

# **APPENDIX G**

## **RESPONSES TO COMMENTS**

# Letter #1: Coalition to Restore Coastal Louisiana (CRCL)



## Coalition to Restore Coastal Louisiana

6160 Perkins Road • Suite 225 • Baton Rouge, LA 70808  
 (225)767-4181 • (225)768-8193 fax • (888) LACOAST • crcl.org

July 26, 2010

Colonel Edward R. Fleming  
 Commander  
 New Orleans District U.S. Army Corps of Engineers  
 P.O. Box 60267  
 New Orleans, LA 70160

Re: Terrebonne Basin Barrier Shoreline Draft Feasibility Report and Draft Environmental Impact Statement

Dear Colonel Fleming:

Thank you for the opportunity to review and comment on the LCA Draft Feasibility Report and Draft Environmental Impact Statement. We appreciate the effort of the U.S. Army Corps of Engineers (USACE) and the State of Louisiana to complete the Terrebonne Basin Barrier Shoreline Project for inclusion in the Chief's Report due December 31, 2010 considering the current uncertainties of the Deepwater Horizon Oil Spill. The Deepwater Horizon Oil Spill has shown the urgent need to restore and maintain our barrier island chains to protect the interior marshes from multiple threats, including massive oil spills and hurricane storm surges.

Although we were disappointed that the initial deadline of December 31, 2008 was missed, we commend the U.S. Army Corps of Engineers and the State of Louisiana in working diligently to meet the December 31, 2010 as directed by WRDA. It is imperative that this project is constructed as quickly as possible and our organization and partners are available to assist to ensure the urgency of these projects is understood in Washington, D.C. and in the State.

We also applaud the USACE and the State of Louisiana for incorporating Monitoring and Adaptive Management Plans at the feasibility stage of project planning. We support the use of project funding to conduct monitoring and expand research and development on these restoration projects to provide lessons learned and flexibility in operations and management. We offer our assistance as the Monitoring and Adaptive Management Plans continue to develop.

### Planning Objectives:

The planning objectives of the LCA 2004 Study include: (1) Establish dynamic salinity gradients that reflect natural cycles of freshwater availability and marine forcing, (2) Increase sediment input from sources outside estuarine basins, and manage existing wetlands and rebuild marsh substrate, (3) Maintain or establish natural landscape features and hydrologic processes that are critical to sustainable ecosystem structure and function, (4) Sustain productive and diverse fish and wildlife habitats, and (5) Reduce nutrient delivery to the Continental shelf by routing Mississippi river waters through estuarine basins while minimizing potential adverse effects.

## Letter #1: Coalition to Restore Coastal Louisiana (CRCL)

The planning objectives understand the complex and large-scale needs of the ecosystem. Barrier islands are a key feature of this landscape and offer critical functions and values to the surrounding marshes, fauna and communities.

The Terrebonne Basin Barrier Shoreline (TBBS) consists of seven barrier islands. The planning objectives for the TBBS project are to (1) Provide an expanded footprint of minimized barrier island sections to provide the geomorphic form and ecologic function, (2) Restore and improve various barrier island habitats that provide essential habitats for fish, migratory birds, and other terrestrial and aquatic species, and (3) Increase sediment input to supplement long-shore sediment transport processes along the gulf shoreline by mechanically introducing compatible sediment, and increasing the ability of the restored area to continue to function and provide habitat for the 50 year period of analysis with minimum continuing intervention.

The Tentatively Selected Plan (TSP) only addresses four of these islands with only one island, Whiskey Island, recommended for immediate construction. We do not believe that the TSP or the Recommended Increment for Construction meet the objectives of the TBBS project or LCA 2004 Study, as listed above. We recommend that the USACE select an alternative that includes all seven islands and incorporates system-wide restoration of this barrier island chain. We have seen too many instances in the past, where project effectiveness was diminished due to the reduction in project size due to cost constraints.

We are also concerned that the alternative development for Alternative 10 (system-wide restoration) varies from Alternative 5 (TSP) development. There is no clear explanation why the TSP, which only restores 4 of the 7 islands, would have more AAHUs than Alternative 10, which restores all 7 islands. We question this analysis which would also impact the cost-effective analysis. If neither alternative can be constructed within the 2007 WRDA authorization, then it would be more logical to select Alternative 10 as the TSP and benefits all of the islands. A phased or incremental approach to construction could still be utilized under Alternative 10.

### Maintenance:

Barrier islands are ephemeral in nature. Erosion and roll-back of the islands are natural processes that will begin to affect the restoration project upon completion. This has been accounted for in the diminishing WVA benefits over the 50-year project timeframe. The Feasibility Report currently requires two renourishment projects for Whiskey Island over the 50-year project life at a total cost of \$173 million (FY20 and FY40). The Feasibility Report states that 65 acres of dune complex will be constructed from this project. In 10 years, approximately 8 acres will be lost. However, from FY10 to FY20, the Feasibility Report states that 57 acres will be lost. It is not clear what leads to the increase in loss rates from the first 10 years to Year 11-20.

There is great uncertainty concerning the need for renourishment which would be highly variable based on (1) restoration of one island versus the entire barrier island chain, (2) hurricane impacts over the 50-year timeframe, (3) loss and erosion rates of the dune structure, (4) sea level rise impacts, (5) secondary restoration measures that could be taken to increase sand capture (i.e., sand fencing, plantings, new technologies, etc.) and other factors.

CRCL1-01: The project delivery team evaluated a 7-island alternative. It was included in the final array and deemed not cost effective. The 4-island alternative was, however deemed cost effective and provides for a comprehensive system-wide restoration that addresses the near-term needs of the Terrebonne Barrier Islands.

CRCL1-02: Alternative 10 restored all 7 islands to their minimum geomorphic form and ecological function, while alternative 5 included larger scales of island nourishment that would allow for an additional 5-25 years of background erosion. This overbuild provides more benefits than the minimum design and addresses the most critical islands in the system.

CRCL1-03: There is a storm event built into the modeling every 20 years. During the period of years 11-20, this designed storm is anticipated to degrade the island at a faster rate than in years 0-10 as no storm is modeled in those years.

# Letter #1: Coalition to Restore Coastal Louisiana (CRCL)

It is extremely important that the State and Federal government make a financial commitment to the maintenance of the barrier islands for at least the next 50 years. However, we do not believe that the USACE can determine with any certainty what that commitment level needs to be. The Feasibility Report should recognize the need for maintenance without being rigid on the quantity and cost of renourishment. Instead, the USACE and State of Louisiana should rely on the Monitoring and Adaptive Management Plan to guide the operations and maintenance schedule and needs. Data collection, analysis and periodic evaluation should be conducted and the Adaptive Management team should make regularly scheduled recommendations for maintenance.

Area of Concern and Unresolved Issues:

The Feasibility Report identifies the use of rock or hardened structures as an Area of Concern and Unresolved Issue. The Feasibility Report states that "barrier island restoration using dredged material was a more cost-effective method of maximizing habitat created over the 50-year period of analysis." While many local officials support the use of rock in barrier island restoration, we do not support the use of rock over dredged-material. Rock should only be used after careful evaluation of all other options during engineering and design and in close consultation with academic scientists. We strongly believe that restoration of all seven barrier islands can be accomplished successfully without the use of hardened structures.

Conclusion:

It is imperative that the USACE complete the Feasibility Report and the Chief's Report for the six LCA projects before the end of the year. We cannot lose sight of the need to holistically restore this landscape. All efforts should be made to ensure that the TSPs meet the objective of the projects and the LCA 2004 Study.

We welcome the opportunity to discuss our recommendations at any time.

Sincerely,

Coalition to Restore Coastal Louisiana



Steven Peyronnin  
Executive Director



Natalie Snider  
Science Director

cc: Garret Graves, Coastal Protection and Restoration Authority  
Steve Mathies, Louisiana Office of Coastal Protection and Restoration  
Timothy Axtman, U.S. Army Corps of Engineers

CRCL1-04: Acknowledged. The State and USACE will be adaptively managing the project as outlined by the adaptive management plan.

CRCL1-05: The project delivery team evaluated a number of measures including hardened structures. We do believe there is a benefit, in certain instances, for the use of hardened structures as evidenced by the recommendation of a terminal groin at the western end of Raccoon Island.



# Letter #2: U.S. Fish and Wildlife Service (USFWS)



United States Department of the Interior

FISH AND WILDLIFE SERVICE  
646 Cajundome Blvd.  
Suite 400  
Lafayette, Louisiana 70506



*John*

March 4, 2010

Colonel Alvin Lee  
District Commander  
U.S. Army Corps of Engineers  
Post Office Box 60267  
New Orleans, Louisiana 70160-0267

Dear Colonel Lee:

Please reference Aaron Bass' March 3, 2010, electronic mail concerning the Louisiana Coastal Area (LCA) – Louisiana, Terrebonne Basin Barrier Shoreline Restoration Feasibility Study. That email requested information regarding threatened and endangered species and other species of concern that are located within the study area and that may be impacted by the proposed project. The U.S. Fish and Wildlife Service (Service) offers the following comments in accordance with provisions of the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and Migratory Bird Treaty Act (MBTA) (40 Stat. 755, as amended; 16 U.S.C. 703 et seq.).

Federally listed as an endangered species, West Indian manatees (*Trichechus manatus*) occasionally enter Lakes Pontchartrain and Maurepas, and associated coastal waters and streams during the summer months (i.e., June through September). Manatee occurrences appear to be increasing, and they have been regularly reported in the Amite, Blind, Tchefuncte, and Tickfaw Rivers, and in canals within the adjacent coastal marshes of Louisiana. They have also been occasionally observed elsewhere along the Louisiana Gulf coast. The manatee has declined in numbers due to collisions with boats and barges, entrapment in flood control structures, poaching, habitat loss, and pollution. Cold weather and outbreaks of red tide may also adversely affect these animals.

To avoid any impacts to that species the Service recommends the following measures be incorporated into all contracts for this project. All contract personnel associated with the project should be informed of the potential presence of manatees and the need to avoid collisions with manatees, which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973. All construction personnel are responsible for observing water-related activities for the presence of manatee(s). Temporary signs should be posted prior to and during all construction/dredging activities to remind personnel to be observant for manatees during active construction/dredging operations or within vessel movement zones (i.e., work area), and at least one sign should be placed where it is visible to the vessel operator. Siltation barriers, if used, should be made of material in which manatees could not become entangled, and should be properly secured and monitored. If a manatee is sighted within 100

USFWS2-01: Acknowledged. The recommended measures will be implemented during construction.



## Letter #2: U.S. Fish and Wildlife Service (USFWS)

yards of the active work zone, special operating conditions should be implemented, including: no operation of moving equipment within 50 feet of a manatee; all vessels should operate at no wake/idle speeds within 100 yards of the work area; and siltation barriers, if used, should be re-secured and monitored. Once the manatee has left the 100-yard buffer zone around the work area on its own accord, special operating conditions are no longer necessary, but careful observations should be resumed. Care should also be taken to avoid entrapment of individuals if any structure is to be installed that could be a barrier or impediment to manatee movement. Any manatee sighting should be immediately reported to the Service's Lafayette, Louisiana Field Office (337/291-3100) and the Louisiana Department of Wildlife and Fisheries, Natural Heritage Program (225/765-2821).

Federally listed as a threatened species, the piping plover (*Charadrius melodus*), as well as its designated critical habitat, occur along the Louisiana coast. Piping plovers winter in Louisiana, and may be present for 8 to 10 months annually. They arrive from the breeding grounds as early as late July and remain until late March or April. Piping plovers feed extensively on intertidal beaches, mudflats, sand flats, algal flats, and wash-over passes with no or very sparse emergent vegetation; they also require unvegetated or sparsely vegetated areas for roosting. Roosting areas may have debris, detritus, or micro-topographic relief offering refuge to plovers from high winds and cold weather. In most areas, wintering piping plovers are dependent on a mosaic of sites distributed throughout the landscape, because the suitability of a particular site for foraging or roosting is dependent on local weather and tidal conditions. Plovers move among sites as environmental conditions change, and studies have indicated that they generally remain within a 2-mile area. Major threats to this species include the loss and degradation of habitat due to development, disturbance by humans and pets, and predation.

On July 10, 2001, the Service designated critical habitat for wintering piping plovers (Federal Register Volume 66, No. 132). Their designated critical habitat identifies specific areas that are essential to the conservation of the species. The primary constituent elements for piping plover wintering habitat are those habitat components that support foraging, roosting, and sheltering and the physical features necessary for maintaining the natural processes that support those habitat components. Constituent elements are found in geologically dynamic coastal areas that contain intertidal beaches and flats (between annual low tide and annual high tide), and associated dune systems and flats above annual high tide. Important components (or primary constituent elements) of intertidal flats include sand and/or mud flats with no or very sparse emergent vegetation. Adjacent unvegetated or sparsely vegetated sand, mud, or algal flats above high tide are also important, especially for roosting plovers.

