solution for the problem.

Nor is further beach nourishment, in the absence of effective dune management, a solution. Subsequent to each nourishment project, an abnormally wide beach surface is available for wind-driven transport. Most of those "new" wind-blown surfaces should have been stabilized (with vegetation and/or snow fencing), so that large volumes of sand could not blow landward into streets, commercial and residential areas. An active beach surface should only be wide enough to support the development of a primary-dune ridge. Any activity (even excessive foot traffic) that increases the "active" beach surface can produce abnormally large dunes or create other problems. Future nourishment projects that do not have a plan to stabilize excessively-wide active beach surfaces will only serve to exacerbate the dune size and dune shape issues in the commercial area.

The optimal solution lies in a management plan based on utilizing management practices for a heavily-used beach while preserving the "functional" values of dune-ridge systems. At this stage, the plan (outlined below) is a concept for managing the beach and dunes in the commercial district between the Pier and Fourteenth Street. There are several phases to implementing the conceptual plan:

Phase 1: Go through the joint permit application process to GA DNR.

Phase 2: Remove the pyramidal and dissected dunes in the dune field.

Phase 3: Construct a double-wide primary dune ridge at the outer edge of the dune field.

Phase 4: Stabilize the ridge with tall dune grasses such as Sea Oats (*Uniola paniculata*), Running Beach grass (*Panicum amarum*) and Salt Meadow cordgrass (*Spartina patens*).

Phase 5: Construct a broad back-dune swale and vegetate with low-lying and colorful ground cover such as Dusty Miller (*Artemisia stelleriana)*, Beach Pea (Lathyrus maritimus), Beach Croton (*Croton punctatus*), and Seaside Firewheel (*Garlardia pulchella*). Landscaping with tree like (*Sabal palmetto*) and Live Oaks (*Quercus virginiana*) can enhance picnic table areas, volleyball courts etc. Trees may also be used to provide shade oases along beach paths.

Phase 6: Construct on-ground beach paths across the swale and elevated paths over the dune ridge and out onto the beach.

Phase 7: Develop a snow fencing plan to control beach access and protect dunes and from scour and erosion. Monitor beach to insure desired results of plan. Maintain fencing as required.

The location, size and shape of the new dune ridge and swale are to be based on requirements to satisfy:

1. Upland protection
2. Sand sharing
3. Turtle nesting
4. Open beachscape vistas
5. Access to beach
6. Protection of primary dune ridges and protected plants
7. Preserve or enhance recreational opportunities

Specifications of the "new" dune ridge and swale will be made in concert with the undisturbed sections of linear dune ridges between Eighth Street and Thirteenth Street. Aerial photography (see Appendix B), topographic surveys and field observations will be required to determine appropriate dimensions. While some of the ridges to the north have been disturbed by human activity, it is the linear contiguous sections of these ridges that will serve as a model.

5.1 Dune Location

A newly-constructed primary dune ridge will be located further seaward on the beach than the existing line of dissected mounds. The precise location will be based on analyses of typical beach widths (north of Fourteenth Street). Beach width (the distance between dunes and MHW) will be used to determine the locations for dunes in the commercial beach area. Determinations of these widths will be based on analyses of topographic surveys and aerial photographs of less disturbed areas to the north of the commercial area.

5.2 Elevation

Dune height will be based on the heights of typical primary dune ridges (10 to 15 feet). A detailed topographic survey of the dune field between Eighth Street and Thirteenth Street should be used as a reference to estimate crest heights of dunes ridges. However, it is anticipated that these heights may be slightly higher than "typical natural ridges" due to their exposure to multiple beach nourishment projects.

5.3 Dune Width

A double-wide dune ridge is proposed for the primary dune. This fortified ridge will contain more sand than typical dune ridges and would increase sand availability to the sand-sharing system and enhance upland protection. The design volumes and widths of these ridges are to be determined. Dune ridges should be stabilized with a heavy cover of tall dune grasses. Wind fields around dune walkways should be carefully protected with sand fencing. Monitoring should be used to assure the prevention of "blow-outs". Fence locations and orientations should be adjusted as required.

5.4 Swale Field Area

A broad "flat" swale will be located between the parking area and the "fortified" ridge. The swale can be landscaped with sparsely planted Palmetto Palms and Live Oaks. A low ground cover could be planted with colorful native plants such as Dusty Miller, Fire Wheel Gaillardia, Seaside Prime Rose, Morning Glory and Prickly Pear Cactus. The width of the swale will be based on the location of the primary dune ridge and the Strand Avenue Parking area. The landward side of the swale will be fenced to serve two purposes. First, it will control foot traffic to beach walkways, and second it will trap and prevent wind-blown sand from blowing into the parking areas. This type of swale will improve view corridors and discourage the attraction of

rats, raccoons and other pests. Portions of the swale field could be designated and designed for a variety of recreational enhancements such as beach volleyball courts, picnic tables, beach swings, bocce, beach frisbee, etc.

5.5 Service and Recreational Structures

Generally, trash barrels, beach swings and other obstructions should be placed in the lee of the stable dunes (in the swale). Structures on the windward sides of dunes should be placed a significant distance down the beach as to not incite scour on the dune face.

5.6 Beach Egress/Access

Beach access and egress should be carefully controlled by walkways, dune crossings and snow fencing. Points of entry to walkways are particularly important because this is where blow-outs have occurred in the past. These areas should be carefully shielded by offset snow fencing.

Walkways in the backdune swale area should be on-ground structures to reduce turbulence.

APPENDIX A - Management milestones on Tybee Island beaches.

1923	Hwy 80 was completed, linking Thunderbolt to Tybee Island.
1920's & '30's	Erosion and shoreline retreat
1938	Protective seawalls built Steel pile north of Hwy 80 Concrete slab south of Hwy 80
1930's & '40's	Installation of 138 low-profile wooden beach groins
1940's & '50's	Shoreline retreat stopped at the base of the seawall, but erosion caused the beach surface to drop to about near the LW elevation
1960's	There were no dry beaches between Fort Screven and the Tybee Creek entrance
1970's	A high-profile terminal groin, composed of large stone, was constructed adjacent to the Tybee Island lighthouse
1970's	About 2.3 million cu yards of sand was excavated from Tybee Inlet to nourish the beach from 17th Street to the terminal groin. A large amount of sand filtered through the North Groin and built new land northwest of the groin.
1986	Construction of a low-profile terminal groin at 18th Street (South Terminal Groin)
1987	About 1 million cubic of sand was placed on the beaches
1992	Dredged-material from the Savannah Channel deepening Project was pumped in the surf zone to facilitate beach growth
1995	Three short, low-profile beach groins were constructed south of the South Terminal Groin.
1995	About 335,000 cubic yards of sand placed between Tybee Inlet and 14th Street
2000	Completion of a 1.5 million cubic yard sand nourishment project
2000-2005	Large fields of linear dune ridges formed between Third Street and Fourteenth Street
2002-Present	Disturbed dunes in commercial area are unstable

Appendix B - Aerial view of dune ridges and intra-dune swales north of Fourteenth Street.

