

PPL 17

Regional Planning Team Meetings

Region 4 – January 9, 2007  
Region 3 – January 10, 2007  
Region 2 – January 11, 2007  
Region 1 – January 11, 2007

Initial Fact Sheets and Maps

Region 3  
Morgan City  
January 10, 2006



## ATTENDANCE RECORD



DATE(S)  January 10, 2007 9:00 A.M.	SPONSORING ORGANIZATION  COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT	LOCATION  Morgan City Auditorium West Concourse 728 Myrtle St. Morgan City, LA
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**PURPOSE**

MEETING OF THE REGIONAL PLANNING TEAM REGION III

**PARTICIPANT REGISTER\***

NAME	JOB TITLE AND ORGANIZATION	TELEPHONE NUMBER
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**Region 3  
Regional Planning Team Meeting  
10 Jan 07  
Morgan City, LA**



**1. Welcome  
and Introductions**



RPT Region 3  
Leader:  
Ronny Paille - FWS

## Announcements

- First round of RPT meetings (Jan. 9 - 11, 2007) will be held to accept project and demo nominations. **NO VOTING** will take place at these meetings.
- Voting to select project nominees for all basins will occur at the Coast-wide Voting Meeting, on Feb. 7, 2007, in Baton Rouge at the LDWF Building (2000 Quail Dr.).
- Parish representatives are asked to identify themselves and announce who will cast votes at the coast-wide voting meeting.
- Agencies will be assigned responsibilities for preparing nominee fact sheets after the coast-wide voting meeting.

## Announcements

Eligible parishes for basins in Region 3 include:

### Terrebonne Basin

St. Mary Parish  
Terrebonne Parish  
Assumption Parish  
Lafourche Parish  
Iberia Parish  
St. Martin Parish

### Atchafalaya Basin

St. Mary Parish  
Iberia Parish  
Terrebonne Parish

### Teche-Vermilion Basin

St. Mary Parish  
Iberia Parish  
Vermilion Parish

## 2. PPL17 Selection Process and Ground Rules



### CWPPRA PPL 17 Process Summary

- RPT meetings Jan. 9-11, 2007 to accept ideas for projects and demos (no limit on number of projects).
- Projects must support a Coast 2050 Regional or Coastwide Strategy.
- At the coast-wide voting meeting on Feb. 7, 2007. RPTs will select 2 nominees per basin (3 each in Barataria and Terrebonne).
- RPTs will select 6 demo projects coast-wide.
- Selection is by consensus, if possible; if not by agency/ parish ranked vote.



## CWPPRA PPL 17 Process Summary

- Following the coast-wide voting meeting, an agency will be assigned to each project.
- The agency will prepare a fact sheet (1 page + map) so nominees can be evaluated for costs/ benefits.
- Engineering Work Group will estimate preliminary fully funded cost.
- Engineering and Environmental Work Groups will review draft features and benefits for each nominee.
- Work groups will also review demo projects and verify that they meet demo criteria.

## CWPPRA PPL 17 Process Summary

- Matrix of costs/benefits transmitted to Tech. Comm. & Coastal Protection and Restoration Authority (CPRA).
- Tech. Comm. meets Mar. 14, 2007 at 9:30 am at the Corps in New Orleans to select up to 10 PPL 17 candidate projects and up to 3 demos.
- Tech. Comm. assigns agencies to candidate projects to develop costs/benefits for Phase 0.
- Workgroups conduct field trips to evaluate benefits and calculate fully funded costs for candidates.

## CWPPRA PPL 17 Process Summary

- Public meetings will be Aug. 29, 2007 in Abbeville and Aug. 30, 2007 in New Orleans to present results of Phase 0 analysis
- On Sept. 12, 2007, the Tech. Comm. will select up to 4 candidate projects (and possibly demos) to present to the Task Force for Phase 1 funding.
- On Oct. 17, 2007, the Task Force will meet to select up to 4 projects for Phase 1 funding.