Based on the information that the Corps has provided to the Service regarding the subject project, the timing of construction between the islands (regardless of whether an island is in Phase I or II of the project) would likely affect the recovery time of benthic communities within the intertidal zones of those islands. Piping plovers feed upon benthic invertebrates and invertebrates found in organic material remaining after high tide events (i.e., wrack). The best available science indicates that benthic communities within the intertidal zones of barrier islands may take anywhere from 6 months to 2 years to fully recover, if there is a nearby source from which they can re-colonize an affected area. Because an entire island would be affected during one construction event, and because adjacent islands may undergo construction within 2 years or

USFWS2-02: The Biological Assessment contains a 'likely to adversely affect' determination for piping plover.

## Letter #2: U.S. Fish and Wildlife Service (USFWS)

less, the ability of those islands to provide enough suitable foraging habitat to piping plovers will likely be affected until all construction is completed. The Service, therefore, recommends that the Corps assess potential direct and indirect impacts to the piping plover and associated critical habitat within a biological assessment (BA) and determine whether the proposed project "is (or is not) likely to adversely affect" both the species and its designated critical habitat.

Endangered and threatened sea turtles forage in the nearshore waters, bays and sounds of Louisiana. The National Marine Fisheries Service (NMFS) is responsible for aquatic marine threatened or endangered species (i.e., Kemp's riddle and loggerhead sea turtles). Please contact Eric Hawk (727/824-5312) at the NMFS Regional Office in St. Petersburg, Florida, for information concerning those species in the aquatic environment. When sea turtles leave the aquatic environment and come onshore to nest, however, the Service is responsible for consultation. Consultation regarding nesting sea turtles should be conducted with this office.

The Kemp's ridley (*Lepidochelys kempii*) is an endangered sea turtle that occurs mainly in the coastal areas of the Gulf of Mexico and northwestern Atlantic Ocean. Juveniles and sub-adults occupy shallow, coastal regions and are commonly associated with crab-laden, sandy or muddy water bottoms. Small turtles are generally found in nearshore areas of the Louisiana coast from May through October. Adults may be abundant near the mouth of the Mississippi River in the spring and summer. Adults and juveniles move offshore to deeper, warmer water during the winter. Between the East Gulf Coast of Texas and the Mississippi River Delta, Kemp's ridleys use nearshore waters, ocean sides of jetties, small boat passageways through jetties, and dredged and nondredged channels. Kemp's ridley are not known to nest in Louisiana, however, their nesting range is apparently expanding. Major threats to this species include over-exploitation on their nesting beaches, drowning in fishing nets, and pollution.

Federally listed as a threatened species, loggerhead sea turtles (*Caretta caretta*) nest within the coastal United States from Louisiana to Virginia, with major nesting concentrations occurring on the coastal islands of North Carolina, South Carolina, and Georgia, and on the Atlantic and Gulf coasts of Florida. In Louisiana, loggerheads have been known to nest on the Chandeleur Islands. Nesting and hatching dates for the loggerhead in the northern Gulf of Mexico are from May 1 through November 30. Threats to this species include destruction of nesting habitat and drowning in fishing nets. When loggerhead sea turtles leave the aquatic environment and come onshore to nest the Service is responsible for consultation. Accordingly, we recommend that you address potential impacts to this species within the aforementioned BA if your activities would occur on beach areas during the loggerhead nesting season.

The proposed project would be located in an area where colonial nesting waterbirds are known to be present. To minimize disturbance to colonial nesting birds, the following restrictions on activity should be observed:

1. For colonies containing nesting brown pelicans, all activity occurring within 2,000 feet of a rookery should be restricted to the non-nesting period (i.e., September 15 through March 31). Nesting periods vary considerably among Louisiana's brown pelican colonies, however, so it is possible that this activity window could be altered based upon the dynamics of the individual colony. The Louisiana Department of Wildlife and

USFWS2-03: Acknowledged. The recommended measures will be implemented during construction.

## Letter #2: U.S. Fish and Wildlife Service (USFWS)

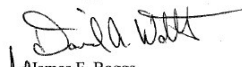
Fisheries' Fur and Refuge Division should be contacted to obtain the most current information about the nesting chronology of individual brown pelican colonies. Brown pelicans are known to nest on barrier islands and other coastal islands in Lafourche and Terrebonne parishes.

2. For colonies containing nesting wading birds (i.e., herons, egrets, night-herons, ibis, and roseate spoonbills), anhingas, and/or cormorants, all activity occurring within 1,000 feet of a rookery should be restricted to the non-nesting period (i.e., September 1 through February 15, exact dates may vary within this window depending on species present).
3. For colonies containing nesting gulls, terns, and/or black skimmers, all activity occurring within 650 feet of a rookery should be restricted to the non-nesting period (i.e., September 16 through April 1, exact dates may vary within this window depending on species present).

In addition, we recommend that on-site contract personnel be informed of the need to identify colonial nesting birds and their nests, and should avoid affecting them during the breeding season. Because of the extent of the proposed restoration project (i.e., entire and multiple island designs/phases) we understand that it may not be feasible to conduct all construction related activities outside of pertinent nesting seasons. The Service fully supports this restoration effort and is committed to working with your agency during project planning to resolve any potential conflicts that could occur as a result of migratory bird use of the proposed project area.

We appreciate the Corps' continued cooperation in the conservation of threatened and endangered species. If your staff needs further assistance in this matter, please have them contact Karen Soileau (337/291-3132) of this office.

Sincerely,

  
 James F. Boggs  
 Supervisor  
 Louisiana Field Office

cc: NMFS, Baton Rouge, LA  
 EPA, Dallas, TX  
 OCP, Baton Rouge, LA (Attn: Wes Leblanc)  
 LDWF, Natural Heritage Program, Baton Rouge, LA  
 SJB Group, Baton Rouge, LA (Attn: Aaron Bass)

USFWS2-04: Acknowledged. The recommended measures will be implemented during construction.

USFWS2-05: Acknowledged. The recommended measures will be implemented during construction.

USFWS2-06: Acknowledged. The recommended measures will be implemented during construction.

## Letter #3: U.S. Fish and Wildlife Service (USFWS)



United States Department of the Interior

OFFICE OF THE SECRETARY  
Office of Environmental Policy and Compliance  
1001 Indian School Road NW, Suite 348  
Albuquerque, New Mexico 87104



ER 10/540  
File 9043.1

July 19, 2010

Joan Exnicios  
Chief, Environmental Planning & Compliance Branch  
New Orleans District  
U.S. Army Corps of Engineers  
PO Box 60267  
New Orleans, Louisiana 70160-0267

Subject: Draft Supplemental Environmental Impact Statement (DSEIS) for the Louisiana Coastal Area (LCA) – Louisiana Terrebonne Basin Barrier Shoreline Restoration (TBBSR), Feasibility Study, Implementation, Terrebonne Parish, Louisiana

Dear Ms. Exnicios:

The U.S. Department of the Interior has reviewed the DSEIS and offers the following comments in accordance with provisions of the National Environmental Policy Act (NEPA) of 1969 (83 Stat. 852; 42 U.S.C. 4321 et seq.), the Fish and Wildlife Coordination Act (FWCA, 48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), and the Migratory Bird Treaty Act (MBTA) (40 Stat. 755, as amended; 16 U.S.C. 703 et seq.).

#### General Comments on the DSEIS

The DSEIS provides a description of fish and wildlife resources within the study area, the purpose and need for the proposed action, program objectives, critical needs and opportunities, and potential risks and uncertainties. That document, however, focuses primarily on impacts and benefits associated with the recommended increment of construction (i.e., Alternative 11 - Whiskey Island Plan C) and not on those impacts and benefits associated with the Tentatively Selected Plan (TSP) (i.e., Alternative 5 – Raccoon with Terminal Groin Plan E/Whiskey Plan C/Trinity Plan C/Timbalier Plan E). Because the U.S. Army Corps of Engineers will seek additional authorization to construct the TSP, the U.S. Fish and Wildlife Service recommends that the DSEIS be revised to include a more thorough analysis of the anticipated impacts and benefits of Alternative 5.

Alternative 11 is a component of a comprehensive strategy to sustain the wetlands and associated fish and wildlife resources of the Terrebonne Basin. The restoration of barrier island habitats would help reduce the decline in fish and wildlife habitat quality and detrital production over

### Letter #3: U.S. Fish and Wildlife Service (USFWS)

time. Though Alternative 11 would provide for many needed benefits, those benefits would be more substantial under a multiple island ecosystem approach (i.e., Alternative 5). As such, we recommend that the DSEIS highlight the importance of an ecosystem approach to restoration over a single island design.

Given the substantial adverse impacts to the project area barrier islands and their associated fish and wildlife resources that are expected to occur under future-without-project conditions, the FWS strongly supports authorization and implementation of the TBBSR project, as it would improve environmental conditions through the creation and/or restoration of those habitats. Specifically, the TBBSR project is designed to: 1) restore the minimized barrier island conditions that provide the geomorphic form and ecological function of the Terrebonne Basin barrier islands, 2) restore and improve various barrier island habitats that provide essential habitats for fish, migratory birds, and other terrestrial and aquatic species, mimicking, as closely as possible, conditions which occur naturally in the area, and 3) increase sediment input to supplement long-shore sediment transport processes along the gulf shoreline by mechanically introducing compatible sediment and increasing the ability of the restored area to continue to function and provide habitat with minimum continuing intervention.

The FWS's Lafayette Field Office provided the following fish and wildlife recommendations in their April 2010 Draft FWCA Report:

1. The FWS, National Marine Fisheries Service (NMFS), and Louisiana Department of Wildlife and Fisheries (LDWF) should be provided an opportunity to review and submit recommendations on future detailed planning reports and the draft plans and specifications on the Terrebonne Basin Barrier Shoreline Restoration Project addressed in this report.
2. Consultation should continue with the FWS and NMFS on detailed contract specifications to avoid and minimize potential impacts to piping plovers and their critical habitat, manatees, sea turtles, and migratory birds.
3. Avoid adverse impacts to nesting waterbird colonies through careful design project features and timing of construction. For colonies containing nesting gulls, terns, and/or black skimmers, all activity occurring within 650 feet of a rookery should be restricted to the non-nesting period (i.e., September 16 through April 1, exact dates may vary within this window depending on species present). For colonies containing nesting wading birds (i.e., herons, egrets, night-herons, ibis, and roseate spoonbills), anhingas, and/or cormorants, all activity occurring within 1,000 feet of a rookery should be restricted to the non-nesting period (i.e., September 1 through February 15, exact dates may vary within this window depending on species present). Prior to any such work, surveys should be conducted by qualified personnel during the colonial seabird nesting season to determine the presence and location of any such colonies. In addition, we recommend that on-site contract personnel be informed of the need to identify colonial nesting birds and their nests, and should avoid affecting them during the breeding season. Because of the extent of the proposed restoration we understand that it may not be feasible to conduct all construction-related activities outside of

USFWS3-01: Since we are requesting additional authorization for the NER plan (4-islands), the SEIS will highlight the benefits of both the 1-island TSP and the NER

USFWS3-02: Acknowledged. Agencies will be provided an opportunity to review all reports.

USFWS3-03: Acknowledged. Formal consultation will begin once the Biological Assessment is updated to include the NER plan along with the TSP.

USFWS3-04: Acknowledged. Recommended measures will be implemented during construction.

### Letter #3: U.S. Fish and Wildlife Service (USFWS)

pertinent nesting seasons. Should those activities overlap with colonial nesting waterbird nesting seasons further coordination with this office will be necessary.

- 4. To minimize disturbance to nesting colonies of brown pelicans, all activity occurring within 2,000 feet of a rookery should be restricted to the non-nesting period (i.e., September 15 through March 31). Prior to construction activities, surveys should be conducted by qualified personnel during the brown pelican nesting season to determine the presence and location of any such colonies. In addition, we recommend that on-site contract personnel be informed of the need to protect brown pelicans and their nests, and should avoid affecting them during the breeding season. Because of the extent of the proposed restoration we understand that it may not be feasible to conduct all construction-related activities outside of pertinent nesting seasons. Should those activities overlap with the brown pelican nesting season further coordination with this office will be necessary.
- 5. If the proposed project has not been constructed within 1 year or if changes are made to the proposed project, the Corps should re-initiate Endangered Species Act consultation with the FWS.
- 6. The newly created barrier island and back-barrier marsh, as well as the surrounding habitats that may be indirectly benefited by long-shore transport and sediment overwash, should be monitored over the project life for effectiveness and the results should be provided to all resource agencies. Development of those monitoring plans should be coordinated with all natural resource agencies.
- 7. All dredge material containment features should be breached or degraded, if necessary to restore tidal connectivity, once the marsh creation/nourishment areas have at least 80% coverage of emergent vegetation.
- 8. The FWS recommends that the Wine Island "Rock Ring" alternative be re-analyzed for potential inclusion in the TSP.
- 9. If authorized funding limits for this project are increased, the FWS recommends that Alternative 5 (with Wine Island design if feasible) be reconsidered for construction.
- 10. If additional dollars become available for constructing further increments of the TSP, the FWS recommends that the Corps fully coordinate with the natural resource agencies in prioritizing restoration of those islands.