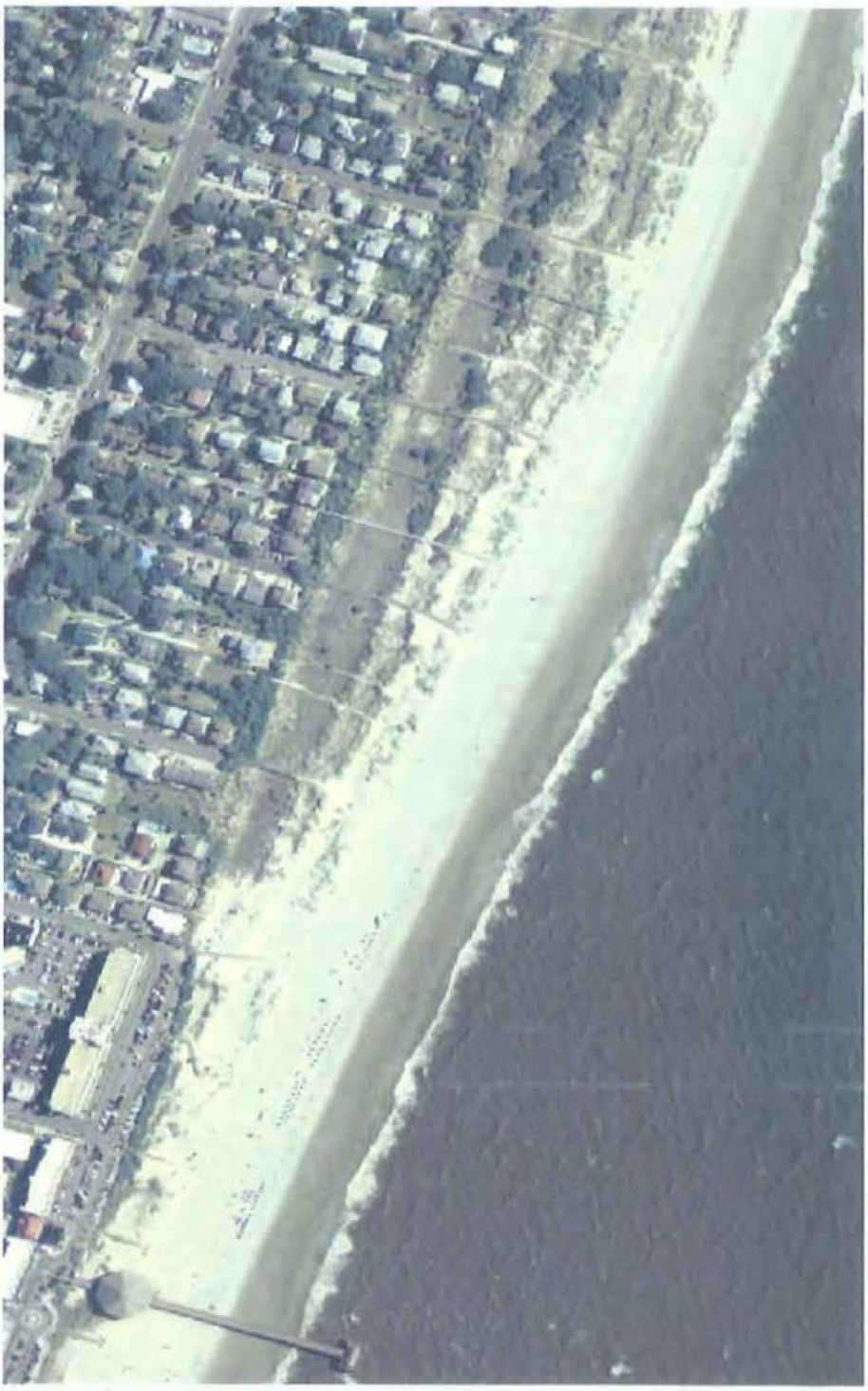

EXHIBIT 3

73° Overcast
MORE WEATHER TIDES

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Warning signs fail to keep people off south Tybee's sandbars

Officials say off-limits law, fine may be needed to deter beachgoers who wander past warnings

Posted: May 13, 2010 - 2:18am | **Updated:** May 13, 2010 - 5:54am

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At low tide, Tybee visitors oblivious to warning signs play on the south end sandbar. (Photo by Carl Elmore/Savannah Morning News)

By Eric Curl

At 1 p.m. Wednesday afternoon, seven people walked on the sandbars on the south side of Tybee Island's beach. Many were well beyond posted signs meant to warn them away.

"Danger of drowning beyond this point," the signs state.

But the sandbars, which stretch out about three quarters of a mile, did not appear menacing at the time. And that is where the problem lies, according to city officials.

"It looks so inviting," said city council member Shirley Sessions.

If she did not know better, she would probably go out there, too, Sessions said.

But the sandbars are quickly overtaken by the ocean when the tide comes in, according to city officials. For those who did not return to the beach beforehand, strong currents await their swim back, said Fire Chief Skip Sasser.

"When the water comes through those channels, it is coming through hard and fast," Sasser said. "They have a hard enough time just standing up."

Those same currents led to the drowning of two people last year. Now, this year has city officials worried. Already, 16 people have been rescued after going out too far, Sasser said.

"It's going to be a busy year," he said.

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Why Was This Video Banned?

The rescues come even though the city put up the larger warning signs in March.

"They just walk right past them," said Tybee Island Mayor Jason Buelterman.

As a result, both Buelterman and Sessions say the council should consider enacting a law making the sandbars off limits and a fine for those who ignore it.

"I really think we need to do whatever we can," Sessions said.

View the Tybee Visitor's Guide

Whitemarsh Island resident Fletcher Moore, who was among those on the sandbars Wednesday, said such a law would be a bad idea. The recent college graduate, who earned a degree in biology, said he likes to walk out onto the sandbars because of all the sea life there. As long as he pays attention to the tides, Moore said, he should be OK.

"I don't feel in danger at all," he said. "I guess the main issue is tourists that don't come out to the beach a lot."

For those unfamiliar with the tides, the signs should be enough of a heads up, Moore said.

"It gives you an idea of the risk when you come out here."

Visitors are not the only ones caught off guard by the tides. Sasser noted the two drowning victims last year were Chatham County residents.

And, apparently, the signs are not giving some beachgoers a good enough idea of the danger the sandbars pose. Sasser said he asked one 25-year-old Atlanta resident, after she had to be rescued two weeks ago, whether she saw the warnings before going out.

"She said yes, but she had no idea the water would come in like that," Sasser said.

But for others, the warnings seem to be doing the trick.

New Hampshire resident Linda Gauthier, who was collecting shells Wednesday, said she would not venture out because of the implied danger.

The same goes for 9-year-old Jodi Conrad, who was visiting Tybee from Madison with her father. For her, the sign's message was enough.

"It said it would drown you," she said.

Comments (16)

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seaweaver 05/13/10 - 07:02 am 0 0

A law to keep people off the sand bars?

Another Damn reason not to go to Tybee.
A law to keep people off the sand bars....NUTS! LET THEM DIE!
Especially if they are digging for free government cheese...

It is quite possible to drown ANYWHERE on Tybee and at one time it was common in Kitten's Corner. Tybee is failing to employ they the proper signs.....SHARKS HERE,DEMOCRATS TASTE GOOD...RESCUED CITIZENS WILL

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Boy ID'd in Tybee Drowning

Posted: April 7, 2009 - 10:30pm | **Updated:** April 8, 2009 - 7:48am

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Rashad Ling was a ninth-grader at Groves High School. Ling drowned Monday off Tybee Island after wading out to a sandbar and getting caught in the incoming tide. Photo courtesy of family

By Michael Atkins

Rashad Leig Ling was identified Tuesday as the 15-year-old boy who drowned off Tybee Island's southernmost tip Monday afternoon.

