



**Surfrider  
Foundation**  
Palm Beach County

June 22, 2010

Eric Reusch  
US Army Corps of Engineers  
4400 PGA Boulevard, Suite 500  
Palm Beach Gardens, FL 33410

Dear Mr. Reusch,

The Surfrider Foundation (“Surfrider”) is a non-profit environmental organization dedicated to the protection and enjoyment of the world's oceans, waves and beaches for all people, through conservation, activism, research and education. Sea Turtle Conservancy (“Conservancy”) (formerly Caribbean Conservation Corporation) is a not for profit organization dedicated to the protection of marine turtles and the habitats they rely upon. Defenders of Wildlife (“Defenders”) is a not for profit organization dedicated to the protection of all native animals and plants in their natural communities. Florida Wildlife Federation, affiliate of National Wildlife Federation, (“FWF”) is a not for profit organization dedicated to preserving, managing, and improving Florida's fish, wildlife, soil, water, and plant life.

After reviewing this third revised permit application, the following comments are submitted in continued opposition to the Singer Island Breakwaters project, permit number 0267233-001-JC. The concerns and opposition discussed below are based on the expectation that the revised permit application proposing 11 submerged breakwaters spanning 1.1 miles of coastline from DEP monuments R-61 to R-68 will still continue to adversely impact the natural resources and endangered species of the region. Additionally we continue to oppose the determination of no need to draft an Environmental Impact Statement. Below the concerns and basis for opposition have been explained in greater detail. The comments provided mirror closely the previous comments submitted by Surfrider and CCC due to the proposed project maintaining the identical design footprint and location, apart from the 11 breakwaters being submerged with a crest height below mean low water (-4.36 NAVD) instead of emergent.

### **Destruction and Degradation of Public Trust resources**

The proposed project will destroy or degrade Public Trust resources. The interruption of the littoral flow of sand and thus the loss of sand to downdrift beaches, the burial of nearshore hard bottom and associated habitat, and the degradation of the natural beaches causing a reduction in recreational opportunities are contrary to the Public Interest Criteria established in 373.414 F.S. Furthermore, significant adverse impacts in violation of 62B-41.003(2) F.A.C. will be realized due to the proposed project causing increased rates of downdrift erosion and decrease beach accretion opportunities following a storm event.

The Singer Island Breakwaters will cause rip currents, unnatural current and wave patterns, swimming hazards, and boater navigational hazards that will endanger individuals and property in violation of the 373.414 F.S. Public Interest Criteria.

The proposed project will benefit a very small segment of the user groups. Contrary to 373.414 F.S., user groups such as surfers, swimmers, divers, snorkelers, fisherman, boaters and downdrift homeowners were not adequately considered when determining whether the proposed project would benefit all users of the resource.

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Therefore the cost of the project and associated taxpayer burden cannot be justified for the few individuals positioned to benefit from the Singer Island Breakwaters.

### **Marine Species Impacts**

The proposed Singer Island Breakwater project will negatively impact marine species ranging from turtle, manatees, and sawfish to the invertebrate organisms living in the beaches.

If the Singer Island Breakwaters are constructed, endangered sea turtles will be forced to navigate and adjust to the structures in each stage of their life. Nesting female turtles will have difficulty maneuvering around the breakwaters and onto the beaches. Once on the beaches, suitable nesting sites may be altered due to changes in littoral sand flow.

Hatchlings will also face increased difficulty of survival due to the rock structures. Hatchlings will be forced to navigate around the breakwaters in order to reach open water in addition to avoiding predation by larger marine species that will artificially inhabit the breakwaters. The proposed project will destroy nearshore turtle foraging habitat as well as present an opportunity for hatchlings and juvenile turtles to become trapped inside the breakwaters.

There is no mention in the consultant's analysis that data exists to justify that a -2.0 MWL will decrease jeopardy to the sea turtle populations. These adverse impacts to sea turtles are contrary to Section 62B-41.003(2) F.A.C., which prohibits coastal construction that results in a significant adverse impact. Furthermore there is no discussion in the Biological Opinion of the impacts rock structures may have on sea turtle mating behavior, no assessment of the viability of adjacent beaches for turtle nesting, or the potential impacts from concentration of nesting sites on adjacent beaches.