**Specific comments on the SEIS**

Page 3-57, Section 3.4 Final Array of Alternatives – Information for Alternatives 11 and 12 should be added to this section, including tables summarizing habitat values for each.

USFWS3-05: Acknowledged. Recommended measures will be implemented during construction.

USFWS3-06: Acknowledged.

USFWS3-07: Monitoring and adaptive management specifics can be found in the Appendix.

USFWS3-08: Acknowledged. Recommended measures will be implemented during construction.

USFWS3-09: The Wine Island "Rock Ring" was evaluated and deemed not cost effective.

USFWS3-10: The State and USACE are requesting additional authorization to construct the NER plan (alternative 5).

USFWS3-11: Acknowledged.

USFWS3-12: Alternatives 11 and 12 are increments of the NER Plan and were added to the final array. A descriptive write-up and Tables for each island plan are also included. See Table 3-35 and Table 3-36.

## Letter #3: U.S. Fish and Wildlife Service (USFWS)

4

Page 3-68, Table 3.29 Summary of Final Array of Alternatives – Summary information for Alternatives 11 and 12 should be added to this table.

Page 3-70, Section 3.5 Comparison of Alternative – This section should be revised to include information for Alternatives 11 and 12.

Page 3-82, Section 3.8.1 Renourishment, Lines 3571 and 3573 – The AAHUs should be updated to reflect the most recent WVA calculations.

Page 4-16, Section 4.2 Significant Resources – The FWS recommends adding a sub-section which discusses colonial nesting water birds.

Page 4-65, Section 4.2.11.2, Line 6574 – This section indicates that 15 federally listed threatened or endangered species, either under the FWS's or NMFS's jurisdiction, may be located within the study area. Table 4-9, however, identifies seven federally-listed species that may occur within the subject area. The FWS recommends that this section be revised for consistency.

Page 5-1, Section 5.0 Environmental Consequences – The FWS recommends addressing direct, indirect, and cumulative impacts of the proposed project to colonial nesting water birds in this section. In addition, we recommend including a discussion on how potential adverse impacts to those species will be avoided.

Page 5-39, Section 5.6.2 Wetland Vegetation Resources – Throughout this section it is reported that negative acres of intertidal habitat would be restored and rehabilitated under implementation of each of the alternatives within the final array. This is confusing and should be clarified within the Final EIS.

Page 5-43, Section 5.6.6.5.2 Indirect, Line 9368 – This sentence should read "Alternative 5 would restore and rehabilitate 3,555 acres . . ." not 3.555 acres.

Page 5-53, Section 5.7.5.4 Alternative 5 – This section does not adequately address direct, indirect, or cumulative impacts to wildlife and their habitats associated with this alternative. Specifically, this section states that direct, indirect, and cumulative impacts associated with Alternative 5 are similar to Alternative 11. It is anticipated, however, that benefits would be more substantial under a multiple island ecosystem approach versus a single island design. We recommend that the Final EIS include a more thorough analysis of the anticipated impacts and benefits of Alternative 5.

Page 5-73, Section 5.11 Threatened and Endangered Species – The brown pelican and bald eagle are identified as federally-listed species that may be impacted by the proposed project. Both of those species, however, have been delisted. This section should be revised accordingly.

Page 5-79, Section 5.11.5.4 Alternative 5 – This section does not adequately address direct, indirect, or cumulative impacts to threatened and endangered species with implementation of Alternative 5. The FWS recommends that the Final EIS include a more accurate description of the anticipated impacts to federally-listed threatened and endangered species associated with this alternative.

USFWS3-13: See response #12.

USFWS3-14: See response #12.

USFWS3-15: Will update to include most recent information.

USFWS3-16: Will revise for consistency.

USFWS3-17: Acknowledged. Will include requested information.

USFWS3-18: Acknowledged. Current version clarifies negative values.

USFWS3-19: Typo noted.

USFWS3-20: Acknowledged. This section has been revised to include a more thorough analysis of the NER.

USFWS3-21: Acknowledged. Will revise species list accordingly.

USFWS3-22: Acknowledged. A more thorough description of anticipated impacts to listed species will be provided.



# Letter #3: U.S. Fish and Wildlife Service (USFWS)

Page 7-1, Section 7.0 Coordination and Compliance – The FWS recommends adding a section which discusses compliance with the Migratory Bird Treaty Act.

**Comments on the BA**

Federally-listed as a threatened species, the piping plover (*Charadrius melodus*), as well as its designated critical habitat, occur along the Louisiana coast. Piping plovers winter in Louisiana, and may be present for 8 to 10 months annually. They arrive from the breeding grounds as early as late July and remain until late March or April. Piping plovers feed extensively on intertidal beaches, mudflats, sand flats, algal flats, and wash-over passes with no or very sparse emergent vegetation; they also require unvegetated or sparsely vegetated areas for roosting. Roosting areas may have debris, detritus, or micro-topographic relief offering refuge to plovers from high winds and cold weather. In most areas, wintering piping plovers are dependent on a mosaic of sites distributed throughout the landscape, because the suitability of a particular site for foraging or roosting is dependent on local weather and tidal conditions. Plovers move among sites as environmental conditions change, and studies have indicated that they generally remain within a 2-mile area. Major threats to this species include the loss and degradation of habitat due to development, disturbance by humans and pets, and predation.

On July 10, 2001, the FWS designated critical habitat for wintering piping plovers (Federal Register Volume 66, No. 132). Their designated critical habitat identifies specific areas that are essential to the conservation of the species. The primary constituent elements for piping plover wintering habitat are those habitat components that support foraging, roosting, and sheltering and the physical features necessary for maintaining the natural processes that support those habitat components. Constituent elements are found in geologically dynamic coastal areas that contain intertidal beaches and flats (between annual low tide and annual high tide), and associated dune systems and flats above annual high tide. Important components (or primary constituent elements) of intertidal flats include sand and/or mud flats with no or very sparse emergent vegetation. Adjacent unvegetated or sparsely vegetated sand, mud, or algal flats above high tide are also important, especially for roosting plovers.

Implementation of the proposed project would likely affect the recovery time of benthic communities within the intertidal zones of those islands under construction. Piping plovers feed upon benthic invertebrates and invertebrates found in organic material remaining after high tide events (i.e., wrack). The best available science indicates that benthic communities within the intertidal zones of barrier islands may take anywhere from 6 months to 2 years to fully recover, if there is a nearby source from which they can re-colonize an affected area. Because an entire island would be affected during one construction event, and because adjacent islands may undergo construction within 2 years or less, the ability of those islands to provide enough suitable foraging habitat to piping plovers will likely be affected until all construction is completed. While overall project impacts to piping plovers and their designated critical habitat would be beneficial, unavoidable temporary adverse impacts are anticipated due to the placement of sediments onto existing beach and dune habitats during construction and renourishment of the barrier islands. Accordingly, the FWS cannot concur with the Corps "not likely to adversely affect" determination and recommends that the Corps initiate formal section 7 consultation.

USFWS3-24: Acknowledged.

USFWS3-25: The Biological Assessment has been revised to include a 'likely to adversely affect' determination for piping plover.

## Letter #3: U.S. Fish and Wildlife Service (USFWS)

6

The FWS's Lafayette Field Office appreciates the opportunity to provide comments on the subject document. If your staff has additional questions regarding our comments, please contact Karen Soileau at (337) 291-3132.

Sincerely,



Stephen R. Spencer  
Regional Environmental Officer

cc: U.S. Environmental Protection Agency, Dallas, TX  
Attn: Barbara Keeler  
NOAA's National Marine Fisheries Service, Baton Rouge, LA  
Attn: Mr. Richard Hartman  
Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA  
Attn: Mr. Kyle Balkum  
Louisiana Department of Wildlife and Fisheries, Natural Heritage Program,  
Baton Rouge, LA  
Louisiana Office of Coastal Protection and Restoration, Baton Rouge, LA  
Attn: Joseph Leblanc

## Letter #4: U.S. Fish and Wildlife Service (USFWS)



United States Department of the Interior

FISH AND WILDLIFE SERVICE  
646 Cajundome Blvd.  
Suite 400  
Lafayette, Louisiana 70506

July 23, 2010

Colonel Alvin B. Lee  
District Engineer  
U.S. Army Corps of Engineers  
Post Office Box 60267  
New Orleans, Louisiana 70160-0267

Dear Colonel Lee:

Please reference your agency's June 17, 2010, draft Biological Assessment (BA) of the proposed Louisiana Coastal Area (LCA) – Terrebonne Basin Barrier Shoreline Restoration (TBBSR) Feasibility Study recommended increment of construction and its possible effects on the threatened piping plover (*Charadrius melodus*) and its designated critical habitat. The U.S. Army Corps of Engineers (Corps) has determined that the proposed action is not likely to adversely affect the piping plover or its critical habitat. The U.S. Fish and Wildlife Service (Service) has reviewed the information provided and offers the comments in accordance with the provisions of Section 7 of the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

The TBBSR project objective is restoration of the Timbalier and Isles Dernieres barrier island chains (consisting of Whiskey, Raccoon, Trinity, and Timbalier Islands) located in Terrebonne and Lafourche Parishes, Louisiana, by enlarging the existing barrier islands and closing as many breaches as possible. According to the BA, the Corps has chosen the National Ecosystem Restoration (NER) Plan as the Tentatively Selected Plan for implementation and it consists of enlarging Whiskey, Raccoon, Trinity, and Timbalier Islands. That plan cannot be constructed because it exceeds the authorized cost in the Water Resources Development Act of 2007; however, the Corps plans to seek authorization to eventually restore all four islands. Consequently, the Corps plans to only construct a subset of that plan (i.e., Whiskey Island), referred to as the recommended increment of construction. Informal consultation between the Corps and the Service regarding potential project effects to listed species and their critical habitat has been ongoing since early 2009.

According to the BA, the recommended increment of construction (proposed plan) would be to restore the geomorphic form and ecological function of Whiskey Island while providing an additional five years of protection from background erosion and subsidence. The island would also require two renourishment intervals (at target years 20 and 40) in order to maintain that form and function throughout the 50-year project life. The Whiskey Island portion would be designed to avoid existing mangrove habitat and complement an existing Coastal Wetland Planning Protection and Restoration Act (CWPPRA) project (i.e., 316 acres of marsh were created on the bay side of the island) that was completed in 2009. That project would involve constructing a dune and beach complex (with sand fencing) on the Gulf side of the island with a marsh platform along the bay side of the island on the western end of the island, which would temporarily adversely impact all

## Letter #4: U.S. Fish and Wildlife Service (USFWS)

existing piping plover critical habitat on that island. If the full NER plan is authorized, similar restoration features would also be constructed on Trinity, Raccoon, and Timbalier Islands and would result in similar impacts to piping plover critical habitat on those islands; however, those project features were not fully addressed in the BA. Therefore, the Corps should consult on the NER plan.

The Service cannot concur with the Corps' "not likely to adversely affect" determination at this time because additional information is needed regarding impacts to the piping plover and its critical habitat for both the recommended increment of construction and the NER plan. To ensure compliance with the ESA, the Corps should initiate formal consultation with the Service regarding the proposed project. Accordingly, the following information will be required to initiate that consultation:

1. The analysis of project-related impacts to the piping plover should be discussed separately from the analysis of the critical habitat so that the Corps' rationale for each determination is clearly defined. The analysis for effects to the piping plover should include a baseline of current habitat conditions and availability of adjacent suitable habitats. That analysis should include the likelihood of less suitable foraging substrate in areas that have been impacted (e.g., oiled and cleaned once or multiple times) during the Deepwater Horizon oil spill event, both within the project area and within adjacent areas that birds would disperse into as a result of implementing this project (i.e., construction period, benthos recovery period). That analysis should also provide the best possible estimate of the anticipated time of construction relative to the end of all oil-related cleanup activities.
2. The analysis of project-related impacts to designated piping plover critical habitat should include a baseline of current habitat conditions within suitable habitat areas on the island(s) being affected by the project. Whiskey, Trinity, and Raccoon Islands are located within Unit LA-4, while Timbalier Island is located within Unit LA-5. Suitable habitat within both Units includes the entire island(s) to mean low low water (MLLW) where primary constituent elements occur; thus, it does not include existing vegetated areas not used by the piping plover, as indicated in the BA for Whiskey Island. That analysis should include the likelihood of less than suitable habitat in areas that have been impacted (e.g., oiled and cleaned once or multiple times) during the Deepwater Horizon oil spill event within the project area as a result of implementing this project (i.e., construction period, benthos recovery period). That analysis should also provide the best possible estimate of the anticipated time of construction relative to the end of all oil-related cleanup activities.
3. The analysis for critical habitat should also include a best possible estimate of the current acreage of critical habitat (i.e., any portion of the islands that do not contain dense vegetation) remaining on the island(s), how much of that acreage would be affected during project implementation, the resulting available habitat at the end of construction, and the remaining habitat estimated for the life of the project (per island). When conducting that analysis, please include the lag time of 6 months to 2 years for benthos recovery and how that would be affected by the chosen construction methodology.

USFWS4-01: The Biological Assessment has been revised to include a 'likely to affect' determination for piping plover and includes affects of both the TSP and NER.