## 3. Region 3 Coast 2050 Regional Strategies



## Projects nominated should be:

- consistent with the Coast 2050 Regional Ecosystem or Coastwide Strategies
- consider CWPPRA's prioritization criteria

## Restore Swamps

- Improve hydrology and drainage in Verrett Subbasin

## Restore and Sustain Marshes

- Maximize land building in Atchafalaya Bay
- Lower water levels in upper Penchant Marshes
- Increase transfer of Atchafalaya River water to lower Penchant tidal marshes
- Enhance Atchafalaya River water influence to central Terrebonne marshes
- Establish multipurpose control of HNC Lock (freshwater and sediment distribution, salinity control, hurricane protection and navigation)
- Stabilize banks of navigation channels for water conveyance and erosion control

## Restore and Sustain Marshes

- Dedicated delivery of sediment for marsh building by any means feasible – deliver sand from offshore or the river to build land in Timbalier Bay area.
- Construct large conveyance channel from the Mississippi River parallel to Bayou Lafourche to divert up to 100,000 cfs to create a delta lobe in upper Timbalier Subbasin, provided that any project related navigation feature not impede or interfere with the land building capacity of the channel

## Restore and Protect Bay, Lake and Gulf Shorelines and Barrier Islands

- Maintain shoreline integrity and stabilize critical areas of Teche-Vermilion Bay systems, including Gulf shoreline
- Maintain shoreline integrity of Caillou, Terrebonne and Timbalier Bays
- Restore and Maintain the Isles Dernieres and Timbalier barrier island chains

## Resolve Vermilion-Cote Blanche Bays salinity and turbidity

- Optimize GIWW flow into marshes and minimize direct flow into bays
- Maintain Vermilion, East and West Cote Blanche Bays as brackish
- Reduce sedimentation in bays
- Create artificial reef complex, including one from Pt. Chevreuil toward Marsh Island

## Coast 2050 Coastwide Strategies



- Beneficial Use of Dredged Material
- Dedicated Dredging for Wetland Creation
- Herbivory Control
- Stabilization of Major Navigation Channels
- Management of Bay/Lake Shoreline Integrity
- Management of Pump Outfall
- Vegetative Planting
- Maintain or Restore Ridge Function
- Terracing

## 4. PPL17 Project Nominations



### Demonstration Projects

- Demonstrates a new technology
- Demonstrates a technology which can be transferred to other areas in coastal Louisiana
- Are unique and not duplicative in nature
- Engineering/Environmental Workgroups will select sites for proposed demonstration projects
- The RPTs will select 6 demos at the Feb. 7<sup>th</sup> coast-wide voting meeting. The Tech. Comm. will select up to 3 demos in March 07
- PPL16 demos must be *re-nominated* for PPL17

## 5. Announcement of Coast-wide Voting Meeting



### Coast-wide Voting Meeting

- **Feb. 7, 2007** in Baton Rouge to choose 2 nominees per basin (3 in Barataria and Terrebonne), and 6 demos.
- Parishes within each basin are asked today to identify who will vote at the coast-wide meeting.
- No additional projects can be nominated at the coast-wide meeting.
- No significant changes to projects proposed at the first round of RPT meetings will be allowed (this includes combining projects).
- No public comments accepted at the coast-wide meeting (public comments will be heard today).



## **Coast-wide Voting Meeting**

- Each officially designated parish representative, each Federal agency, & DNR will have one vote.
- Voting will be by ranked vote.
- Each voting entity will be provided a ballot.
- Each voting entity will provide a ranked score for all projects – the highest ranking project will receive the highest vote and the lowest will receive a vote of “1”.
- Points will be totaled for all projects within each basin.

## **Coast-wide Voting Meeting**

- The two nominees per basin (three in Barataria and Terrebonne) receiving the highest vote will be included in the list of 20 nominee projects.
- All demo projects will be voted upon in same manner with one coast-wide ballot.
- 15 minutes will be allowed for voting in each basin and for demos.