It was the Savannah youth's first trip to the beach.

"He was a nice, young fellow, and he got along with everybody," his mother, Susie Davis, recalled Tuesday evening as mourners gathered at the family's Carver Heights home. "He'd do anything to help you if you needed it."

Ling, a ninth-grader at Groves High School, was with three friends when he drifted under the cold, choppy water Monday afternoon. The group had waded toward land from a sandbar, according to a Tybee Island police report of the incident.

Ling yelled as he sank. He never resurfaced.

"He was a very smart child - he stayed to himself and didn't bother anyone," said Kimberly Davis, the boy's aunt. "He used to love to walk down the street with his basketball to go to the court to play with friends."

Survivors include a brother, 10, and a sister, 12. Funeral arrangements are pending.

Hazardous conditions

About seven hours after Ling was reported missing, once the tide had receded, searchers discovered his body about 100 yards from where he was last seen.

Rescue crews noted that a number of circumstances likely contributed to the drowning, Tybee's first since 2007, when five people drowned.

Ling, described by police as an inexperienced swimmer, became imperiled shortly before 3

p.m. Monday, a time when the incoming tide came ashore, whipped by westerly winds.

The four teenagers found themselves stranded on the sandbank, separated from land by gullies that deepened by the minute.

The water temperature, about 55 degrees, would've been survivable for just a few hours, said U.S. Coast Guard Chief Jim Bodenrader, officer in charge at Coast Guard Station Tybee Island.

"It's deceptive," he said. "You have a beautiful day, but the water is still cold, and if you find yourself up to your neck in that water, and you have no way to get back to the shoreline, you're going to run into some issues."

The timing didn't help matters, either.

Where Ling drowned, a spot near Little Tybee Island, is not under the watch of the Ocean Rescue Squad until May 1, when lifeguards start regular patrols, Tybee Island Fire Chief Skip Sasser said.

During summertime, lifeguards "immediately go out and start warning everybody to come on in when the tide changes," Sasser said. "In this particular area, the tide comes in behind you. You can be cut off."

Barry Brown, of the Lazaretto Creek-based Marine Rescue Squadron, said the spot is "inviting, but it's as dangerous as it can be. Any time you go near that water, you have to prepare for the unexpected."

Added Bodenrader: "You think about a rip current - that's just a small body of water that's being pushed up on the beach. But with the tide shifting, that's the whole ocean pushing in. There's no way to fight that, no way to swim around it."

A tragic outcome

Regardless of the grim outlook, efforts to find Ling were extensive.

Within minutes of the report, the Coast Guard deployed a helicopter and rescue boats. Aiding their efforts were responders from the Marine Rescue Squadron, Savannah-Chatham police and the Tybee Island fire and police departments.

A searcher with the state Department of Natural Resources ultimately made the late-night discovery.

"It bothers everybody," Sasser said. "It's personal, and it runs deep with all the emergency responders. You don't want to see it end in tragedy, but unfortunately this one did."

Use caution on sandbars, experts say

Officials advise checking tides and weather before venturing out to any sandbars, such as those off Tybee Island's southern shores.

"If you're going to come down to this side of the beach, you should do it while the tide is still going out," U.S. Coast Guard Chief Jim Bodenrader said. "Once that tide turns, you have a small window to get off that sandbar."

If stuck atop a ridge, people should not attempt to cross back to land through the water, Bodenrader said.

"If you find yourself stuck on the bar, stop where you are and signal somebody down," he said. "Let somebody come and get you off."

On Tuesday afternoon, the serene beach where Ling died gave no indication of the previous day's incident.

Among those who strolled along the shoreline was Yvonne David, followed closely by her two young children, Jamal and Zane.

David, originally from the Netherlands, said she's very familiar with the dangers that sandbars present.

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Risky business: Bar hopping

Posted: May 13, 2010 - 11:18pm | **Updated:** May 14, 2010 - 5:37am

Related Stories
- Warning signs fail to keep people off south Tybee's sandbars

Fines for risky beach behavior valid.

THE DEADLY danger of Tybee Island's south end sandbars is not academic: Last year, the ferocious currents in the tidal channels that inundate the sandbars swept Homer T. Roberts Jr. to his death.

Mr. Roberts, 33, heroically gave his own life to save a 12-year-old boy who might otherwise have shared a similar fate.

Tybee Fire Chief Skip Sasser said that Aug. 14, 2009, incident nearly claimed the lives of five people who were caught on the sandbars when the tide turned. It is at such times when inviting, innocuous-seeming spits of exposed sand turn into potential death traps, as the water's flow imperils even strong swimmers.

Near the end of July last year, a dozen people were swept out to sea near the same location. Emergency responders were able to rescue all 12 of them.

One would think that such a history, plus signs reading "Danger of drowning beyond this point" would be enough to keep people off the sandbars.

But Chief Sasser, who oversees the island's ocean rescue service, can attest to the ineffectiveness of simple danger warnings: He's seen families with small children camped out under the signs that declare drowning hazards.

Perhaps the city should consider more informative signs, warning specifically of the deadly currents, or showing actual photos of the channel and high and low tides. After all, some visitors may be good swimmers and believe they are immune from drowning.

But that may not be enough either. That's why the Tybee City Council is correct to consider imposing a fine for taking the ill-advised risk of flouting the power of the tides.

Make the fine $200. That's what the city charges folks who bring a dog onto the beach, and ignoring a well-known drowning hazard poses a much larger public safety problem.

Those who ignore warning signs place not only themselves at risk, but each lifeguard who must risk his or her own life to save them.

Death by drowning is a tragedy for victims and families. Given the number of near-misses at Tybee's south end, many people believe something so unthinkable would never happen to them.

Perhaps the risk of a pricey citation will convince Tybee's visitors that it's better to be safe and live to bask another day.

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riverrat 05/14/10 - 07:48 am

0 0

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$200 fine for walking on a sandbar? How about a sign like those seen on construction sites: "Beyond this point 2 people drowned this year & 26 people rescued this year. Don't be the next victim" with the numerical parts of the sign easily changeable when the next idiot gets caught out there.

Geechee 05/14/10 - 01:13 pm

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35285 POINTS

Signs? Nah....

.... how many languages would you have to use? Is there an International symbol for idiot? I'm still holding out for a virtual fence and lifeguards with tranquilizer guns. If that don't work maybe we can use some of the returning troops.

Surely U Jest 05/14/10 - 12:15 pm

0 0

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33 POINTS

International Idiot Symbol?

Is it a red and blue elephant with three white stars across its back?

Geechee 05/14/10 - 01:29 pm

0 0

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Virtual fence...

...my understanding is a series of tower mounted sensors, networked cameras, radar and other communications gear. But what do I know, I'm a low tech guy. Iffen it was up to me I'd just build two fences and mine the area between them. That kind of answers the question for those who say, "If you build a 20' fence won't they just bring a 25' ladder ?" doesn't it. (I'm talking about the USA-Mexican border now not Tybee.):)

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Two rescued from Tybee sandbar

Stranded in shallow water after lingering on a Tybee Island sandbar too long, a pair of Ohio transplants was rescued quickly by more than a dozen emergency responders.