USFWS4-02: Acknowledged. Report has been revised.

USFWS4-03: Acknowledged. Report has been revised.

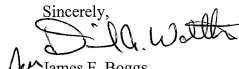
USFWS4-04: Acknowledged. Report has been revised.

## Letter #4: U.S. Fish and Wildlife Service (USFWS)

4. The analysis of critical habitat should also include a discussion of the proposed action on the natural dynamic processes of the barrier island(s). For example, would project implementation change the size/shape/orientation of the island(s) such that the long-shore transport of sediments would be disrupted and/or prevent the creation of overwash fans, sand spits, mud flats, and other suitable habitat features, or would the project improve such processes by adding additional sediment into the system, increasing island longevity, etc.?
5. A timeline of construction for both the NER plan as a whole and for each individual island should be analyzed in terms of how the benthic fauna would recover on each island and thus provide suitable foraging habitat for wintering piping plovers for the duration of project construction. When conducting that analysis, please include the lag time of 6 months to 2 years for benthos recovery and how that would be affected by the chosen construction methodology. Given our current knowledge of the ability of benthic fauna to re-colonize disturbed areas, we recommend that an "every other island" approach to constructing the NER plan be considered as a way to minimize project-related effects to the piping plover and critical habitat.

The formal consultation process for the project cannot begin until we receive the above information, or a statement explaining why that information cannot be made available. We will confirm our receipt of that information; our notification letter to you will also outline the dates within which formal consultation on the proposed action should be complete and our biological opinion delivered. Section 7 of the ESA allows the Service up to 90 calendar days to conclude formal consultation with your agency and an additional 45 days to prepare our biological opinion. As a reminder, 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 and threatened species or destroying or modifying their critical habitats.

We appreciate the opportunity to provide these comments. If you have any questions or concerns about this consultation or the consultation process in general, please feel free to contact Ms. Brigitte Firmin (337/291-3108) of this office.

Sincerely,  
  
 James F. Boggs  
 Supervisor  
 Louisiana Field Office

cc: FWS, Ecological Services, Panama City, FL  
 LDWF, Natural Heritage Program, Baton Rouge, LA  
 LDWF, Office of Wildlife, Coastal Operations, Baton Rouge, LA  
 OCP, Baton Rouge, LA

USFWS4-05: Acknowledged. Report has been revised.

USFWS4-06: Acknowledged. Report has been revised.

# Letter #5: U.S. Environmental Protection Agency (USEPA)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733

JUL 21 2010

Colonel Alvin B. Lee  
New Orleans District  
U.S. Army Corps of Engineers  
P.O. Box 60267  
New Orleans, LA 70160-0267

Dear Colonel Lee:

In accordance with the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the Environmental Protection Agency (EPA) Region 6 has reviewed the Corps of Engineers (Corps) May 2010, Draft Supplemental Environmental Impact Statement (DSEIS) for the Louisiana Coastal Area (LCA) Terrebonne Basin Barrier Shoreline Restoration project, Terrebonne Parish, Louisiana. With this letter and enclosed Detailed Comments, EPA offers our rating and comments on this DSEIS.

As we have previously stated, EPA supports the LCA program and remains committed to working with the Corps of Engineers (Corps) and our other partners to help ensure expedited implementation of specific LCA restoration projects. We strongly support measures to restore Louisiana's barrier islands, including the Corps recommended project (i.e., "Whiskey Plan C"). EPA rates the subject DSEIS as "LO" i.e. Lack of Objections.

EPA appreciates the opportunity to review the DSEIS's. If you have any questions about the 309 Review Process, please contact Michael Jansky of my staff at (214) 665-7451 or by e-mail at [jansky.michael@epa.gov](mailto:jansky.michael@epa.gov). If you questions or wish to discuss the technical aspects of our comments, contact John Ettinger at (504) 862-1119. Please send our office two copies of the Final SEIS when it is sent to the Office of Federal Activities, EPA (Mail Code 2252A), Ariel Rios Building, 1200 Pennsylvania Ave, N.W., Washington, D.C. 20460.

Sincerely yours,

Cathy Gilmore, Chief  
Office of Planning  
and Coordination 6ENXP

Enclosure

## Letter #5: U.S. Environmental Protection Agency (USEPA)

**DETAILED COMMENTS  
ON THE  
NEW ORLEANS DISTRICT  
US ARMY CORPS OF ENGINEERS  
DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT  
FOR THE  
TERREBONE BASIN BARRIER SHORELINE RESTORATION**

**COMMENT**

EPA concurs with the Corps decision in this case not to use rocks or other hard structures as part of the proposed Whiskey Island restoration project. Coastal restoration is most effective when it mimics natural structures and processes. Rocks and other hard structures are artificial measures, which are not in any way consistent with the natural structure and processes associated with Louisiana's barrier islands. As acknowledged in the subject DSEIS, the use of rocks and other hard structures can result in adverse impacts, including increased erosion and disruption of sediment processes. Conversely, measures which focus on restoring sediments to barrier islands have the potential to prolong the existence of such islands, while allowing for natural shifting and island reformation in response to storms. EPA also concurs with the Corps' assessment that Whiskey Plan C could complement Coastal Wetlands Planning, Protection and Restoration Act barrier island restoration work completed on Whiskey Island.

The LCA program in general and this barrier island project in particular represent critical near-term restoration measures. These efforts should not, however, be mistaken for the larger and more comprehensive effort needed to address coastal wetland loss in Louisiana on the scale and scope warranted. The ongoing oil spill in the Gulf of Mexico and its impacts on Louisiana's valuable coastal wetlands and aquatic resources only underscore this point. Nevertheless, this and other LCA projects can be viewed as stepping stones towards larger and more aggressive projects, and offer valuable learning and adaptive management opportunities that will help in that regard.

The study area for this project appears to have been impacted by the BP oil spill. At this point, it is unclear whether and to what extent any such oil impacts would affect implementation of the proposed project. Moving forward, the Corps should be prepared to assess, when necessary, whether oil remains in the project area and, if so, whether any project modifications or additional environmental analysis would be warranted. The proposed project is designed to stay within an authorized funding cap. Should funding beyond the authorized limit become available (e.g., in association with the oil spill), we would recommend the Corps revisit the alternatives analysis for this project to more rigorously evaluate and compare options that more comprehensively address barrier island restoration needs in Terrebonne Basin.

We would again point out the connection between the ongoing LCA effort to develop near-term restoration projects and the interagency effort to prioritize and expedite coastal restoration projects pursuant to the March 2010, Roadmap for Restoring

USEPA5-01: The impacts of the Deepwater Horizon oil spill on coastal Louisiana are uncertain at this time (May 11, 2010). This spill could potentially adversely impact USACE water resources projects and studies within the Louisiana coastal area. Potential impacts could include factors such as changes to existing or baseline conditions, as well as changes to future-without and future with project conditions. The USACE will continue to monitor and closely coordinate with other Federal and state resource agencies and local sponsors in determining how to best address any potential problems associated with the oil spill that may adversely impact USACE water resources development projects/studies. This could include revisions to proposed actions as well as the generation of supplemental environmental analysis and documentation for specific projects/studies as warranted by changing conditions.

## Letter #5: U.S. Environmental Protection Agency (USEPA)

-2-

Ecosystem Resiliency and Sustainability (Roadmap). The interagency process initiated by the Roadmap provides a valuable opportunity to identify the most promising LCA projects and focus limited resources to ensure that such projects are constructed in a timely fashion.

Finally, please note that schedule and resource constraints have affected EPA's ability to fully engage in the interagency development and review of this LCA project. We greatly respect the views of our state and Federal partner agencies with responsibilities and expertise pertaining to fish and wildlife impacts. We would defer to some extent to the recommendations of the U.S. Fish and Wildlife Service, National

Marine Fisheries Service, and Louisiana Department of Wildlife and Fisheries on any additional information and analysis needed for resources within their purview. We would encourage the Corps to fully address any such needs identified by these agencies.

Thanks again for your continued collaboration with EPA on this important effort. We look forward to working with you and your staff on the ongoing effort to further these and other components of the LCA program. If you have any questions or wish to discuss this matter further, please contact John Ettinger at (504) 862-1119.



# Letter #6: Louisiana Department of Wildlife and Fisheries (LDWF)

07/12/2010 13:53 2257652625

DAVE BUTLER

PAGE 01/02



BOBBY JINDAL  
GOVERNOR

State of Louisiana

DEPARTMENT OF WILDLIFE AND FISHERIES  
OFFICE OF WILDLIFE

ROBERT J. BARHAM  
SECRETARY

JIMMY L. ANTHONY  
ASSISTANT SECRETARY

July 12, 2010

Attn: Sandra Stiles  
Planning, Programs, and Project Management Division  
Environmental Planning and Compliance Branch  
United States Army Corps of Engineers  
P. O. Box 60267  
New Orleans, LA 70160-0267

RE: *Ecosystem Restoration Project - Terrebonne Basin Barrier Shoreline Restoration*  
*Applicant: U.S. Army Corps of Engineers-New Orleans Division*  
*Notice Date: June 11, 2010*

Dear Ms. Stiles:

The professional staff of the Louisiana Department of Wildlife and Fisheries (LDWF) has reviewed the above referenced notice. Based upon this review, the following has been determined:

LDWF believes that the Wine Island "Rock Ring" alternative should be re-analyzed for inclusion into the plan. Further, if additional funding becomes available, it is our opinion that the lead agencies should consider the inclusion of additional protective hard structures into the plan. It has been our experience that hard structures such as segmented breakwaters add considerable longevity to barrier island restoration projects, offering high value for their cost.

Portions of the proposed activity are within Isles Dernieres Barrier Islands Refuge. No activities shall occur on any LDWF Wildlife Management Area or Refuge without obtaining a Special Use Permit from LDWF. Please contact Mike Carlross at 225-765-2814 for more information.

The Louisiana Department of Wildlife and Fisheries appreciates the opportunity to review and provide recommendations to you regarding this proposed activity. Please do not hesitate to contact Habitat Section biologist Matthew Weigel at 225-763-3587 should you need further assistance.

Sincerely,

Kyle F. Balkum  
Biologist Program Manager

mw

LDWF6-01: The appropriate Special Use Permits will be obtained from LDWF prior to construction of the project.

LDWF6-02: We generally concur with the value of both of these suggestions. The planning development team considered the Wine Island "Rock Ring" alternative, as well as different protective hard structures as part of the alternative plan formulation process. If additional funding becomes available, the USACE would reconsider restoration alternatives and measures. However, the Wine Island "Rock Ring" and hard structure features were screened out during the plan formulation process. No additional alternative plan development or screening is anticipated due to Congressional-mandated completion dates for the LCA study reports by the end of 2010.

## Letter #6: Louisiana Department of Wildlife and Fisheries (LDWF)

07/12/2010 13:53 2257652625

DAVE BUTLER

PAGE 02/02

Page 2  
*Ecosystem Restoration Project - Terrebonne Basin Barrier Shoreline Restoration*  
July 12, 2010

cc: Matthew Weigel, Biologist  
EPA, Marine & Wetlands Section  
USFWS Ecological Services  
Mike Carloss, Assistant Administrator

# Letter #7: Louisiana Department of Wildlife and Fisheries (LDWF)

07/13/2010 16:31 2257652625

DAVE BUTLER

PAGE 02/02

BM



BOBBY JINDAL  
GOVERNOR

State of Louisiana  
DEPARTMENT OF WILDLIFE & FISHERIES

ROBERT J. BARNHAM  
SECRETARY

July 13, 2010

Gregory J. Ducote, Administrator  
Louisiana Department of Natural Resources  
Coastal Management Division  
P.O. Box 44487  
Baton Rouge, LA 70804-4487

RE: Consistency Number: C20100188  
Applicant: Corps of Engineers - New Orleans District  
Notice Date: June 22, 2010

Dear Mr. Ducote:

The professional staff of the Louisiana Department of Wildlife and Fisheries (LDWF) has reviewed the notice referenced above. The following recommendations have been provided by the appropriate biologist(s):

**Ecological Studies:**

Portions of the proposed activity are within Isles Dernieres Barrier Islands Refuge. No activities shall occur on any LDWF Wildlife Management Area or Refuge without obtaining a Special Use Permit from LDWF. Please contact Mike Carloss at 225-765-2814 for more information.

LDWF believes that the Wine Island "Rock Ring" alternative should be re-analyzed for inclusion into the plan. Further, if additional funding becomes available, it is our opinion that the lead agencies should consider the inclusion of additional protective hard structures into the plan. It has been our experience that hard structures such as segmented breakwaters add considerable longevity to barrier island restoration projects, offering high value for their cost.

The Louisiana Department of Wildlife and Fisheries appreciates the opportunity to review and provide recommendations to you regarding this proposed activity. Please do not hesitate to contact LDWF Permits Coordinator Dave Butler at 225-763-3595 should you need further assistance.

Sincerely,

Kyle F. Balkum  
Biologist Program Manager

LDWF7-01: The appropriate Special Use Permits will be obtained from LDWF prior to construction of the project.