## 6. Announcements of Upcoming Meetings



### **PPL 17 Upcoming Meetings**

Coast-wide Voting Mtg, 7 Feb 07, Baton Rouge  
20 nominees and 6 demos selected

Technical Committee Mtg, 14 Mar 07, New Orleans  
Selection of 10 candidates and up to 3 demos

Public Meetings  
29 Aug 07, Abbeville  
30 Aug 07, New Orleans

Technical Committee Mtg, 12 Sep 07, New Orleans  
Recommend up to 4 projects for Phase I funding

Task Force Mtg, 17 Oct 07, New Orleans  
Final selection of projects for Phase I funding

# 7. Adjourn



Region 3 – Atchafalaya Basin

Proposed Projects

**R3- AT 1      East Atchafalaya Bay Sediment  
Trapping Project**

RE3 AT-1 PPT  
LDWF/Carloss

## PPL17 PROJECT NOMINEE FACT SHEET

January 10, 2006

### **Project Name and Number**

East Atchafalaya Bay Sediment Trapping Project

### **Coast 2050 Strategy**

Region 3 - 2. Increase deltaic land building where feasible; 12. Maintain shoreline integrity and stabilize critical areas of Atchafalaya Bay shoreline.

### **Project Location**

Region 3, Atchafalaya Basin, St. Mary/Terrebonne Parish, NE portion of Atchafalaya Bay adjacent to Palmetto Bayou.

### **Problem**

Delta development in the East Atchafalaya Bay has been slow due to the high energy environment and finer sediment. However, development may be rapidly induced with assistance of a sediment trapping mechanism. The shoreline extending from Plum Island Point to Creole Bayou continues to erode at approximately 11 feet per year (USGS 2004). Vast freshwater floating marsh habitat located behind the existing shoreline is increasingly becoming prone to storms and amplified tidal influences. Enhancement of delta development in this area will rapidly create new marsh, stabilize the deteriorating shoreline, and protect existing marsh that has been increasingly vulnerable to the energies of the open bay system.

### **Proposed Solution**

Construct approximately 60,000 linear feet of earthen terraces in the East Atchafalaya Bay extending out from Palmetto Bayou and Plumb Bayou into the bay. The terrace construction will consist of a bifurcated channel design to both direct flows and mimic deltaic formation.

### **Goals**

The goals of the project are to 1) reduce shoreline erosion, 2) establish submerged aquatic vegetation and emergent marsh within the terraced area, and 3) encourage expanded delta development.

### **Preliminary Project Benefits**

Approximately 35 acres of marsh will be immediately created with the construction of terraces. Because of the high suspended load in the area, it is expected that this area will expand as much as 5 times original area during the life of the project (175 acres). An additional 90 acres will be protected through the offset of wave energy and deterioration of adjacent shorelines.

### **Identification of Potential Issues**

The proposed project has potential flowline issues.