Tybee Fire Chief Skip Sasser said Tuesday that Jan Lucik, in her 50s, and her grown son Michael called 911 at 2:12 p.m. in a "frantic" state.

They had walked the length of the long sandbar at the southern end of Tybee Beach, and found their return cut off by high tide.

"There are warning signs posted in the area, but people miss them and get caught up in the moment and keep walking and walking," Sasser said.

Ten Tybee firefighters, in addition to island police officers and Marine Rescue Squadron volunteers, responded.

Firefighters were the first to get a boat on the scene, deploying their inflatable near the 19th Street ramp. They quickly reached the mother and son about 250 yards off the beach, and returned them to land unharmed.

Sasser said by then, the sand bar had been completely covered by ocean. Strong currents rushed around the southern tip of the island.

"They just moved to Savannah from Ohio, and this was their first time to the beach," Sasser said. "They apparently were unfamiliar with the tides."

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Tybee's Ocean Rescue urges caution during Memorial Day weekend

Posted: May 24, 2013 - 10:25pm | **Updated:** May 24, 2013 - 11:22pm

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Corey Dickstein/Savannah Morning News Tybee Island Ocean Rescue lifeguard Thomas Duffy moves toward the shoreline to warn a person who was getting to far out in the ocean Friday afternoon on Tybee just south of the pier.

By Corey Dickstein

From their stands just south of the Tybee Island pier, Thomas Duffy and David Carcione watched over the growing crowd of beach-goers Friday afternoon.

When simultaneous calls came over the radio advising them of individuals venturing too far from the shore, the Ocean Rescue lifeguards leapt from their perches, grabbed their rescue floats and trotted toward the waterline where they advised people of the dangers of swimming out too far.

"Our main goal out here is to be proactive, not reactive," said Ocean Rescue Capt. Mike Taylor.

"We want to get to people before they get into trouble and to educate people. If people are in certain parts of the beach that I don't think they know or understand, we'll pull them together into a group and explain the dangers."

With near-perfect beach conditions expected today and Sunday and large Memorial Day crowds on hand, Taylor will have nearly 30 lifeguards on duty at all times across the beach.

While he and his staff want everyone to enjoy themselves, he urged moderation and common sense to those who choose to spend the weekend at Tybee.

"The beach is going to fill up and we'll have to really keep our eyes out so that everything stays safe," Taylor said.

"Whether it's drinking alcohol, or swimming, or spending time in the sun,

Corey Dickstein
@CDicksteinSMN

Those who didn't vote for Maddux are insane. MT@MLB @MLB Top #HOF vote getters: Maddux: 97.2% Glavine: 91.9% Thomas: 83.7%

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people need to do those in moderation. We ask people to mind the posted beach rules, keep an eye on the kids and listen if (a lifeguard) is trying to tell you something, because there are dangers out here."

Many of those dangers aren't easily apparent, especially along Tybee's south end, where a large sandbar extends nearly a half-mile into the ocean at low tide.

That sandbar — separated from the mainland by a channel running from the ocean to the Back River that can be as shallow as a few feet at low tide — creates some of the worst problems for Ocean Rescue, Taylor said.

"When the tide goes out, the sandbar exposes itself, and people are, 'Ooh, ahh; I want to go out there,'" he said. "There's more beach, so they think it's safe and they can go collect shells or what have you. Then the tide comes back in, people are still out there, and they can easily get caught in the channel. It turns into a rip current and they can get pulled out."

It happens fairly often.

Just last week, Savannah resident Robert Ericson learned that lesson when he was walking on the sandbar with his wife, their 2-, 6-, and 8-year-old children and their 11-year-old niece.

"The tide was low, and we went out toward that sandbar to check it out," said Ericson, a local businessman and former Army Ranger. "It seemed like a real easy walk. It didn't seem dangerous at all. I'm someone who is usually very careful and aware when something might be dangerous. I had no idea in this case."

When the tide started to come in, Ericson said, the sand bar quickly began disappearing. By the time the family neared the end of the sandbar, the once-still channel they'd waded across had become a rapidly flowing river.

That's when an Ocean Rescue lifeguard approached.

"She came up and explained that we needed to get out of there very quickly," Ericson said. "... If it weren't for her and the other three lifeguards that helped us, that situation could have gotten really out of hand really, really quickly."

Ericson praised the Ocean Rescue crew that came to his family's aid.

"I don't know what would have happened if they didn't show up when they did," he said. "It could have gotten seriously dangerous. We could have become statistics in the newspaper, you know.

"I can't say enough about how strong and professional (the lifeguards) were."

It's why they are there, said Taylor, who Friday morning helped rescue another man who was swept out to sea in the same channel.

Although that man was carried nearly 350 yards into the ocean, he was rescued by lifeguards on a jet ski and was unharmed.

"Those are, obviously, the situations we're trying to avoid, so that's why we ask that people listen when we're trying to educate them," Taylor said.

"We'll have a lot of people out here (today and Sunday) and we're looking forward to a great weekend with good weather and hopefully no major problems."

STAY SAFE ON THE WATER

The U.S. Coast Guard urged boaters to follow laws and use common sense on the waters that will likely be crowded over Memorial Day weekend.

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Petty Officer 1st Class Lauren Jorgensen shared plans to help keep boaters safe over the busy period as the summer boating season kicks off.

Wear life jackets: In 2012, almost 85 percent of 459 drowning death victims were not wearing life jackets, Jorgensen said.

Stay focused: In 2012, the No. 1 factor in all accidents was operator inattention, which contributed to 47 deaths and 359 injuries, she said.

Don't drink and boat: Last year, alcohol was a factor in nearly 17 percent of recreational boating fatalities and contributed to 280 wrecks, 227 injuries and 109 deaths, Jorgensen said.

See something, say something: The Coast Guard, state and local law enforcement agencies rely on all boaters to help report dangerous conditions on the water, she said.

For more information, go to **www.safeboatingcampaign.com.**

Maritime Program

EXHIBIT 4

15 11:40 AM

15 11:43 AM

EXHIBIT 5

George F. Oertel, Ph D

Dr. Oertel is a coastal marine geologist with 40 years of academic and consulting experience in basic research and management of coastal systems. Specialties are hydrodynamic and morphodynamic investigations of barrier islands, coastal waterways and tidal inlets. He has developed and patented innovative techniques for stabilizing beaches and waterways and has assisted in designing, permitting, maintaining and managing coastal communities from Virginia to Florida.

Education

Bachelor of Science, 1966, Geology
The Ohio State University

Bachelor of Science, 1968, Geology
University of Iowa

Doctor of Philosophy, 1971, Geology
University of Iowa

Academic Experience

Research Scientist, Skidaway Institute of Oceanography, Savannah, Georgia
Professor of Oceanography, Old Dominion University, Norfolk, VA
Director of ODU Barrier Island Program
Associate Director of ODU Spatial Analysis of Coastal Environments Program
Has published over 75 professional papers and over 100 technical reports and abstracts

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e-mail: coastal1944@gmail.com

Consulting Project Experience

State of Georgia, Provide input and advice to the Department of Natural Resources for a publication on the value and vulnerability of coastal dunes. Provide scientific advice for establishing a shore protection ordinance and a shore setback line.

City of Tybee Island, GA, Provide historic rates of shoreline stability and locate primary dune ridges needed for establishing a shore setback line. Write local dune protection ordinance for City of Tybee Island.