LDWF7-02: We generally concur with the value of both of these suggestions. The planning development team considered the Wine Island "Rock Ring" alternative, as well as different protective hard structures as part of the alternative plan formulation process. If additional funding becomes available, the USACE would reconsider restoration alternatives and measures. However, the Wine Island "Rock Ring" and hard structure features were screened out during the plan formulation process. No additional alternative plan development or screening is anticipated due to Congressional-mandated completion dates for the LCA study reports by the end of 2010.

## Letter #8: Terrebonne Parish Consolidated Government (TPCG)



MICHEL H. CLAUDET  
PARISH PRESIDENT

OFFICE OF THE PARISH PRESIDENT  
TERREBONNE PARISH CONSOLIDATED GOVERNMENT  
P. O. Box 6097  
HOUMA, LOUISIANA 70361-6097



(985) 873-6401  
FAX: (985) 873-6409  
E-MAIL: mhclaudet@tpcg.org

July 26, 2010

Dr. William Klein, Environmental Section  
US Army Corps of Engineers, MVN NOD  
P.O. Box 60267  
New Orleans, Louisiana 70160-0267

Subject: Louisiana Coastal Area (LCA) Draft Feasibility Report  
Terrebonne Basin Barrier Shoreline Restoration Feasibility Study

Dear Dr. Klein:

Thank you for the opportunity to provide comments on the LCA Feasibility Study on the Restoration of the Terrebonne Basin Barrier Shoreline. As I am sure you are aware, the citizens of Terrebonne Parish have long relied on our barrier island systems as a first line of defense against storm surges from the Gulf of Mexico. In addition, the barrier island habitats are essential breeding grounds for many of the fish species that provide the basis of our commercial and recreational fishing industries, as well as vital nesting habitat for native and migratory birds.

The project study area encompasses the Isle Dernieres and Timbalier Island Chains. Each of these systems is identified as specific Environmental Management Units (EMU) in the Terrebonne Parish Coastal Zone Management (CZM) Program Document, adopted by ordinance in the year 2000.

The Terrebonne Parish CZM document identifies the following programmatic goals and objectives for the Terrebonne Parish Coastal Zone, and any projects developed as part of this ongoing study authorization should be consistent with the following:

- 1) Protection of Bay/Lake/Gulf Shorelines
- 2) Establishment of reef zones;
- 3) Restore Deteriorated Back-Barrier Marshes;
- 4) Increased Sediment Delivery; and
- 5) Maximize the Beneficial Use of Dredged Material.

As presented, the Tentatively Selected Project Alternative 11, (TSP) proposes only the restoration of Whiskey Island, in order to remain within the authorized construction spending cap approved in the Water Resources Development Act of 2007 (WRDA). It is anticipated that Raccoon Island may also receive indirect benefits from this plan, as the

## Letter #8: Terrebonne Parish Consolidated Government (TPCG)

recipient of sands transported via the natural process of the westward migration of long shore sediments.

While it is agreed that the Whiskey Island project will meet the criteria imposed as a function of the authorized funding limitations, this project as a stand- alone, does not meet the environmental mandate of the WRDA authorization: i.e. total restoration of the ecosystem functions of the barrier shoreline systems.

We support the efforts of the U.S. Army Corps of Engineers and the State of Louisiana, through its Office of Coastal Protection and Restoration, to proceed with the TSP/ Alternative 11 in order to meet time and monetary constraints. However, we implore our leadership at the State and Federal levels to aggressively pursue authorization and appropriations for the construction of the NER/TSP/Alternative 5, which includes the restoration of Raccoon, Whiskey, Trinity and Timbalier Islands to minimal geomorphic form and ecologic functions.

In addition, it is the expressed preference of the members of the Terrebonne Parish Coastal Zone Management and Restoration Advisory Committee that newly developed, currently available non-rock alternatives be considered for protection and stabilization of Gulf shorelines and in the establishment of reef zones.

Thank you for the opportunity to comment on this feasibility study. Please do not hesitate to contact me should you have any questions or require additional information.

Sincerely,



Michel H. Claudet

Cc: Council Members  
CZM & RAC Members  
Al Levron, Parish Manager  
Leslie Suazo, Coastal Restoration  
Project File  
Council Reading File

TPCG8-01: Concur. The planning process dictates development of a cost effective plan within the established budget. The proposed four-island NER plan was developed to better meet the mandate of the WRDA authorization. A seven-island plan would be ideal, but proved to be not cost effective.

TPCG8-02: During the PED process such alternatives will be studied and considered for inclusion in the final design.

## Letter #9: Louisiana Department of Environmental Quality (LDEQ)



REPLY TO  
ATTENTION OF:

DEPARTMENT OF THE ARMY  
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 60267  
NEW ORLEANS, LOUISIANA 70160-0267

June 10, 2010

Planning, Programs, and  
Project Management Division  
Environmental Planning  
and Compliance Branch

Melvin C. Mitchell, Sr.  
Louisiana Dept. of Env. Quality  
Water Quality Certifications Section  
P.O. Box 4313  
Baton Rouge, LA 70821-4313

Dear Mr. Mitchell, Sr.:

The 2004 Louisiana Coastal Area (LCA) Report identified critical projects, multiple programmatic authorizations, and ten additional required feasibility studies for the LCA. When the Water Resources Development Act of 2007 was passed, it included authorization under Title VII, for the LCA Program and specific authorization for feasibility reports on six of the ten near-term elements.

Two elements were determined to be hydrologically intertwined and the planning efforts were combined into Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multipurpose Operation of Houma Navigation Lock EIS Lafourche, Terrebonne, St. Mary Parish, Louisiana. The Terrebonne Basin Barrier Shoreline Restoration Study EIS (Volume V) has been completed under a separate feasibility effort due to a need for additional alternatives analysis and increasing uncertainties resulting from the Deepwater Horizon oil spill of the Louisiana coast. Four of the Draft EIS and a Summary Document (Volume I) were previously released for public review on May 21, 2010:

Amite River Diversion Canal Modification EIS (Volume II)  
Convey Atchafalaya River Water to Northern Terrebonne Marsh /  
Multipurpose Operation of the Houma Navigation Lock EIS (Volume III)  
Small Diversion at Convent / Blind River EIS (Volume IV)  
Medium Diversion at White Ditch EIS (Volume VI)

## Letter #9: Louisiana Department of Environmental Quality (LDEQ)

- 2 -

Enclosed with this letter are volumes I and V. A copy of the other draft EIS, previously provided for public review on May 21, 2010, are available upon request.

The USACE proposes to restore approximately 1,272 acres of dune, supratidal, and intertidal habitat on the Terrebonne Basin Barrier Shoreline. The Terrebonne Basin Barrier Shoreline is comprised of two barrier island reaches: Isles Dernieres and the Timbalier Islands. The Isles Dernieres reach includes Raccoon, Whiskey, Trinity, East, and Wine Islands. The Timbalier reach includes Timbalier and East Timbalier Islands. These barrier islands have undergone significant reductions in size due to a number of natural processes and human actions including lack of sediment, storm-induced erosion and breaching, subsidence, sea level rise and hydrologic modifications such as navigation and oil and gas canals. These habitat losses have had a direct adverse impact on wildlife and fisheries resources including threatened and endangered species. Loss of the barrier island habitat also leaves the fragile saline, brackish, and fresh marshes in the upper reaches of the Terrebonne Basin more vulnerable to the high energy marine coastal processes which have exacerbated wetland loss in these areas. The barrier islands also protect oil and gas infrastructure investments including hundreds of wells and pipelines which are of regional and national importance. Modeling has shown that the barrier islands reduce storm surges which can mitigate the damage associated with tropical storms on human populations and infrastructure in Terrebonne and Lafourche Parishes.

Without action, this critical geomorphic feature that isolates the Terrebonne Basin estuaries from the Gulf of Mexico will continue to degrade, existing breaches will widen and new breaches will form, and portions of the project area will disappear in the near term. Raccoon, Whiskey, Trinity, East, and Wine Islands are expected to completely disappear by 2052 if no action is taken. By 2062, Timbalier and East Timbalier Islands will only have 6 acres of subaerial habitat left.

Ten alternative plans, including the No Action plan, were developed and evaluated as the Final Alternative Array. Two additional plans (Alternatives 11 and 12) were later added to the final array once it became apparent that there were no alternatives that could be constructed within the 2007 Water Resources Development Act authorization. Alternative 5 (Raccoon with Terminal Groin (Plan E) / Whiskey (Plan C) / Trinity (Plan C) / and Timbalier (Plan E)) was selected as the National Ecosystem Restoration (NER) / Tentatively Selected Plan (TSP). The NER/TSP would increase the longevity of the geomorphologic form and ecologic function of the four islands in the Terrebonne Basin barrier system by creating a total of 472 acres of dune habitat, 4,320 acres of supratidal habitat, and 1,048 acres of intertidal habitat immediately after construction. The islands will also be periodically renourished in order to maintain their geomorphologic form and ecologic function throughout the 50-year period of analysis.

However, the NER/TSP plan cannot be constructed within the current WRDA 2007 authorization. Therefore, Alternative 11 (Whiskey Island Plan C), a subset of the NER/TSP plan, is the recommended increment of construction. The USACE will seek additional authorization in order to construct additional increments of the NER/TSP plan.

## Letter #9: Louisiana Department of Environmental Quality (LDEQ)

- 3 -

Whiskey Island Plan C was selected as the recommended increment of construction of the NER/TSP. Whiskey Island Plan C was designed to complement an existing CWPRA project, TE-50, which was constructed in 2009. A renourishment event will be conducted on Whiskey Island in TY20 and in TY40 to maintain the geomorphic form and ecologic function of the island throughout the 50-year period of analysis. The fully funded cost of the Whiskey Plan C is approximately \$119,000,000, without renourishment. The two renourishment cycles will cost an additional \$173,000,000. However, renourishment is considered an O&M cost that will be fully-funded by the non-federal sponsor and does not count toward the WRDA 2007 authorization cap of \$180,900,000.

Please review the enclosed documents and provide comments within 45 days of the date stamped on the cover page of the EIS. Comments should be mailed to the attention of Dr. William Klein Jr.; U.S. Army Corps of Engineers; Planning, Programs, and Project Management Division; Environmental Planning and Compliance Branch; CEMVN-PM-RS; P.O. Box 60267; New Orleans, Louisiana 70160-0267.

Comments may also be provided by E-Mail to [william.p.klein.jr@usace.army.mil](mailto:william.p.klein.jr@usace.army.mil), or by fax to (504) 862-2088. Dr. Klein may be contacted at (504) 862-2540, if questions arise.

Sincerely,



for Joan M. Exnicios  
Chief, Environmental Planning  
and Compliance Branch

Enclosures



## Letter #9: Louisiana Department of Environmental Quality (LDEQ)

-----Original Message-----

From: Jamie Phillippe [<mailto:Jamie.Phillippe@LA.GOV>]  
Sent: Wednesday, July 28, 2010 12:52 PM  
To: Klein, William P Jr MVN  
Cc: Melvin "Mitch" Mitchell; Renee Sanders  
Subject: FW: LCA Amite - LDEQ Water quality Certification.

William,

This is a follow up e-mail to our phone conversation.

A Section 401 water quality certification is required for federal licenses and permits, not environmental impact statements (EIS's). DEQ has submitted comments to the Corps and DNR's Consistency Determination Section for the LCA projects you mentioned.

Please let me know if you have any further questions.

Jamie Phillippe

Louisiana Department of Environmental Quality

401 Water Quality Certifications

## Letter #10: National Marine Fisheries Service (NMFS)



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
 NATIONAL MARINE FISHERIES SERVICE  
 Southeast Regional Office  
 263 13<sup>th</sup> Avenue South  
 St. Petersburg, Florida 33701

July 22, 2010 F/SER46/PW:jk  
 225/389-0508

Ms. Joan M. Exnicios, Chief  
 Environmental Planning and Compliance Branch  
 Planning, Programs, and Management Division  
 New Orleans District, U.S. Army Corps of Engineers  
 Post Office Box 60267  
 New Orleans, Louisiana 70160-0267

Dear Ms. Exnicios:

NOAA's National Marine Fisheries Service (NMFS) has reviewed the Pre-Decisional Draft Integrated Feasibility Study and Supplemental Environmental Impact Statement (SEIS) for the Louisiana Coastal Area (LCA) Terrebonne Basin Barrier Shoreline Restoration, Terrebonne Parish, Louisiana. This document was transmitted for our review by your letter dated June 10, 2010. It should be noted that NMFS has agreed to serve as a cooperating agency on this project under provisions of the National Environmental Policy Act.