### **Preliminary Construction Costs**

Approximately \$2.7 million

### **Preparer of Fact Sheet:**

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**Legend**

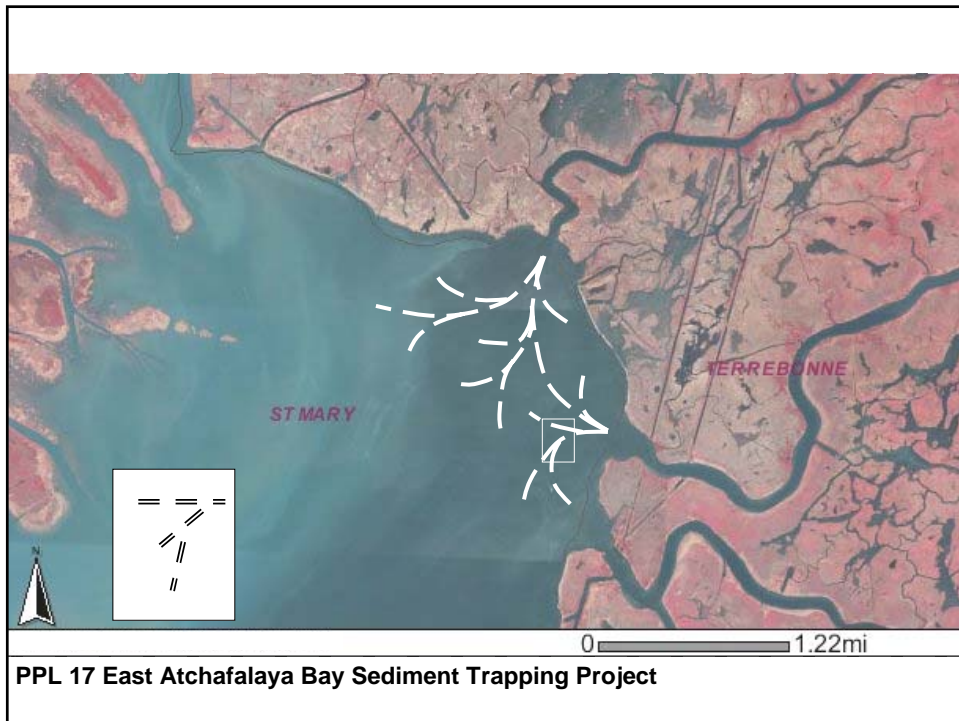
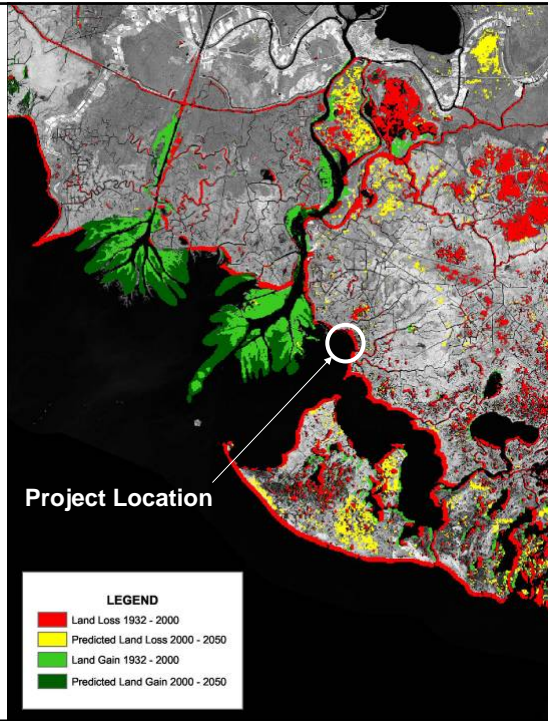
— Terraces