Sea Island Erosion Study, Sea Island, GA, Worked with W.G. Foster of Thomas and Hutton Engineering to analyze the physical conditions causing erosion along the Sea Island shoreline. Included a monitoring plan for the semi-annual accounting of beach volumes and shoreline positions.

Sea Island Beach Management Plan, Sea Island, GA, Project manager responsible for design and implement a comprehensive beach management plan for Sea Island. Included a monitoring plan for the semi-annual accounting of beach volumes and shoreline positions.

Sea Island Beach Nourishment, Sea Island, GA, Worked with W.G. Foster of Thomas and Hutton Engineering Company to determine feasibility, design, permitting and implementation of an island-wide beach nourishment plan for Sea Island beach. Final design involved innovations including modular T-head groins and a Hollow-core breakwater.

Sea Island Beach Recycling, Sea Island, GA, Worked with W.G. Foster of Thomas and Hutton Engineering Company to determine feasibility, design, permitting and implementation of a plan to collect and recycle beach sand in eroding areas. Recycling is based on monitoring of sand volumes and shorelines.

Sea Island Beach Monitoring, Sea Island, GA, Project manager responsible for accounting of beach sand on Sea Island beaches and for monitoring rates of shoreline migration. Consultant provides comprehensive reports with advice two to three times per year.

Study of Tybee Inlet Dynamics, US Army Corp of Engineers, Consultant providing assistance to US Army Corps of Engineers. Designed Lagrangian study and analyzed data for determining mechanics of flow through the inlet and ebb delta system. Report was used in determining the feasibility of using ebb delta sand for beach nourishment.

Wild Dunes Beach Monitoring, Isle of Palms, SC, Project consultant responsible designing a sand accounting plan for Wild Dunes Developers, and monitoring the sediment budget to determine patterns of beach erosion and stability. Provided annual reports with advice on beach condition.

Siltation Study for the Landings Marina on Skidaway Island, GA. Consultant providing assistance to Thomas and Hutton Engineering, Company. Project consultant responsible for evaluating output from siltation model and flow studies. Results used to a design a plan to inhibit silt collection in marina.

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Jekyll Island Authority Project RFP Review, GA. Advising consultant reviewed a draft "request for proposals" (RFP) for a beach restoration project for the north end of Jekyll Island. Made comprehensive re-organization with recommendations that were incorporated into a revised on RFP.

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Advise Chip Drury on sediment dynamics and shore stability issues at Raccoon Key Spit.

George F. Oertel

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Old Dominion University
Norfolk, Virginia 23529
Telephone: (757) 683-4935
e-mail: goertel@odu.edu

(i) Professional Preparation

The Ohio State University	Geology	B.S.	1966
University of Iowa	Geology	M.S.	1968
University of Iowa	Geology	Ph. D.	1971

(ii) Appointments

1971-1973 Research Associate, Skidaway Inst. of Oceanography, Savannah, GA
1974-1978 Assistant Professor, Skidaway Inst. of Oceanography, Savannah, GA
1978-1983 Associate Professor; Dept of Oceanography, Old Dominion University, Norfolk, VA
1983-1985 Acting Chairman, Dept of Oceanography, Old Dominion University, Norfolk, VA
1983-2010 Director; ODU Barrier Island Program, Old Dominion University, Norfolk, VA 1988- Professor; Old Dominion University
1998-2010 Associate Director; Program for SPatial Analysis of Coastal Environments, ODU
2010- present Emeritus Professor

(iii) Courses Taught

1	OCEN 106	INTRO OCEANOGRAPHY PART 1
2	OCEN 107	INTRO OCEANOGRAPHY PART 2
3	OCEN 127	HONORS OCEANOGRAPHY
4	OCEN 306	INTRO OCEANOGRAPHY (UG core course)
5	OCEN 414/514	COASTAL LANDSCAPE ECOLOGY
6	OCEN 419/519	SPATIAL ANALYSIS OF COASTAL ENVIRONMENTS
7	OCEN 436/536	BARRIER ISLANDS AND COASTAL LAGOONS
8	OCEN 620	GEOLOGICAL OCEANOGRAPHY (GRAD CORE COURSE)
9	OCEN 895	TRANSGRESSIVE COASTAL ARCHITECTURE

(iv) Publications

(73) Allen, T.R., Oertel, G.F. and Gares. P. A. (2012) Mapping coastal morphodynamics with geospatial techniques, Cape Henry, Virginia, U.S.A. Geomorphology 137, 138-149.

(72) Oertel, G.F. and Allen, T.R. (2011) Synoptic assessment of repletion and residual water dynamics in a coastal lagoon by thermal remote sensing: Great Machipongo Lagoon (Hog Island Bay), Virginia, USA. Journal of selected topics in applied Earth Observation and Remote Sensing, 1-12.

(71) Lee, Y G, Jeong Min Choi, J.M. and Oertel G.F.. 2008. Postglacial Sea Level Change of the Korean Southern Sea Shelf . J. Coastal Research 24,118-132.

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Oertel, G.F., 1999 Water Resources and Vegetation Patterns on Fisherman Island, Virginia. ODURF Final/Tech Report, 33p. with 10 appendicies and CD imagery

Oertel, G.F., and Allen, T.R., 1999. Reflected GPS power for the detection of surface roughness patterns in coastal waters. ODURF. Final/Tech Report. 15p.

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George F. Oertel, Ph D

Dr. Oertel is a coastal marine geologist with 40 years of academic and consulting experience in basic research and management of coastal systems. Specialties are hydrodynamic and morphodynamic investigations of barrier islands, coastal waterways and tidal inlets. He has developed and patented innovative techniques for stabilizing beaches and waterways and has assisted in designing, permitting, maintaining and managing coastal communities from Virginia to Florida.

Education

Bachelor of Science, 1966, Geology
The Ohio State University

Bachelor of Science, 1968, Geology
University of Iowa

Doctor of Philosophy, 1971, Geology
University of Iowa

Academic Experience

Research Scientist, Skidaway Institute of Oceanography, Savannah, Georgia
Professor of Oceanography, Old Dominion University, Norfolk, VA
Director of ODU Barrier Island Program
Associate Director of ODU Spatial Analysis of Coastal Environments Program
Has published over 75 professional papers and over 100 technical reports and abstracts

Applied Experience

Coastal Consultant, George F. Oertel Consultants, 1973-1996
Savannah, GA

Hollow-core Reef Enterprises, Inc., 1996-2008
Coastal Consultant and President,
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Consulting Project Experience

State of Georgia, Provide input and advice to the Department of Natural Resources for a publication on the value and vulnerability of coastal dunes. Provide scientific advice for establishing a shore protection ordinance and a shore setback line.

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Tidewater Plantations Development Company, Laurel Island, GA.
Advise Chip Drury on sediment dynamics and shore stability issues at Raccoon Key Spit.