A total of 12 alternatives were evaluated in the final array to restore and maintain the Isle Dernieres and Timbalier Islands. With the exception of the No Action alternative, various plans of differing widths and elevations were evaluated for each alternative. Alternative Five, comprised of Raccoon Island with a terminal groin, and Whiskey, Trinity, and Timbalier Islands was selected as the National Environmental Restoration (NER) and Tentatively Selected Plans (TSP). However, this NER/TSP cannot be constructed within the funding constraints of the current Water Resources Development Act (WRDA) 2007 authorization. As a result, Whiskey Island with maintenance events at years 20 and 40 was recommended as a first increment of construction. When compared to the No Action alternative over the 50-year period of analysis, this recommended increment would result in 379.1 Average Annual Habitat Units and 527 net acres as assessed with the Wetland Value Assessment methodology. The estimated fully funded cost without the maintenance events is \$119,000,000. Each nourishment event is estimated to cost \$173,000,000. Re-nourishment is considered an operations and maintenance cost that will be fully funded by the non-federal sponsor and does not count toward the WRDA 2007 authorization cap of \$180,900,000 for this project.

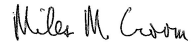
The enclosed comments are provided in accordance with provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) and the essential fish habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act. It should be noted that given the initial adverse impacts of project construction activities on EFH, as per requirements of the



## Letter #10: National Marine Fisheries Service (NMFS)

Magnuson-Stevens Fishery Conservation and Management Act and our findings with the New Orleans District, NMFS has provided EFH conservation recommendations in the enclosure to this letter. Efforts to resolve NMFS' concerns regarding adverse impacts to EFH should be implemented during the Preliminary Engineering and Design phase of project implementation.

Sincerely,



Miles M. Croom  
Assistant Regional Administrator  
Habitat Conservation Division

Enclosure

c:  
FWS, Lafayette, Walther  
EPA, Dallas, Ettinger  
LA DNR, Consistency, Ducote  
F/SER46, Swafford  
F/SER4, Dale  
NOAA PPI, Reid  
Files

# Letter #10: National Marine Fisheries Service (NMFS)

## ENCLOSURE

National Marine Fisheries Service (NMFS) Comments on the Pre-Decisional Draft Integrated Feasibility Study and Supplemental Environmental Impact Statement (SEIS) for the Louisiana Coastal Area (LCA) Terrebonne Basin Barrier Shoreline Restoration Project, Terrebonne Parish, Louisiana  
Authorized under the Water Resources Development Act of 2007

### Essential Fish Habitat Consultation

NMFS views the submittal of the SEIS as an expression of intent by the Corps of Engineers (COE) to initiate essential fish habitat (EFH) consultation as required by provisions of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (P.L. 104-297). NMFS' response is provided in accordance with the EFH regulations (50 CFR 600.920(i)(4)) and focuses on the adequacy of the SEIS to fulfill the requirements of an EFH assessment.

Based on our review of the SEIS, NMFS has determined that the document contains all required EFH assessment contents listed in section 600.920(e)(3) of the EFH regulations. Specific comments are provided where NMFS believes clarification or additional information is needed concerning EFH and other environmental factors. For example, a key concern of NMFS is the substantial temporal adverse impacts to EFH that would result from dredging and filling to construct various alternatives and plans. Because construction activities would initially cause substantial adverse impacts to existing barrier island habitats identified as EFH, NMFS believes that measures to avoid, minimize, and offset adverse effects must be implemented. Most important of these measures with respect to the proposed action is the need to minimize adverse impacts to intertidal habitat to the maximum extent practicable and maximize the creation and maintenance of that habitat over the entire project life. Other measures include means to ensure created habitats develop natural habitat functions.

Given the substantial initial construction impacts and the need to minimize impacts to intertidal habitats, the COE should coordinate with the natural resources agencies during the preliminary engineering and design (PED) phase to further refine project alternatives. During the PED phase of project implementation, design measures to create habitat heterogeneity (e.g., tidal creeks and ponds) and function (e.g., degrading/gapping containment dikes) should be evaluated. Best management practices also should be developed during the PED phase of project construction, in coordination with the natural resource agencies.

The EFH assessment provided a basis and justification for implementing the Tentatively Selected Plan (TSP) when the benefits for that effort are compared to the consequences of the No Action alternative. However, NMFS believes additional measures are necessary to avoid, minimize, and offset potential impacts to EFH. Section 305(b)(4)(A) of the Magnuson-Stevens Act requires that NMFS provide EFH conservation recommendations for any federal action that may result in adverse impacts to EFH. Therefore, NMFS recommends the following to ensure the conservation of EFH and associated marine fishery resources:

NMFS10-01: PED will consider means of offsetting adverse impacts to EFH from the proposed construction, with the goal of minimizing those impacts while creating viable sustainable intertidal habitat.

NMFS10-02: The Preconstruction Engineering and Design process will include consultation with natural resource agencies to ensure necessary habitat heterogeneity and function design measures are incorporated in the project.



# Letter #10: National Marine Fisheries Service (NMFS)

### EFH Conservation Recommendations

1. Means to avoid and minimize direct and temporal adverse impacts to intertidal habitat for Timbalier and Raccoon Islands should be adopted. This includes, but is not limited to, adoption of alternative plans or plan hybridization during the PED phase of project implementation.
2. Including tidal creeks and ponds in created marsh platform designs should be considered to the maximum extent practicable to ensure the development of functional habitat heterogeneity.
3. Containment dikes for the marsh platforms should be degraded or gapped in an acceptable manner to be developed through coordination with NMFS.
4. During the PED phase of project implementation, the need for dredging windows to avoid or minimize potential impacts to blue crab in the vicinity of Ship Shoal should be considered through further coordination with NMFS, the Bureau of Ocean Energy Management, Regulation and Enforcement, and other interested resource agencies.

Consistent with Section 305(b)(4)(B) of the Magnuson-Stevens Act and the NMFS' implementing regulation at 50 CFR 600.920(k), the COE is required to provide a written response to these EFH conservation recommendations within 30 days of receipt. As per the findings with the New Orleans District (NOD) pertaining to EFH coordination on planning and operations activities subject to provisions of the National Environmental Policy Act, if the COE is unable to complete a signed Record of Decision for this project within 30 days of receiving NMFS' EFH Conservation Recommendations, the NOD should provide NMFS with an interim written response within 30 days. The NOD should then provide a detailed response at least 10 days prior to signing of a Record of Decision. If the NOD's response is inconsistent with the EFH conservation recommendations, the NOD must provide a substantive discussion justifying the reasons for not implementing those recommendations.

### General Comments

Given existing workloads, NMFS has concentrated its review on the environmental consequences of the Tentatively Selected Plan (TSP). By letter dated May 25, 2010, NMFS submitted comments to the Fish and Wildlife Service on the initial draft Fish and Wildlife Coordination Act Report. We recommend those comments be incorporated directly or by reference into the final SEIS. We also request adherence to Positions and Recommendations listed in the May 2010 draft Fish and Wildlife Coordination Act Report. Any future decision to select a different action alternative or modifications in design that result in increased direct or indirect impacts to EFH would likely create the need for another SEIS.

NMFS is concerned with the significant amount of temporal adverse impacts, including extended loss of ecosystem services, to intertidal habitat that would occur with restoration construction

NMFS10-3: The PED process will develop island design alternatives that address impact minimization.

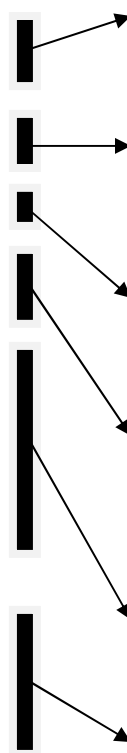
NMFS10-4: The PED process will develop island design alternatives that address habitat heterogeneity, stability, and longevity.

NMFS10-5: The PED process will develop island design alternatives that address habitat heterogeneity, stability, and longevity.

NMFS10-6: All concerned agencies will be consulted regarding timing of utilization of the Ship Shoal borrow areas in order to minimize impact to fisheries resources.

NMFS10-7: Acknowledged. Previously submitted comments have been incorporated into the SEIS.

NMFS10-8: Acknowledged.



## Letter #10: National Marine Fisheries Service (NMFS)

proposed for Timbalier and Raccoon Islands. The design philosophy employed with this alternative is to sequester substantial amounts of fill at supratidal elevations to provide barrier and structural integrity functions. However, until these elevations subside and are subjected to sea level rise and storm losses, there would be a net loss of 450, 592, 415, and 250 acres of intertidal habitat at target years (TY) one, five, ten, and twenty, respectively, on Timbalier and Raccoon Islands. Pursuit of Plan E for these islands as the "best buy" in terms of cost effectiveness is based on the speculation that benefits from intertidal habitat gains and other habitats during years 30 to 50 would offset these temporal losses projected to occur through year 30.

The final array of alternatives focused on attaining the "best buy." As acknowledged in the SEIS, a best-buy focus results in a restoration plan of the island or islands that is most cost effective rather than restoring the integrity of a barrier island chain. The goal of the LCA study is a comprehensive and integrated plan for multiple benefits, including the environment, economy and culture of southern Louisiana. This goal includes sustaining and restoring coastal ecosystems with essential functions and diversity. NMFS is supportive of restoring as many barrier islands as possible and pleased that the TSP now includes multiple islands rather than just Whiskey Island. Recognizing the funding constraints of the authorization, the incremental approach to restoring multiple islands is understood. However, proceeding with only a single island increment highlights that near-term ecosystem-level goals of the LCA study are not attainable unless more funding is authorized. The SEIS should further emphasize that fulfilling the intended basin scale island restoration goal depends upon additional federal and non-federal funds being provided to support project implementation.

Given the amount of restoration needed for coastal Louisiana, funding is a substantial challenge and is a potential limitation in plan formulation and project implementation. When evaluating the merits of the type and scale of various LCA projects, NMFS discourages comparisons of mainland versus island projects, in particular cost-benefit comparisons. Islands provide unique marine-estuarine transitional habitat for fish and wildlife communities that are distinctly different from other mainland habitats. Barrier island habitats interspersed around and within islands are selectively preferred by different groups of fish and crustaceans. In addition, restoration of barrier island habitats is inherently more expensive than similar acreages of mainland wetlands. Any comparison of LCA cost effectiveness should only be made within island alternatives and not between island and mainland projects.

### Specific Comments

#### SECTION 3.0 ALTERNATIVES 3.5 Comparison of Alternative Plans

Page 3-77, line 3440 Table 3-37 should be revised to indicate data therein is for Timbalier Island Plan E, not C.

#### 3.8 Plan Selection-Recommended Increment for Construction

NMFS10-9: Concur. There is an obvious trade-off to obtain the desired protection and long-term habitat values.

NMFS10-10: Concur. The report indicates the desirability of the basin scale restoration.

NMFS10-11: Concur. This is a policy issue beyond the scope of this report.

NMFS10-12: This correction either has been or will be undertaken.

## Letter #10: National Marine Fisheries Service (NMFS)

### 3.8.6 Components

Page 3-92, lines 3982-3988 The performance of sand fences varies depending on sediment type, time of construction relative to fill placement, number of rows, and alignment. NMFS discourages the use of alignments other than shore parallel. The number and size of gaps in the fences should be coordinated with the Fish and Wildlife Service and Louisiana Department of Wildlife and Fisheries to allow passage of wildlife species. NMFS encourages an offset section of fence be considered for inclusion in front of or behind the gaps to minimize overwash vulnerability at the gaps. This section of the final SEIS should be revised to identify the orientation of sand fences, gaps, and number of rows. This section also should be revised to identify species and spacing for vegetative plantings either directly or through reference to an appendix.

### SECTION 4.0 AFFECTED ENVIRONMENT

#### 4.2 Significant Resources

##### 4.2.8 Aquatic Resources

##### 4.2.8.2 Benthic

Dubois et al. (2009) provided information on the diversity and composition of macrobenthic communities associated with sandy shoals to be targeted as borrow for this project. NMFS recommends the final SEIS be revised to cite this reference and summarize information contained therein.

##### 4.2.9 Fisheries

##### 4.2.9.2 Existing Conditions

Page 4-56, lines 6330 and 6336 The date of the Williams fisheries study on East Timbalier Island should be changed from 1988 to 1998.

Page 4-59, Blue Crab NMFS recommends the use of Ship Shoal as spawning, hatching, and foraging grounds for blue crab be discussed in the final SEIS using data and observations from Gelpi et al. (2009).

Page 4-59, line 6444 The date of the Williams fisheries study on East Timbalier Island should be changed from 1988 to 1998. It should be noted in the final SEIS that that study identified barrier island sand flats as a significant nursery habitat for lesser blue crab.

##### 4.2.10 Essential Fish Habitat (EFH)

Page 4-62, lines 6493-6496 Information in this table is outdated and incomplete. Detailed information on federally managed fisheries and their EFH is provided in the 2005 Generic Amendment of the Fishery Management Plans for the Gulf of Mexico prepared by the Gulf of Mexico Fishery Management Council. Summary guidance is available upon request. The final

NMFS10-13: Sand fencing and vegetation palette and planting issues are described in Appendix L.

NMFS10-14: Pertinent information from Dubois, *et al.* (2009) will be incorporated into the report and considered during PED.

NMFS10-15: Concur. The date will be corrected.

NMFS10-16: Pertinent information from Gelpi, *et al.* (2009) will be incorporated into the report and considered during PED.

NMFS10-17: The date will be corrected. The blue crab nursery issue will be addressed.

NMFS10-18: The table will be updated.