The Loggerhead sea turtle is now being monitored and classified based on "Distinct Population Segments" determined by their nesting beaches and geographical region. Distinct Population Segments provide a benefit to scientists and managers when creating management plans because they allow for regional specific management of the species to ensure an overall healthier population. Management tools and techniques must be included and considered when analyzing impacts to sea turtles from the proposed project.

The National Marine Fisheries Service and U.S. Fish and Wildlife Service have determined that the loggerhead sea turtle is composed of nine distinct population segments (DPS) and that seven now qualify for endangered status and two qualify as threatened under the federal Endangered Species Act. This finding was issued for public comment March 16, 2010. (Fed. Reg. Vol.75, No. 50, p. 12598.) Thus, the biological status of this species has been found to be in a more precarious condition than previously determined and even greater caution must be taken to assure the continued survival and recovery of each DPS.

In light of the Deep Horizon Oil Spill in the Gulf it is vital that we look at the loss of turtles occurring in this southeast/gulf region to ensure proposed take in this area will not further jeopardize this species. The USFWS and NMFS need enough time to take this into consideration and/or maximize protection of these nests due to this extreme threat.



### **Sawfish and Manatee Impacts**

There is very limited discussion regarding impacts to manatees and sawfish, both listed endangered species, from the proposed project. Issues such as impacts to feeding sites and migration from the project site have not been adequately addressed.

### **Nearshore Hard Bottom**

Nearshore hard bottom is an extremely important habitat for both inshore and offshore marine species. The permit application and supporting documents lack a determination of location and extent of nearshore hard bottom habitat for the project area. Additionally, impacts to Essential Fish Habitat have not been fully considered within the project analysis. The UMAM analysis is primarily a qualitative analysis by DEP and does not fully or adequately account for the cumulative impacts to the ecosystem.

### **Nearshore and Beach Dwelling Microorganisms**

The proposed project has not taken into consideration the impacts breakwaters will have on the nearshore and beach dwelling microorganisms. These organisms rely on high wave energy to provide food sources. A loss of wave action will diminish food sources for species of worms, crustaceans, shrimps, clams, snails, and others. This loss of food will indirectly impact many species of fishes and shorebirds. The proposed project will have a cumulative impact measuring over 1 mile; this will provide little opportunity for adjacent beaches to repopulate diminished beach dwelling organisms.

### **Navigational Hazard**

The revised permit application states that breakwaters will now be submerged. This will continue to create a navigational hazard in violation of 373.414 F.S. Boaters unaware of breakwater structures will risk damage to property and person; this risk will increase if rough seas exist and breakwaters are temporarily exposed. The Coast Guard needs to be consulted again on this revised permit application.

### **Sea Level Rise/Climate Change**

In 2009, the U.S. Army Corps of Engineers (ACOE) released a comprehensive policy to require that projects under its jurisdiction be designed with higher sea levels in mind. This ACOE policy is a stand-alone document that describes how engineers should design for sea level rise, incorporating the direct and indirect physical effects of projected future sea-level change in managing, planning, engineering, designing, constructing, and maintaining ACOE projects and systems of projects. While the policy does not specify a water depth, it does lay out a procedure engineers must follow to estimate low, medium and high sea level projections. The project design does not address these impacts.



## Alternative Analysis

The fundamental issue with this project still remains to be proven that this project will not starve or diminish sand from downdrift beaches. Both the Alternatives Analysis and Technical Evaluation of the Analysis are intrinsically clear that there is a lack of sound science and engineering. The consultant has only analyzed this project by catering to the applicant's wishes of only putting forth submerged breakwaters versus holistic analysis of what is best for this reach of beach. The data compiled has been miscalibrated and therefore inaccurate conclusions have been drawn by the consultant due to their lack of this area's wave environment knowledge and available literature for review:

1. On Page 25 of the Technical Evaluation; The Melbourne, FL gauge is not 53 miles away, its actually closer to 125 miles. This wave gauge is also shadowed by the Cape, which makes it inconsistent with this wave environment.
2. Previous studies at Mid-town beach in Palm Beach have shown that a submerged breakwater will actually increase erosion in this area of coastline.
3. Use of only 2001-2005 erosion rate data does not create an accurate representation of the long-term beach stability trend. And therefore automatically skews the 2-year post-construction analysis "no action" alternative from true consideration, especially if in a previous section a 61-year regional model is being considered when calibrating the NLINE model.