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESOURCES DIVISION

MARK WILLIAMS
COMMISSIONER

A.G. 'SPUD' WOODWARD
DIRECTOR

MEMORANDUM

Date: 1/27/2014

To: Ellie Covington

From: Kelie Moore Kelie

RE: Tybee Island: Long-Term Beach Management Concepts

1. CRD has long advocated that the City of Tybee develop and implement a long-term beach management plan as it relates to managing both accreting sand and erosional areas of the island.
2. CRD provided the City of Tybee with funds and technical assistance in 2005 to create such a plan. This document did not address long-term maintenance of an artificial beach (available on request).
3. CRD continues to encourage the City to initiate and develop a long-term management plan with assistance from their Consultant. Such a plan may require state authorizations and/or permits.
4. Tybee's management plan should address the entire sand sharing system, inclusive of dune fields.
5. The management plan should be tailored to address the unique characteristics of a man-made, actively renourished beach rather than a natural beach. It should also take into consideration storm protection, recreation, and habitat uses of the system.
6. Prior to the Corps' first nourishment in 1987, no dune features existed seaward of the seawall. The goal of the 50-year federal shore protection project is to maintain 40' of sand in front of the seawall.
7. The larger the volume of sand that remains behind that 40' band, whether in primary, secondary or tertiary dunes of whatever size and shape, the more storm protection the island will be afforded.
8. A second 'primary' dune ridge seaward of the existing primary dune ridge would provide temporary nesting habitat for sea turtles for a few years until such time as it eroded. However, this ridge will reduce the area for recreational use should a renourishment program not continue, such as the City raised as an issue just prior to the 2008 renourishment.
9. Georgia DNR/CRD does not currently have the resources to conduct the beach and borrow pit monitoring for the 2015 renourishment.

ONE CONSERVATION WAY | BRUNSWICK, GEORGIA 31520-8686
912.264.7218 | FAX 912.262.3143 | WWW.COASTALGADNR.ORG

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
100 W. OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

REPLY TO
ATTENTION OF:

Planning Division

FEB 18 2014

Mr. Todd Silliman
McKenna Long & Aldridge
303 Peachtree Street, NE
Suite 5300
Atlanta, Georgia 30308

Dear Mr. Silliman:

The Savannah District U.S. Army Corps of Engineers (District) received your letter regarding the Tybee Island, Georgia, Shore Protection Project draft Environmental Assessment (DEA) and Finding of No Significant Impacts (FONSI) on behalf of Ocean Plaza Beach Resort by letter dated January 17, 2014.

The District appreciates the comments and recommendations on the proposed project. As requested, your firm's letter, Dr. Oertel's 2014 report on dune management on commercial beaches, and CV will be included in the public comment record. Ten comments/recommendations were received on the DEA and FONSI.

1) **Creation of harmful sand mounds are ignored in the DEA and FONSI and their removal should be considered.** The District does *not concur* with the statement that harmful sand mounds are present. The District views the sand dunes as beneficial for storm protection and habitat enhancement. No dune creation is planned as part of this renourishment. The District *concurs* that dune locations shall be revised in the final EA.
2) **The EA should consider sand dune removal in the EA to benefit recreation.** The District does *not concur* that sand dunes are causing a detrimental impact to recreational benefits. Dune management on private property is an operations and maintenance (O&M) responsibility of the City should sand migrate into undesirable areas. No sand dunes will be constructed or removed as part of this project.
3) **The EA should consider sand mound impediments to aesthetics.** The District does *not concur* that sand dunes are unsightly and impeding aesthetics and that past renourishments are the main cause of sand dune formation. No sand dunes will be constructed or removed as part of this project. Without renourishments, the front beach would experience a reduction in dry beach

sand causing a negative impact to aesthetics, human safety, and tourism revenue.

4) **The District should recalculate the benefit to cost ration (BCR).** The District does *not concur* that sand dunes have a negative effect on economics and that the BCR should be recalculated. The benefits used to economically justify the renourishment project are primarily derived from those associated with storm damage reduction. Benefits or lack of benefits associated with recreation and/or tourism would not significantly impact the BCR.
5) **The DEA and Biological Assessment of Threatened and Endangered Species (BATES) does not consider negative impacts to sea turtles due to sand dunes or dredging impacts to right whales.** The District *concurs* sand dunes provide no nesting habitat for sea turtles. However no dunes are present in areas turtles are likely to nest. Tybee Island has had record high nesting success the last two years, 23 in 2012 and 21 in 2013. Compaction testing will be performed for 4 years after renourishment occurs before the turtle nesting season to determine if tilling is appropriate. An environmental protection plan will be enforced, including a right whale observer and watch plan to ensure no right whales are harmed as a result of the project. A re-examination of existing sand dunes and the beach management plan written by Dr. Oertel would be considered if the City and Corps pursue extending the Federal project beyond 2024.
6) **The DEA should consider dredging the sand bar off the southern tip of the island and conducting a new contaminant test of the borrow area.** The District does *not concur* that the sandbar between Tybee and Little Tybee Island should be dredged as part of this project. The sandbar sits inside the Little Tybee Island Coastal Barrier Resources Act (CBRA) zone line and dredging of the sandbar would likely cause detrimental impacts to Little Tybee. While the District does acknowledge tragic loss of life has occurred at the sandbar as well as other areas along the beach, restricting public access to the sandbar or other areas outside of the Federal project is not a Corps responsibility. The District does *not concur* that hazardous, radioactive, or toxic waste be tested for in the borrow area because there is no reason to suspect that HTRW issues are of concern. No major pollution events have occurred since the last testing, no known activities involving HTRW have occurred in the vicinity, and the borrow area material is largely quartz sand (over 90%) which does not retain HTRW. Therefore, testing is not warranted.
7) **The District should consider dune modification to increase tourism and provide storm protection.** The District does *not concur* the renourishment will have an adverse effect on tourism and the economy. Renourishments have a

positive effect on storm protection and tourism by providing storm surge barriers and creating additional dry recreational beach. No sand dune removal is planned as part of this project.

8) **The District should reconsider cumulative impacts and prepare an Environmental Impact Statement (EIS) rather than an EA.** The District does *not concur* that past renourishments have caused adverse cumulative impacts to Tybee Island. Tybee Island has been a renourished beach since 1974. Without renourishments, the beach would continue to erode away, greatly reducing the amount of dry beach present. If the beach were allowed to continue to erode, structures on the island would be subject to higher damages or potential total losses. Additionally, the amount of sea turtle nesting habitat would be greatly reduced. No action landward of seawall is proposed. The District has evaluated cumulative impacts with surveys of the beach and borrow areas (SC DNR and USACE).
9) **The District should consider other alternatives, especially dune field manipulation.** The District does *not concur* that alternatives need to be re-assessed. A final template design for renourishment will be based upon current surveys to be conducted of the entire federal project, including Back River, and again immediately prior to construction. The final design template will take into consideration current and anticipated beach material losses and will be designed to optimize shore protection through 2024. Sand will not be placed in areas landward of the seawall or outside the Federal project template.
10) **The District should withdraw the FONSI and redo the DEA.** The District does *not concur* that the FONSI should be withdrawn. The FONSI is accurate and no sand dune removal or creation is planned for this renourishment. An analysis of beach management as described in Dr. Oertel's report and in other publications will be addressed should the project extend past 2024.

The District appreciates the comments and reports provided by your office. If you need additional information, please contact Ellie Covington at (912) 652-5578 or by e-mail at Ellie.L.Covington@usace.army.mil.