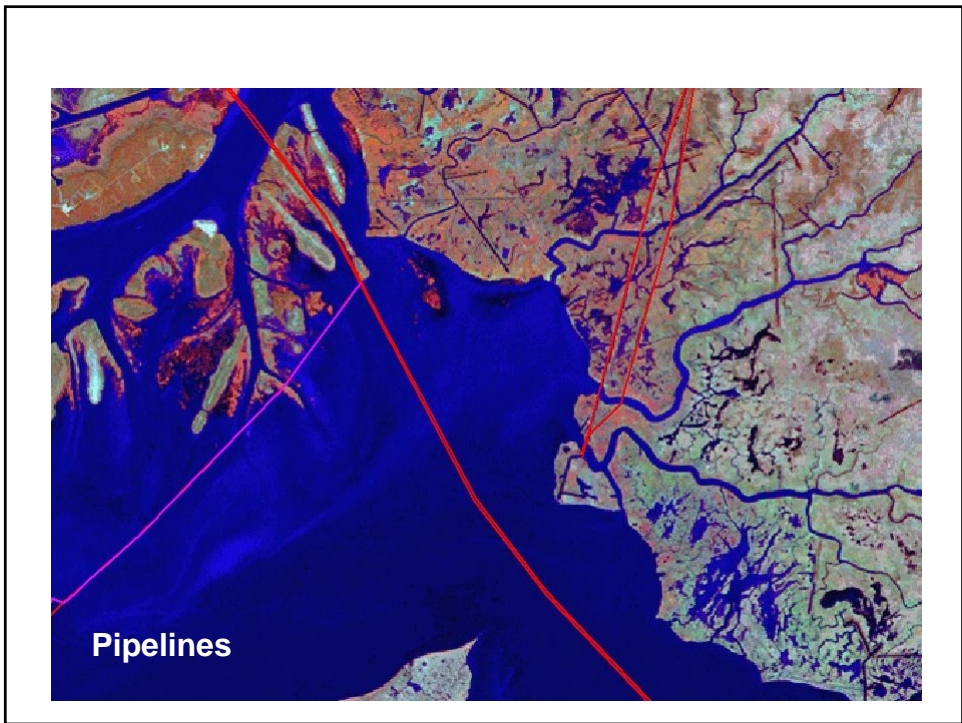
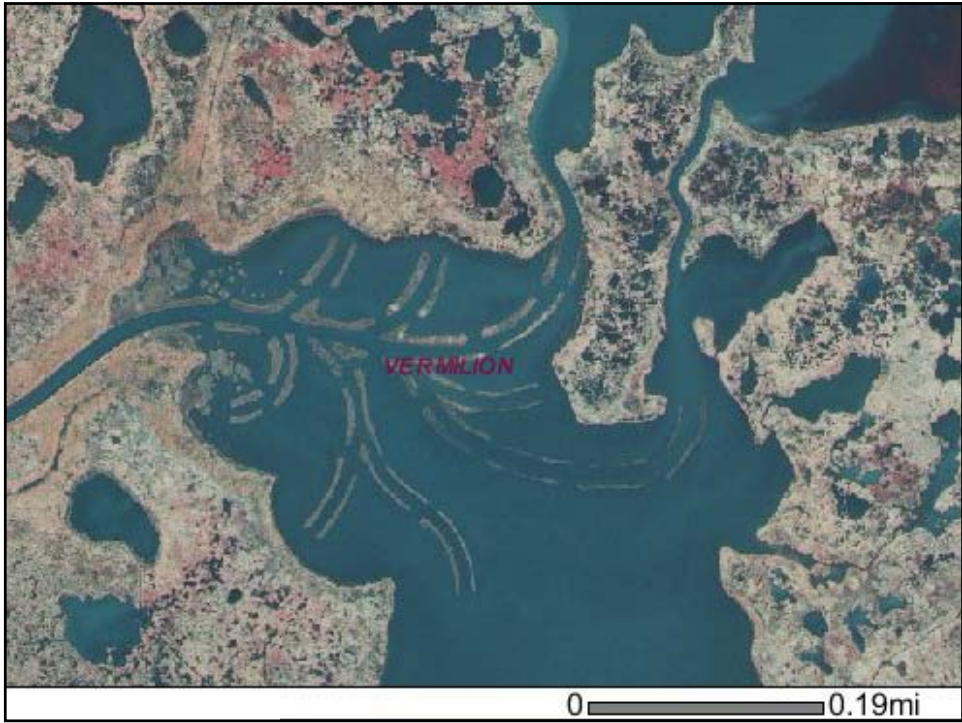
East Atchafalaya Bay  
Sediment Trapping  
St. Mary Parish, Louisiana  
PPL-17