# Letter #10: National Marine Fisheries Service (NMFS)

SEIS should include up-to-date information on EFH categories and appropriate species and life stages to be impacted by project implementation.

## SECTION 5.0 ENVIRONMENTAL CONSEQUENCES

### 5.6 Vegetation Resources

#### 5.6.2 Wetland Vegetation Resources

Page 5-39 Clarification is needed on the acres of direct, indirect and cumulative impacts by habitat type for each alternative in this section. The cumulative impact sections should be revised to not only include a running total or acres impacted for the proposed features, but also the overall net change, including the other islands, to illustrate barrier shoreline sustainability on the basin level.

For each alternative there will be substantial direct impacts to intertidal elevations during construction. This is based on the need for initial fill elevations to allow for compaction and consolidation, much of which was projected to occur by TY 5. NMFS recommends the direct impact sections for each alternative be revised to include both the TY 1 and 5 acres to reflect the initial construction impacts and their temporary nature.

#### 5.6.2.1 Direct

Page 5-40, lines 9242-9246 Based on comparison of Tables 3-19 and 3-35, -59 acres of direct impact of intertidal habitat should be listed. NMFS concurs that 529 acres of dune and supratidal habitat would be restored. However, 463 acres instead of 477 acres of dune and supratidal habitats at TY 20 would result from renourishment. Also, 556 acres of dune and supratidal habitat instead of 360 acres would result with the renourishment at TY 40.

The loss of 59 acres of intertidal habitat results from the need for an initial fill elevation for the marsh platform to allow for consolidation and compaction. Once that occurs, there is a positive 116 acres of intertidal habitat by TY 5. NMFS suggests the TY 5 acres also be listed under the direct impact section(s) to illustrate the temporary nature of these impacts.

#### 5.6.2.2.6 Cumulative

Page 5-41, line 9295 Please re-verify the acres of net benefit for Alternative 2, Timbalier (Plan E). NMFS calculated the TY 50 net gain to be 1,322 acres, not 1,139 acres.

#### 5.6.2.3 Cumulative

Page 5-42, line 9321 NMFS calculated the TY 50 net gain as 1,802 acres, not 1,502. Please verify the correct acres and revise as needed.

#### 5.6.2.4.1 Direct

Page 5-42 The 528, 347, and 1,979 should be identified as dune and supratidal acres. Also, please verify that the acres listed under direct, indirect, and cumulative for sections 5.6.2.4 and 5.6.2.5 are correct.

NMFS10-19: The desire for additional information is understood. The suggested revisions will be considered, time permitting.

NMFS10-20: The figures will be verified and corrected, if needed. The suggested revisions will be considered, time permitting.

NMFS10-21: The acreage figures will be verified and corrected, if needed.

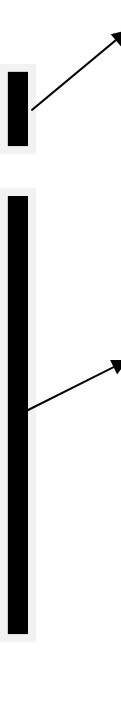
NMFS10-22: The acreage figures will be verified and corrected, if needed.

NMFS10-23: The numbers will be correctly identified and verified.





## Letter #10: National Marine Fisheries Service (NMFS)



NMFS10-24: Potential impact to blue crab population and fisheries will be considered during the PED process. This is an issue that requires interagency and intergovernmental coordination and cooperation, which will be emphasized.

NMFS10-25: Concerns about the potential negative impacts to fisheries resources resulting from this proposed project are understood and appreciated. The referenced sections of the report will be revisited, time permitting, to further address the competing issues of short-term impact versus long-term benefit posed in this comment. The final acreage figures for impacted areas will be developed during the PED phase.

## Letter #10: National Marine Fisheries Service (NMFS)

### Literature Cited

- Dubois, S., C.G. Gelpi, Jr., R.E. Condrey, M.A. Grippo, and J.W. Fleeger. 2009. Diversity and composition with sandy shoals of the Louisiana continental shelf. Biodiversity Conservation. COE 10.1007/s10531-009-9678-3.
- Gelpi, C.G., Jr., R.E. Condrey, J.W. Fleeger, and S.F. Dubois. 2009. Discovery, evaluation, and implications of blue crab, *Callinectes sapidus*, spawning, hatching, and foraging grounds in Federal (USS) waters offshore Louisiana. Bulletin of Marine Sciences 85(3):3203-222.

# Letter #11: National Marine Fisheries Service (NMFS)



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
Southeast Regional Office  
263 13<sup>th</sup> Avenue South  
St. Petersburg, Florida 33701

May 25, 2010 F/SER46/PW:jk  
225/389-0508

Mr. James F. Boggs, Field Supervisor  
Louisiana Field Office  
U.S. Fish and Wildlife Service  
646 Cajundome Boulevard, Suite 400  
Lafayette, Louisiana 70506

Dear Mr. Boggs:

NOAA's National Marine Fisheries Service (NMFS) has received the draft Fish and Wildlife Coordination Act Report (Report) titled "Louisiana Coastal Area - Terrebonne Basin Barrier Shoreline Restoration, Integrated Feasibility Study" (TBBSR). The Report discusses the U.S. Fish and Wildlife Service's initial findings and recommendations associated with the National Ecosystem Restoration (NER) Plan and Corps of Engineers' Tentatively Selected Plan (TSP) for barrier island restoration in Terrebonne Parish, Louisiana.

As described in the Report, 12 alternatives were included in the final array. Various plans of differing widths and elevations were evaluated. After numerous iterations of TSP formulation, the Corps of Engineers identified the TSP to consist of Plan C for Whiskey Island only. That alternative includes 622 acres of beach/dune with a +6.4 feet NAVD 88 dune crown, that is 100 feet wide, and approximately 100 acres of created marsh elevations constructed landward of the dune to a +2.4 feet NAVD 88 for a settled target of +1.6 feet NAVD 88.

NMFS supports further emphasis in the Report on two broad points. These are: 1) implementation of a comprehensive coastal ecosystem restoration plan should include construction of both barrier islands and mainland habitats; and, 2) construction of multiple islands rather than one island should be pursued as the TSP.

The goal of the Louisiana Coastal Area (LCA) Study is a comprehensive and integrated plan for multiple benefits, including the environment, economy and culture of southern Louisiana. This includes sustaining and restoring coastal ecosystems with essential functions and diversity. Barrier islands, including those under the TBBSR, are an important component of a complete coastal ecosystem plan and NMFS is supportive of accomplishing as much barrier island restoration as possible. Although Whiskey Island Plan C contributes to NER, selection of a single island as the TSP incompletely meets the near-term barrier island restoration needs for Terrebonne Basin by only addressing one of seven islands. Further, the ability to attain long-term restoration needs for TBBSR will be more daunting and fleeting while degradation of the remaining barrier island area exceeds the capabilities of other restoration programs. We encourage the Report be revised to further emphasize this shortcoming by including a discussion of the measurement of the quantity and quality of benefit (i.e., NER outputs) and how those net changes may be compared to the one-island TSP and other multi-island plans.

In discussing the limits of applicability of project justification, the importance of barrier islands in providing unique habitat for fish and wildlife resources that is distinctly different from mainland marshes cannot be understated. The environmental benefits for all plans/projects under the LCA Study are



NMFS11-01: 1)WRDA 2007 authorized only analysis of the barrier islands and prevented the project delivery team from analyzing measures on mainland habitat to the north. 2) The State and USACE are requesting additional authorization to construct the multiple island NER plan, but the authorized budget precludes us from recommending a multiple island plan for immediate construction.

NMFS11-02: The report has been revised to include discussion of the NER plan in addition to the 1-island TSP.

## Letter #11: National Marine Fisheries Service (NMFS)

quantified using various fish and wildlife community-based models. Each of those has a common output metric, the Average Annual Habitat Unit (AAHU). In the case of TBBSR, the Barrier Island Community Model was used. A substantial limitation of that model is the dune, supratidal, and intertidal variables are defined by fixed vertical elevations. Of all the variables in the model, the intertidal variable carries the most weight. So, when attempts are made to optimize designs and associated alternatives based in part on AAHUs, intertidal acreage is maximized as early and as long as possible during the project life. However, because each of the habitat types in this model are based on fixed vertical elevations, no adjustment is possible when the effects of sea level rise on project performance are considered over a 50-year project life. With sea level rise effects included with fixed elevation definitions, there is a substantial loss of intertidal habitat as presently defined in the model. This limits the amount of resulting AAHUs when in reality the intertidal range would adjust with sea level rise. Most applications of this model to date have been through the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) which has a 20-yr project life where sea level rise has less impact on benefits. Further, under CWPPRA, cost/benefit is not the only metric used to compare island versus mainland projects. We recommend the Report be revised to discuss this methodology limitation and to indicate that until programmatic changes are made to methods, the results should be used for comparing within island alternatives and not between island and mainland projects. We also recommend the Report indicate that if methods changes were made to allow intertidal habitat to adjust with sea level rise, different design alternatives may have been developed for optimal benefit performance.

NMFS concurs with and supports the Fish and Wildlife Service's recommendation that the TSP should consist of the NER Plan plus Wine Island. Although re-building Whiskey Island further than restoration efforts undertaken by CWPPRA would result in substantial net positive benefits to the environment, a single island action is not representative of ecosystem restoration. Recognizing the funding limits of the existing authorization, NMFS is supportive of proceeding with as many islands under the NER Plan as possible while emphasizing that anything less than the NER Plan is representative of only a near term solution that addresses only a minor part of the barrier island restoration needs for the Terrebonne Basin. We recommend the Report indicate the preferred priority for restoration of the islands identified in the NER Plan with presently limited and potential future available funds. We are interested in developing a priority with your staff and that of the Louisiana Department of Wildlife and Fisheries based on the completed analyses.

#### Fishery Resources and Essential Fish Habitat

The proposed restoration alternatives potentially would mine sand from Ship Shoal and/or South Pelto lease blocks. Please revise the fishery resources discussion to indicate that a portion of Ship Shoal has been identified as spawning, hatching, and foraging habitat for blue crab and the proposed mining may adversely affect these support functions<sup>1</sup>. We suggest the Report discuss the potential need for prohibiting mining during annual periods of highest blue crab use of the shoals. Essential fish habitat has been designated for areas in the vicinity of offshore shoals for various life stages of King mackerel, cobia, and red snapper. We recommend the Report be revised accordingly.

#### Report Position and Recommendations

We request recommendation number two number be revised to also include impacts to essential fish habitat to ensure contract plans and specifications are coordinated with the FWS and NMFS Habitat Conservation Division. In addition, we request recommendation number six be revised to indicate the

<sup>1</sup> Gelpi, Jr., C.G., R.E. Condrey, J.W. Flegger, and S.F. Dubois. 2009. Discovery, evaluation and implications of blue crab, *Callinectes sapidus*, spawning, hatching and foraging grounds in Federal (US) water offshore of Louisiana. Bulletin of Marine Science: 85(3)203-222.

NMFS11-03: Acknowledged. Three sea level rise rates were applied to each alternative in the final array to assess WVA benefits. Uncertainties related to each rate were discussed in the Risk and Uncertainties section of the Integrated Feasibility Report.

NMFS11-04: The State and USACE are requesting additional authorization for the NER plan and the additional benefits related to system-wide restoration have been discussed in the Integrated Feasibility Report.

NMFS11-05: Acknowledged. The report has been revised to discuss impacts to blue crab.


NMFS11-06: Plans and specifications will be coordinated with the USFWS and NMFS. Monitoring plans will also be consistent with the BICM program as outlined in the Adaptive Management report located in the Appendices.

## Letter #11: National Marine Fisheries Service (NMFS)

monitoring plans should be consistent with the Barrier Island Comprehensive Monitoring requirements developed by the Office of Coastal Protection and Restoration under funding from LCA Science and Technology Program.

Thank you for the efforts of your staff to assess impacts of plans under the TBBSR, coordination with the NMFS, and for the opportunity to review and comment on this Report. Please direct questions pertaining to these comments to Patrick Williams at (225) 389-0508, extension 208.

Sincerely,

  
for Miles M. Croom  
Assistant Regional Director  
Habitat Conservation Division

c:  
USACE, Planning, Klein, Lockney  
LA DNR, Consistency, Ducote  
F/SER4, Dale  
F/SER46, Swafford  
Files

## Letter #12: Natural Resources Conservation Service (NRCS)

United States Department of Agriculture



Natural Resources Conservation Service  
3737 Government Street  
Alexandria, LA 71302

(318) 473-7751  
Fax: (318) 473-7626

July 12, 2010

Mrs. Joan M. Exnicios  
Chief, Environmental Planning and  
Compliance Branch  
Department of the Army  
New Orleans District, Corps of Engineers  
P. O. Box 60267  
New Orleans, Louisiana 70160-0267

Dear Mrs. Exnicios:

Please reference your June 10, 2010, Louisiana Coastal Area Ecosystem Restoration Project, Terrebonne Basin Barrier Shoreline Restoration, Terrebonne Parish, Louisiana, letter and the accompanying Draft Environmental Impact Statement (DEIS), entitled Integrated Feasibility Study and Environmental Impact Statement for the Terrebonne Basin Barrier Shoreline Restoration, Terrebonne Parish, Louisiana. The Natural Resources Conservation Service (NRCS) has reviewed the information and offers the following comments as requested.