Sincerely,

William G. Bailey

William G. Bailey
Chief, Planning Division
Savannah District

From:	Covington, Ellie L SAS
To:	"Wikoff, Bill"; "Moore, Kelie"; "spud.woodward@dnr.state.ga.us"; "strant_colwell@fws.gov"; "Smith, Bradley"; "Welte, Jennifer"; "Dodd, Mark"; Pace Wilber - NOAA Federal; "Jaclyn Daly - NOAA Federal"; "Barrett, Tim"; "David Bernhart"; "mueller.heinz@epa.gov"; "david_Crass@mail.dnr.state.ga.us"; "dan.forster@dnr.state.ga.us"; "jeff.larson@dnr.state.ga.us"
Cc:	Bailey, William G SAS; Davis, Spencer W SAS; Morgan, Julie A SAS
Subject:	Tybee Island Shore Protection Project - possible change in start date (UNCLASSIFIED)
Date:	Friday, May 16, 2014 8:27:00 AM
Attachments:	image001.jpg

Classification: UNCLASSIFIED
Caveats: NONE

Funds may become available to renourish the Tybee Island Shore Protection Project this fiscal year. If they do, construction could begin in November 2014 rather than 2015. If construction starts in November 2014, it would not extend beyond April 30, 2015.

I am writing to ask for your concurrence that the change in start date would be a minor modification under NEPA and the approvals that you provided for the work to be performed starting in 2015 would apply to the work being performed starting in 2014. No changes would occur in the amount of work to be performed, just the timing. No additional environmental impacts are expected from this change in timing beyond those described in the draft EA. The project would abide by all of the requirements that you included in your earlier approval for this work.

We appreciate the time, effort and quick responses you have all put into the coordination thus far. Please let me know by May 23 if you concur with our determination that moving the start date to 2014 would be a minor modification and require no further environmental analysis or coordination.

Sincerely,

Ellie L. Covington

Biologist, Planning Division

Phone: 912-652-5578

Fax: 912-652-5787

Classification: UNCLASSIFIED
Caveats: NONE

Covington, Ellie L SAS

From: Wikoff, Bill [bill_wikoff@fws.gov]
Sent: Tuesday, May 20, 2014 1:43 PM
To: Covington, Ellie L SAS
Cc: Moore, Kelie; spud.woodward@dnr.state.ga.us; strant_colwell@fws.gov; Smith, Bradley; Welte, Jennifer; Dodd, Mark; Pace Wilber - NOAA Federal; Jaclyn Daly - NOAA Federal; Barrett, Tim; Bernhart, David; mueller.heinz@epa.gov; david_Crass@mail.dnr.state.ga.us; dan.forster@dnr.state.ga.us; jeff.larson@dnr.state.ga.us; Bailey, William G SAS; Davis, Spencer W SAS; Morgan, Julie A SAS
Subject: [EXTERNAL] Re: Tybee Island Shore Protection Project - possible change in start date (UNCLASSIFIED)

Ellie,

We agree that the change in start date to the Tybee Island shore protection beach renourishment may be considered a minor modification. The USFWS offers no objection to the project starting in November 2014 rather than 2015.

Bill

bill_wikoff@fws.gov
U.S. Fish and Wildlife Service
Ecological Services - Coastal Georgia Sub Office
4980 Wildlife Drive, NE
Townsend, Georgia 31331
912-832-8739 ext.5

On Fri, May 16, 2014 at 8:27 AM, Covington, Ellie L SAS <Ellie.L.Covington@usace.army.mil> wrote:

> Classification: UNCLASSIFIED
> Caveats: NONE
>
> Funds may become available to renourish the Tybee Island Shore Protection Project this fiscal year. If they do, construction could begin in November 2014 rather than 2015. If construction starts in November 2014, it would not extend beyond April 30, 2015.
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>
> We appreciate the time, effort and quick responses you have all put into the coordination thus far. Please let me know by May 23 if you concur with our determination that moving the start date to 2014 would be a minor modification and require no further environmental analysis or coordination.

Covington, Ellie L SAS

From: Mueller, Heinz [Mueller.Heinz@epa.gov]
Sent: Monday, May 19, 2014 9:15 AM
To: Covington, Ellie L SAS
Cc: Holliman, Daniel; Higgins, Jamie; Somerville, Eric
Subject: [EXTERNAL] RE: Tybee Island Shore Protection Project - possible change in start date (UNCLASSIFIED)

We have no objections to the schedule change and agree that this is a minor change under NEPA. Heinz

Heinz Mueller

Chief, NEPA Office, OEA

USEPA, Region 4

404/562-9611

mueller.heinz@epa.gov

From: Covington, Ellie L SAS [mailto:Ellie.L.Covington@usace.army.mil]
Sent: Friday, May 16, 2014 8:28 AM
To: 'Wikoff, Bill'; Moore, Kelie; spud.woodward@dnr.state.ga.us; strant_colwell@fws.gov; Smith, Bradley; Welte, Jennifer; Dodd, Mark; Pace Wilber - NOAA Federal; Jaclyn Daly - NOAA Federal; Barrett, Tim; Bernhart, David; Mueller, Heinz; david_Crass@mail.dnr.state.ga.us; dan.forster@dnr.state.ga.us; jeff.larson@dnr.state.ga.us
Cc: Bailey, William G SAS; Davis, Spencer W SAS; Morgan, Julie A SAS
Subject: Tybee Island Shore Protection Project - possible change in start date (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

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Covington, Ellie L SAS

From: Smith, Bradley [Bradley.Smith@dnr.state.ga.us]
Sent: Monday, May 19, 2014 7:01 AM
To: Covington, Ellie L SAS; 'Wikoff, Bill'; Moore, Kelie; Woodward, Spud; strant_colwell@fws.gov; Welte, Jennifer; Dodd, Mark; Pace Wilber - NOAA Federal; Jaclyn Daly - NOAA Federal; Barrett, Tim; Bernhart, David; mueller.heinz@epa.gov; Crass, David; Forster, Dan; Larson, Jeff
Cc: Bailey, William G SAS; Davis, Spencer W SAS; Morgan, Julie A SAS
Subject: [EXTERNAL] RE: Tybee Island Shore Protection Project - possible change in start date (UNCLASSIFIED)

Good Morning,

EPD concurs that the change in start date would only be a minor modification.

Thanks,

Bradley Smith

Wetlands Unit

GA DNR – EPD

Watershed Protection Branch

Coastal District Office

Bradley.Smith@GaDNR.org <mailto:Bradley.Smith@GaDNR.org>

912-262-3196 – Office

912-399-6680 – Mobile

912-262-3160 – Fax

From: Covington, Ellie L SAS [mailto:Ellie.L.Covington@usace.army.mil]
Sent: Friday, May 16, 2014 8:28 AM
To: 'Wikoff, Bill'; Moore, Kelie; Woodward, Spud; strant_colwell@fws.gov; Smith, Bradley; Welte, Jennifer; Dodd, Mark; Pace Wilber - NOAA Federal; Jaclyn Daly - NOAA Federal; Barrett, Tim; Bernhart, David; mueller.heinz@epa.gov; Crass, David; Forster, Dan; Larson, Jeff
Cc: Bailey, William G SAS; Davis, Spencer W SAS; Morgan, Julie A SAS
Subject: Tybee Island Shore Protection Project - possible change in start date (UNCLASSIFIED)

Covington, Ellie L SAS

From: Moore, Kelie [Kelie.Moore@dnr.state.ga.us]
Sent: Friday, May 16, 2014 9:16 AM
To: Covington, Ellie L SAS
Cc: Bailey, William G SAS; Davis, Spencer W SAS; 'Wikoff, Bill'; Woodward, Spud; Morgan, Julie A SAS; Welte, Jennifer; Bernhart, David; Jaclyn Daly - NOAA Federal; Forster, Dan; Pace Wilber - NOAA Federal; strant_colwell@fws.gov; Smith, Bradley; Barrett, Tim; Dodd, Mark; mueller.heinz@epa.gov; Crass, David; Larson, Jeff
Subject: [EXTERNAL] RE: Tybee Island Shore Protection Project - possible change in start date (UNCLASSIFIED)
Attachments: USACE Tybee 2014-15 Renourishment FC.pdf

We built that possibility into our February 20, 2014 CZM approval letter – second to last line: "Should the project become viable prior to November 1, 2015 the program remains in concurrence and construction may begin without further review".