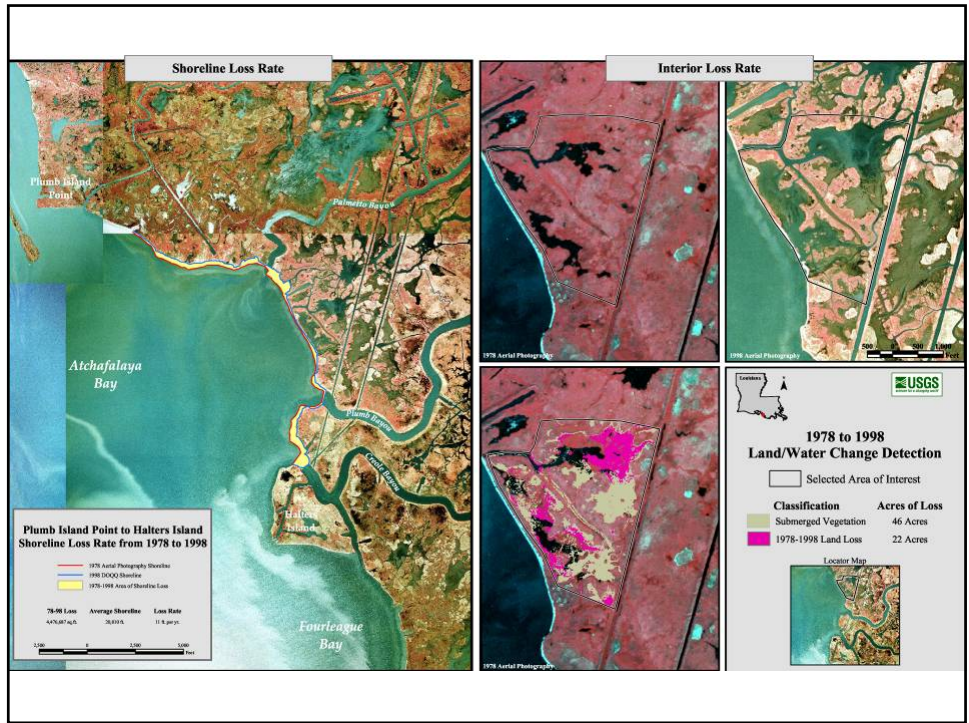


**PPL 17  
East Atchafalaya Bay  
Sediment Trapping  
Project**









**R3- AT 2      Point Chevreuil Shoreline Protection  
Project**

REB AT-2

PPT  
NRCS  
STEMMANS

## PPL17 PROJECT NOMINEE FACT SHEET

January 10, 2007

### Project Name

Point Chevreuil Shoreline Protection

### Project Location

The project is located in Region 3, Atchafalaya River Basin, St. Mary Parish, along the southeastern shoreline of East Cote Blanche Bay, around Point Chevreuil, and the northwestern shoreline of Atchafalaya Bay.

### Coast 2050 Strategy

Regional: #10. Protect, restore and maintain ridge functions; #11. Maintain shoreline integrity and stabilize critical shoreline areas.

Coastwide: Maintenance of gulf, bay and lake shoreline integrity; maintain, protect or restore ridge functions.

Mapping Unit: East Cote Blanche Bay (73) - Protect Bay/Lake Shorelines  
Wax Lake Wetlands (60) - Protect Bay/Lake Shorelines

### Problem

Eroding shoreline caused by the open water fetch and resulting wave energy from East Cote Blanche and Atchafalaya Bays. The retreating shoreline has resulted in a substantial loss of emergent wetlands and critical habitat used by a multitude of wildlife and fish species. Project features will protect the natural ridge functions of the Bayou Sale Ridge and protect the adjacent marshes. Shoreline erosion rates have been estimated at 13.5 LF/year (USGS 2003).

### Proposed Project Features

Construction of a foreshore rock dike or rock revetment parallel to the existing eastern shoreline of East Cote Blanche Bay, from Bayou Sale southward to Point Chevreuil and the northern shoreline of Atchafalaya Bay from Point Chevreuil eastward to an underground pipeline crossing. The linear footage of shoreline is approximately 20,000 linear feet (~3.8 miles). It is possible that marsh can be created with the fill material from dredging of an access channel to accommodate construction equipment, where needed. This created area will be from the existing shoreline out to the rock dike.