The DEIS is well-written and provides a comprehensive description of the proposed project, the affected environmental resources, the anticipated project impacts to those resources, and the alternatives considered. As you probably are aware, NRCS has been actively involved in the planning and implementation of restoration efforts within the Terrebonne Basin for the past two decades, including our involvement in the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) program, and we have worked closely with the state, other federal partners, landowners, Louisiana Department of Wildlife and Fisheries (LDWF), as well as Terrebonne and Lafourche Parishes, to restore barrier island ecosystems. NRCS continues to play an active role in the restoration of the Terrebonne Basin and agrees that the barrier islands in the project area are of vital importance to the region and will continue to deteriorate unless preventative measures are taken.

The barrier island chain of the Terrebonne Basin is part of the coastal deltaic system and generally considered to have formed out of the headlands of previous delta lobes of the Mississippi River. These islands, once contiguous with the landward coastal marshes, have over time become detached, part of a natural cycle resulting from the abandonment of the Mississippi River as it changed its course several times to form the modern deltaic plain. Most recently, actions taken by man to control flooding and facilitate navigation and industry have accelerated an otherwise natural process of degradation to the point where the rapid change threatens coastal communities, important industrial infrastructure and livelihoods.

As you know, NRCS (originally known as the Soil Conservation Service-SCS) was founded over 70 years ago with the primary charge "to provide permanently for the control and prevention of soil erosion and thereby to preserve natural resources", and we are of the opinion that the issue concerning the barriers islands, as well as the coastal marshes, is erosion of unprecedented proportions. Although the erosion of these barrier islands is a combination

*Helping People Help the Land*  
An Equal Opportunity Provider and Employer

## Letter #12: Natural Resources Conservation Service (NRCS)

Joan Exnicios  
Page 2  
July 12, 1010

of natural and man-made processes, we recognize that the forces originally responsible for construction of these islands are not presently in place, and therefore, the actions taken to sustain them will require innovative measures that appropriately offset the erosion forces.

As described in the provided DEIS, the Corps of Engineers has selected Alternative 11, which is a subset of the NER/TSP plan Alternative 5 that was selected by the Project Development Team (PDT) as the Best Buy plan. Alternative 5, which included work on Raccoon Island, Whiskey Island, Trinity Island and Timbalier Island, was not able to be selected because it was determined that it could not be constructed in the current Water Resources Development Act (WRDA) 2007 authorization cap of \$180,900,000. The Alternative Plan 11 consists of construction of beach, dune and back marsh only on Whiskey Island at an estimated cost of \$119,000,000. This does not include the cost of re-nourishment, which is estimated at an additional cost of \$173,000,000 to be fully funded by the non-federal sponsor (State of Louisiana).

Of primary concern to NRCS is the selection of a project alternative that at best is expected to no longer exist in less than 20 years in a program authorized to construct projects expected to provide benefits over a 50 year period. Furthermore, this project will be constructed on one island out of the entire Terrebonne Barrier system that includes seven islands, and the coverage is limited to only 10 percent of the gulf-front of Terrebonne Basin and 1,272 acres of estimated restored dune, supratidal, and intertidal habitat. This is equivalent to almost \$5,000 per linear foot of shoreline or \$93,500 per acre that is expected to be lost in less than 20 years following construction unless it can be rebuilt by the State of Louisiana at an estimated cost that is 145% higher than the original cost.

NRCS believes that the best way to deal with an erosion problem is to stop the erosion and then take measures to restoring the damage. A fundamental problem with the proposed plan that we see is that it does not address the erosion problem, but simply places material with the expectation that it too will eventually erode away. An example of this is how the plan views the concept of island "rollover." This is the idea that the barrier islands naturally migrate as the sand is transported over and around through various currents and storm events resulting in the movement of the island position landward. The rollover concept has been accepted as a natural process that we should facilitate by feeding these areas with more material to allow continued movement of the islands. The generally accepted mode of action has been to continuously replenish the massive loss of material from the system at a rate comparable to the loss. The problem is that the replenishment cycles are in increments of decades and not continuous; therefore, there is a large replenishment and a subsequent large loss of material. Each replenishment cycle is not just an infusion into the system as what would naturally occur but involves a highly sophisticated landscape design and engineering project that requires enormous resources to construct. Consequently, what is often incorrectly referred to as a barrier island restoration is in reality a barrier island "creation" project.

NRCS has observed that the loss of these islands is almost completely occurring from gulf-side erosion. This is evident in every study including the data from this report. NRCS believes that if a project is able to stop the erosion process, or even reduce it significantly, it would be considered successful in terms of acreage preserved. For example, the DEIS states that Whiskey Island is 4.6 miles long on its gulf shore face and eroding at the long-term rate of

NRCS12-01: Though the initial benefits provided at construction are not retained throughout the period of analysis, the action does provide benefits out to TY50 that would otherwise be lost with the no-action alternative. In addition, while the TSP is only Whiskey Island, the State and USACE are requesting additional authorization to construct the NER plan.

NRCS12-02: Acknowledged. The barrier island system is a naturally degrading system and hard-structural measures such as rock, revetment, and groins were analyzed to determine their effectiveness in sustaining the islands and preventing erosion. It was determined that beach/dune/marsh nourishment provided more benefits in the long term than hardened structures and that replenishment of material would have a longer-lasting effect in maintaining the islands over the 50-year period of analysis.

## Letter #12: Natural Resources Conservation Service (NRCS)

Joan Exnicios  
Page 3  
July 12, 2010

56 ft/y (line 1182). This is equivalent to a loss of 31.2 acres per year. The islands current acreage is only 509 acres (line 1201) and would be lost in 16.3 years. If this rate is reduced by only half, the total loss would be extended to 32.6 years. By stopping the erosion the islands could potentially be preserved as well as additional restorative action, such as proposed in this plan.

According to the information provided in this report in the section on Future Without Project (FWOP) beginning on page 2-1, line 1100 every island in the Terrebonne Basin has received some form of restoration action in the past 20 years. Much of this action has taken place from 1997 to present other than some early FEMA action in 1993 following Hurricane Andrew. All of the islands with the exception of Raccoon Island involved re-nourishment projects and in some cases more than one effort was performed. Raccoon Island involved construction of shore-face protection in the form of segmented breakwaters. To compare the progress of these actions we used the current acreage estimate and divided by the long-term shoreline loss rate to determine the current life expectancy of the existing island. The table below summarizes these observations.

Island	Acreage	Shoreline length (miles)	Loss Rate (ft/y)	Acres loss rate Acres/y	Life Expectancy (years)
Whiskey	509	4.6	56	31.2	16.3
Trinity	509	5.2	38.4	24.2	21
East	300	3.1	38	14.3	19.9
Timbalier	980	7	42.9	36.4	26.9
Raccoon	121	2.6	?	?	?

The DEIS document does not provide the shoreline loss rates for Raccoon Island, and therefore, we were not able to include it in the table. However, prior to construction of the Raccoon Island Demonstration project (TE-29) in 1996, reports indicated that the loss rate was 42 ft/y, which would result in loss rate of 13.2 acres per year. Without the project, we could expect the 127.2 acres to have disappeared in 9.6 years. This was consistent with the prediction for total loss in the Williams et al. 1992 comprehensive barrier island erosion study. The DEIS states that the 2008 area of the island is 121 acres, a difference of only 6.2 acres from 1996 area. This is a loss rate of only 0.4 ac/y. Dividing 0.4 acres per year by 121 acres results in a life expectancy of 302.5 years, or in other words, in the period of record of which the project has been in place, Raccoon Island has virtually lost no land. Our personal observations are that the island has lost area in the unprotected areas, which are included in the tally, but has gained in areas protected for net result of minimal total loss. The project has also withstood the impacts of several major hurricanes including Lili (2002), Katrina and Rita (2005) and Gustav and Ike (2008) without adjusted latitudinal position. An important consideration is that there has been no re-nourishment or Operation and Maintenance (O&M) action to the project thus far and in comparison to the other islands acreage, Raccoon Island is quite small making it most vulnerable to overwhelming storm effects. Yet despite this, not only has this small island



## Letter #12: Natural Resources Conservation Service (NRCS)

Joan Exnicios  
Page 4  
July 12, 2010

exceeded its pre-project life expectancy but has virtually remained the same size with minimal net loss with only partial protection features in place.

On several occasions throughout the development of this plan, NRCS along with LDWF, the trustees of the Iles Dernieres, has provided input on the findings of the Raccoon Island project and along with LDWF expressed a desire to include a protection system in the barrier island restoration plans. We also expressed a desire to have as an alternative an evaluation of a segmented breakwater only option. This was not done. However, the NER/TSP did include an evaluation of protective features in combination with beach, dune and sand. The cost/benefit analysis for Raccoon Island included 3 strategies with all three including at minimum a beach, dune and marsh component (Table 3-2, page 3-20), one with breakwaters and one with terminal groin. Whiskey Island was likewise evaluated with beach, dune and marsh construction with and without breakwaters. It was concluded that although breakwaters would reduce shoreline erosion (line 2216), preliminary cost-benefit analysis indicated that the additional benefits provided by the breakwaters could not be justified by the additional cost associated with their construction. The difference indicated in Table 3-3 is \$24,780,000 in a total cost of \$88,300,000, or 28 percent of total cost. On Raccoon Island, the project cost is estimated to be \$58,000,000 and the breakwaters construction amounts to only \$3,700,000 or 6 percent of the cost. If these features stop the erosion rate by even half, the benefits would be exceptionally significant. For example, on Whiskey Island, if the 56 ft/y are reduced to 28 ft/y, the life expectancy of the existing island would double from 16.3 to 32.6 years. This is the equivalent of preserving 15.6 acres every year of the existing island. Based on our observations on Raccoon Island, we believe that similar action on Whiskey Island would virtually halt erosion and preserve the original construct of the island at a fraction of the cost of constructing additional beach, dune and marsh that is expected to be lost in less than the life of the project.

Please be aware that NRCS believes that any and all actions should be considered in the restoration of the Terrebonne Barrier Island system, but the elimination of alternatives for reasons other than that which is most cost-effective requires significant justification for elimination. Table 3-1 (page 3-17) states that virtually all hard structures were removed from consideration up front because "these structures interfere with the normal longshore and cross-shore movement of sediment in the coastal system." There is nothing "normal" about the materials movement in the Terrebonne Basin Barrier system that can be interpreted as a process that is remotely responsible for forming or even sustaining these islands today. They are in an advanced stage of the normal process of delta degradation. The statement continues "they introduce a systemic disruption into the barrier island shoreline process, one that will likely be beneficial in some situations and detrimental in others. While they may be effective in certain local applications, they may result in increased erosion elsewhere in the system." This is speculative at best and the fact is, we do not fully understand what these types of actions are capable of doing in the Louisiana Barrier Island system. This was precisely the reason the Raccoon Island demonstration project was put in place and done so on only a portion of the island. In the 13 years of its existence, it has proven to be highly successful in preserving the remaining original formation of this relatively tiny island. This is the only project of its kind designed as precisely a restorative action on a barrier island, and thus far, it has exceeded expectations and outperformed any other barrier island restoration project in terms of stopping land loss and in cost-effectiveness.

NRCS12-03: The project delivery team evaluated a wide-array of alternatives and eliminated measures based on a number of reasons as outlined in Chapter 3 of the Integrated Feasibility Study. While breakwaters have proven effective on Raccoon Island, our analysis did not indicate enough benefit for their inclusion in the TSP or NER. The team recognizes the benefits afforded Raccoon Island, but has yet to find a clear explanation of why/how these benefits occurred and therefore were unable to quantify the same benefits when modeling breakwaters on Whiskey Island.

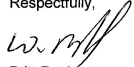
## Letter #12: Natural Resources Conservation Service (NRCS)

Joan Exnicios  
Page 5  
July 12, 1010

As an active participant in coastal restoration efforts in Louisiana and as the federal agency mandated by the public to solve issues of erosion for over 70 years, NRCS is dedicated to using the best available science and engineering to solve one of the most severe erosion problems in the world in coastal Louisiana. We are also compelled to be forthright in our observations of the plans and actions taken to combat this massive problem. We support any action to restore the Terrebonne Barrier Shoreline and will leave it up to the taxpayer to decide if it is money well spent. In commenting on this DEIS, our intentions are to share our experiences, be critical where we feel it is necessary, and hopefully provide input that ensures the best possible actions will ultimately be implemented. We hope that the PDT will benefit from the abbreviated information and perspective provided here.

NRCS appreciates the opportunity to provide comments on the proposed action and DEIS and compliments the development team on a comprehensive and thorough effort. If you have any questions or need further information, please contact Ron Boustany (337) 291-3067.

Respectfully,



Britt Paul  
Assistant State Conservationist

cc: Ron Boustany, NRS, FOPSS, NRCS, Lafayette, LA