Kelie Moore

Federal Consistency Coordinator &

Coastal Resources Specialist

GaDNR Coastal Resources Division

912-262-2334

Kelie.Moore@gadnr.org

From: Covington, Ellie L SAS [mailto:Ellie.L.Covington@usace.army.mil]
Sent: Friday, May 16, 2014 8:28 AM
To: 'Wikoff, Bill'; Moore, Kelie; Woodward, Spud; strant_colwell@fws.gov; Smith, Bradley; Welte, Jennifer; Dodd, Mark; Pace Wilber - NOAA Federal; Jaclyn Daly - NOAA Federal; Barrett, Tim; Bernhart, David; mueller.heinz@epa.gov; Crass, David; Forster, Dan; Larson, Jeff
Cc: Bailey, William G SAS; Davis, Spencer W SAS; Morgan, Julie A SAS
Subject: Tybee Island Shore Protection Project - possible change in start date (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Funds may become available to renourish the Tybee Island Shore Protection Project this fiscal year. If they do, construction could begin in November 2014 rather than 2015. If construction starts in November 2014, it would not extend beyond April 30, 2015.

Covington, Ellie L SAS

From: Pace Wilber - NOAA Federal [pace.wilber@noaa.gov]
Sent: Monday, May 19, 2014 11:54 AM
To: Jaclyn Daly - NOAA Federal
Cc: Smith, Bradley; Covington, Ellie L SAS; Wikoff, Bill; Moore, Kelie; Woodward, Spud; strant_colwell@fws.gov; Welte, Jennifer; Dodd, Mark; Barrett, Tim; Bernhart, David; mueller.heinz@epa.gov; Crass, David; Forster, Dan; Larson, Jeff; Bailey, William G SAS; Davis, Spencer W SAS; Morgan, Julie A SAS
Subject: [EXTERNAL] Re: Tybee Island Shore Protection Project - possible change in start date (UNCLASSIFIED)

Hi Ellie. We are going to amend the earlier response. NMFS has no objection to the project beginning in November 2014 rather than November 2015 provided the biological and physical monitoring is accomplished under the revised schedule. As noted in our earlier correspondence, NMFS is concerned the borrow areas used for the Tybee project have not filled with beach compatible sand and no longer have the macroinfauna commonly preyed upon by fishery species, reducing the quality of several hundred acres of foraging habitat used by fish, shrimp and crabs. We appreciate the commitment CESAS has made to find an adequate borrow area for future iterations of the Tybee project once the upcoming nourishment event is completed. Pace

On Mon, May 19, 2014 at 9:10 AM, Jaclyn Daly - NOAA Federal <jaclyn.daly@noaa.gov> wrote:

> Hi Ellie,
> NMFS offers no objection to the Tybee Island beach nourishment project starting November 2014.
> -Jaclyn
>
> On Mon, May 19, 2014 at 7:00 AM, Smith, Bradley <Bradley.Smith@dnr.state.ga.us> wrote:
>
> > Good Morning,
> >
> > EPD concurs that the change in start date would only be a minor modification.
> >
> > Thanks,
> >
> > Bradley Smith
> >
> > Wetlands Unit
> >
> > GA DNR – EPD
> >
> > Watershed Protection Branch
> >
> > Coastal District Office
> >
> > Bradley.Smith@GaDNR.org <mailto:Bradley.Smith@GaDNR.org>

Covington, Ellie L SAS

From: Pace Wilber - NOAA Federal [pace.wilber@noaa.gov]
Sent: Monday, May 19, 2014 5:34 PM
To: Covington, Ellie L SAS
Cc: Jaclyn Daly - NOAA Federal
Subject: Re: [EXTERNAL] Re: Tybee Island Shore Protection Project - possible change in start date (UNCLASSIFIED)

Thank you, thank you

On Mon, May 19, 2014 at 5:25 PM, Covington, Ellie L SAS <Ellie.L.Covington@usace.army.mil> wrote:

> Classification: UNCLASSIFIED
> Caveats: NONE
>
> Pace-
>
> The District will keep its' commitment to perform benthic monitoring at both the borrow area and surf zone as previously discussed. If a new authorization for federal participation in the Tybee Island Shore Protection is obtained a study would be conducted to determine the best sand source for future renourishments.
>
> Thank you,
> Ellie
>
> -----Original Message-----
> From: Pace Wilber - NOAA Federal [mailto:pace.wilber@noaa.gov]
> Sent: Monday, May 19, 2014 11:54 AM
> To: Jaclyn Daly - NOAA Federal
> Cc: Smith, Bradley; Covington, Ellie L SAS; Wikoff, Bill; Moore, Kelie; Woodward, Spud; strant_colwell@fws.gov; Welte, Jennifer; Dodd, Mark; Barrett, Tim; Bernhart, David; mueller.heinz@epa.gov; Crass, David; Forster, Dan; Larson, Jeff; Bailey, William G SAS; Davis, Spencer W SAS; Morgan, Julie A SAS
> Subject: [EXTERNAL] Re: Tybee Island Shore Protection Project - possible change in start date (UNCLASSIFIED)
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> > NMFS offers no objection to the Tybee Island beach nourishment project starting November 2014.
> > -Jaclyn
> >
> > On Mon, May 19, 2014 at 7:00 AM, Smith, Bradley <Bradley.Smith@dnr.state.ga.us> wrote:

From: Barrett, Tim
To: Covington, Ellie L SAS
Subject: [EXTERNAL] Re: Tybee Island Shore Protection Project - possible change in start date (UNCLASSIFIED)
Date: Friday, May 16, 2014 8:36:58 AM

I have no problem with the change

Sent from my iPhone

On May 16, 2014, at 8:30 AM, "Covington, Ellie L SAS" <Ellie.L.Covington@usace.army.mil> wrote:

Classification: UNCLASSIFIED
Caveats: NONE

<image001.jpg>

Funds may become available to renourish the Tybee Island Shore Protection Project this fiscal year. If they do, construction could begin in November 2014 rather than 2015. If construction starts in November 2014, it would not extend beyond April 30, 2015.

I am writing to ask for your concurrence that the change in start date would be a minor modification under NEPA and the approvals that you provided for the work to be performed starting in 2015 would apply to the work being performed starting in 2014. No changes would occur in the amount of work to be performed, just the timing. No additional environmental impacts are expected from this change in timing beyond those described in the draft EA. The project would abide by all of the requirements that you included in your earlier approval for this work.

We appreciate the time, effort and quick responses you have all put into the coordination thus far. Please let me know by May 23 if you concur with our determination that moving the start date to 2014 would be a minor modification and require no further environmental analysis or coordination.

Sincerely,

Ellie L. Covington

Biologist, Planning Division

Phone: 912-652-5578

Fax: 912-652-5787

Classification: UNCLASSIFIED
Caveats: NONE