### Goals

Reduce and/or reverse shoreline erosion rates and protect natural ridge and marsh habitat at well as maintaining the existing hydrology of the area by preventing the Atchafalaya Bay shoreline from intercepting an oilfield and pipeline canal. The ridge and marsh area provides important habitat for black bears, neo-tropical migrants, wintering migratory waterfowl, etc.

### Preliminary Project Benefits

The project is anticipated to directly protect approximately 124 acres of forested wetlands and intermediate marshes by reducing the current erosion rate of 13.5 ft/yr by 75-100%. Project features will provide protection to and maintain the small remnant of natural ridge/chenier function that currently exists along the eastern bank of the once-defined Bayou Sale channel. The project will also have an important synergistic effect with the TV-20 Bayou Sale CWPPRA-approved Project by extending similar benefits to the southern most extent of the East Cote Blanche Bay shoreline.

### Identification of Potential Issues

No significant potential issues are expected from project implementation. Adjacent landowners are in full support of the project.

### Preliminary Construction Costs

The construction cost plus contingencies for this project is approximately \$10,000,000.

### Preparer of Fact Sheet

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Charles Stemmans/NRCS/ (337) 369-6623 / [charles.stemmans@la.usda.gov](mailto:charles.stemmans@la.usda.gov)

# Point Chevreuil Shoreline Protection St Mary Parish, Louisiana



East Cote  
Blanche Bay

Bayou Sale

Hog Bayou



Shoreline Protection  
Near Existing Shoreline

Pointe Chevreuil

Atchafalaya Bay

Shoreline Protection  
Off Shoreline to allow  
Sediment to rebuild marsh  
along existing shoreline.

Shoreline Protection  
TV-20 Bayou Sale Shoreline Protection

0 3000 6000 Feet

**PPL 17 NOMINEE PROJECT SUBMISSION**

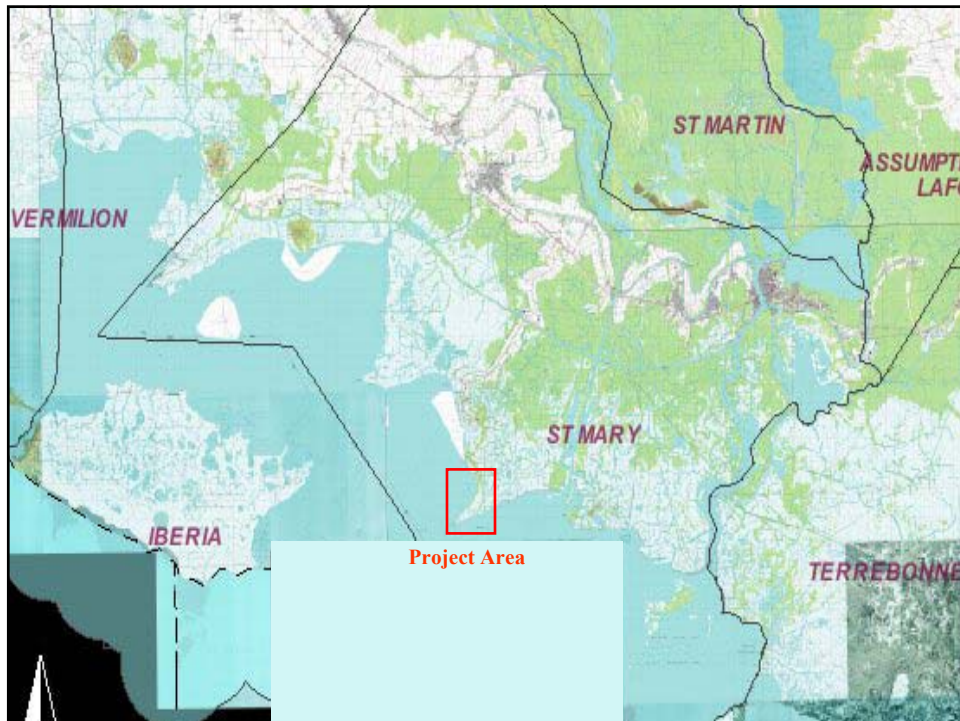
**REGION III**

**ATCHAFALAYA BASIN**

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***POINT CHEVREUIL SHORELINE PROTECTION***