The applicant's alternatives analysis only briefly discusses options such as a sand transfer plant, other structures, and dune restoration projects, but does not fully analyze these alternatives. Options the applicant has rejected as alternatives are currently being implemented throughout the state and Palm Beach County with greater success and significantly lower costs than is expected from the proposed breakwaters. ACOE comment on the project application has stated that a robust dune project would provide sufficient protection to upland structures and prevent the need for nearshore breakwaters. 161.088 F.S. requires restoration projects to implement all cost saving measures; these alternative options should be better reconsidered for their effectiveness and reduced costs to taxpayers.

The Applicant's Alternatives Analysis does not adequately take into consideration the ACOE's ENGINEER RESEARCH AND DEVELOPMENT CENTER, COASTAL AND HYDRAULICS LABORATORY recommendations:

*"The following recommendations are suggested for consideration in regard to modification of the project design to alleviate the above described potential project—hazards induced.*

*1. Positioning of the detached breakwaters further offshore such that the ratio of structure length to distance offshore is no greater than 0.67. For the proposed structure length of 240 ft the distance offshore (from the 2006 shoreline position) **should be at least 350 ft** as opposed to the proposed 270 to 300 ft. This design modification will reduce the risk of tombolo formation to a more acceptable level, and **does not change** the potential environmental hazard in regard to sea turtles.*



Based on the current design, the burden of proof still has not been met by the applicant that there will be no downdrift impacts to the littoral system and sea turtles since the project is designed to be 270ft from shore.

*2. Reduce the crest elevation of the proposed detached breakwaters such that they remain submerged by at least 2 feet at low tide. This modification may require an associated increase in crest width to achieve the desired wave attenuation but is achievable. The uncertainty of the numerical prediction of shoreline response to submerged detached breakwaters is, in this reviewer's opinion, no greater for submerged breakwaters than it is for emergent detached breakwaters as the only difference between the two is the assigned wave transmission coefficient for the breakwaters in the numerical model. The design of the breakwater cross-section to achieve the target wave transmission, on the other hand, may be more difficult but there are means, including physical model testing, to achieve a robust design for the breakwater cross—This design modification will reduce both the risk of tombolo formation and the potential environmental hazard to sea turtles.*

Based on the current design, there still remains a grave uncertainty in the numerical prediction of shoreline response. Currently, the preferred alternative only has a .8 to .9 wave transmission coefficient. This means a \$25.7M would only diminish at most 10-20% of the wave energy on the beach, if it actually works and does not cause the need for another project south. This is not a cost efficient project. It is our recommendation that additional physical model testing is absolutely necessary by an independent third party.

*3. Alternatively, at least in this reviewer's opinion, sufficient protection to upland infrastructure could be provided through committed restoration and maintenance of a robust dune feature on the backshore of the beach within the project area. The exposure of the existing hardbottom is expected to stabilize the shoreline or at least prohibit the continuation of the high rates of shoreline erosion experienced during the 2001 to 2005 interval documented in review document I."*

If the ACOE expert opinion says that a dune only project would meet the necessary shore protection at a cost of \$1.5M, why are taxpayers asked to spend \$25.7M for a project designed with a number of flaws plus the cost of an additional \$1.5M for the dune project.

### **Request for Environmental Impact Statement**

Surfrider, Conservancy, and Defenders are strongly opposed to the decision against drafting an Environmental Impact Statement ("EIS"). Given the size, experimental nature of the proposed project, the anticipated significant impacts to marine species, cumulative impacts to the coastal system, elimination of alternatives without discussion, foreseeable future projects within the region, and concerns raised by the public and stakeholder groups, we find a great need to move forward with an EIS. Many of the above mentioned comments directly relate to the need for an EIS before any action is taken on the proposed permit application.



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*Palm Beach County*

The Surfrider Foundation, Caribbean Conservation Corporation, Defenders of Wildlife, and Florida Wildlife Federation submit the above comments in opposition to the Singer Island Breakwater permit application. Thank you for taking these comments into consideration and if there are further questions please do not hesitate to contact us.

Sincerely,

Greg Lyon  
Surfrider Foundation  
Palm Beach County Chapter Chair

Gary Appelson  
Sea Turtle Conservancy  
Policy Coordinator

Lauri MacDonald  
Defenders Of Wildlife  
Florida Director

Manley Fuller  
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Executive Director

Cc:  
Governor Crist  
Rep. Klein  
Sen. Atwater  
USFWS  
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