***ST MARY PARISH***





## *POINT CHEVREUIL SHORELINE PROTECTION*

### *ST MARY PARISH*

#### **Problems:**

- Shoreline erosion rate of 13.5 feet per year
- Loss of critical natural ridge function and marsh habitat

#### **Project Features:**

- 20,000 LF of armored protection parallel to existing shoreline

#### **Project Benefits:**

- Directly protect ~ 124 ac of intermediate marsh
- Prohibit loss of rare coastal forested habitat
- Synergistic effect with TV-20 Bayou Sale CWPPRA Project

**R3- AT 3     Deer Island Pass Sediment Delivery  
Project**



**PPL17 PROJECT NOMINEE FACT SHEET**

January 10, 2007

**Project Name**

Deer Island Pass Sediment Delivery

**Coast 2050 Strategy**

Regional Strategy – Maximize land building in Atchafalaya Bay

Regional Strategy – Dedicated delivery of sediment for marsh building

**Project Location**

Region 3, Atchafalaya Basin, St. Mary Parish, northern portion of the Atchafalaya River Delta near the mouth of Deer Island Bayou

**Problem**

A shoal between the LAR and the head of Deer Island Pass does not allow the efficient flow of water and sediment from the river into northeastern Atchafalaya Bay. Natural accretion is occurring in the bay, but a more efficient delivery of sediment to that area would enhance marsh-building processes. Also, wave action is resulting in erosion along the eastern bank of the LAR north of Deer Island Bayou. A GIS comparison of the 1990 and 2005 shoreline position reveals that erosion of the LAR east bank ranges from 12 feet per year to a maximum of 22 feet per year.

**Goals**

The project would accelerate deltaic land-building in the northeast portion of Atchafalaya Bay which would result in the formation of 264 acres of emergent wetlands over the project life. The project would also create 68 acres of marsh with dredged material from the construction of a sediment delivery channel. The created marsh will protect existing marsh from erosion along the eastern bank of the LAR. In addition, maintenance of the sediment delivery channel would create a total of 35 acres of marsh over the project life.

**Proposed Project Features**

A 5,280-foot-long, 280-foot-wide, and 12-foot-deep sediment delivery channel will be hydraulically dredged across the shallow flat between the LAR and the northern end of Deer Island Pass. Dredged material from the sediment delivery channel will be placed in three marsh creation cells (68 acres total) along the eastern bank of the LAR. The sediment delivery channel will be re-dredged at target years 6, 11, and 16 to maintain channel efficiency.

**Preliminary Project Benefits**

1) Initial construction would result in the creation of 68 acres of marsh. Shoreline erosion along the eastern bank of the Lower Atchafalaya River would be prevented and directly protect 50 acres of marsh. An additional 35 acres of marsh would be created with material dredged during maintenance events. Indirect benefits would occur through increased delta growth and reduced shoreline erosion along the northeast Atchafalaya Bay shoreline in the vicinity of Palmetto Bayou. A preliminary estimate is that the project would promote development of 264 additional acres of marsh.

2) Total net acres protected/created by the project are 216 acres.

- 3) Shoreline erosion along the east bank of the LAR would be completely stopped. Land building rates in northern Atchafalaya Bay would increase significantly.
- 4) The project would help to maintain the rim of Atchafalaya Bay, a structural component of the ecosystem.
- 5) The project would not protect critical or non-critical infrastructure.
- 6) This project would work synergistically with other projects on the Atchafalaya River Delta to promote land building such as Atchafalaya Sediment Delivery, Big Island Mining, and Castille Pass Sediment Delivery.

**Identification of Potential Issues**

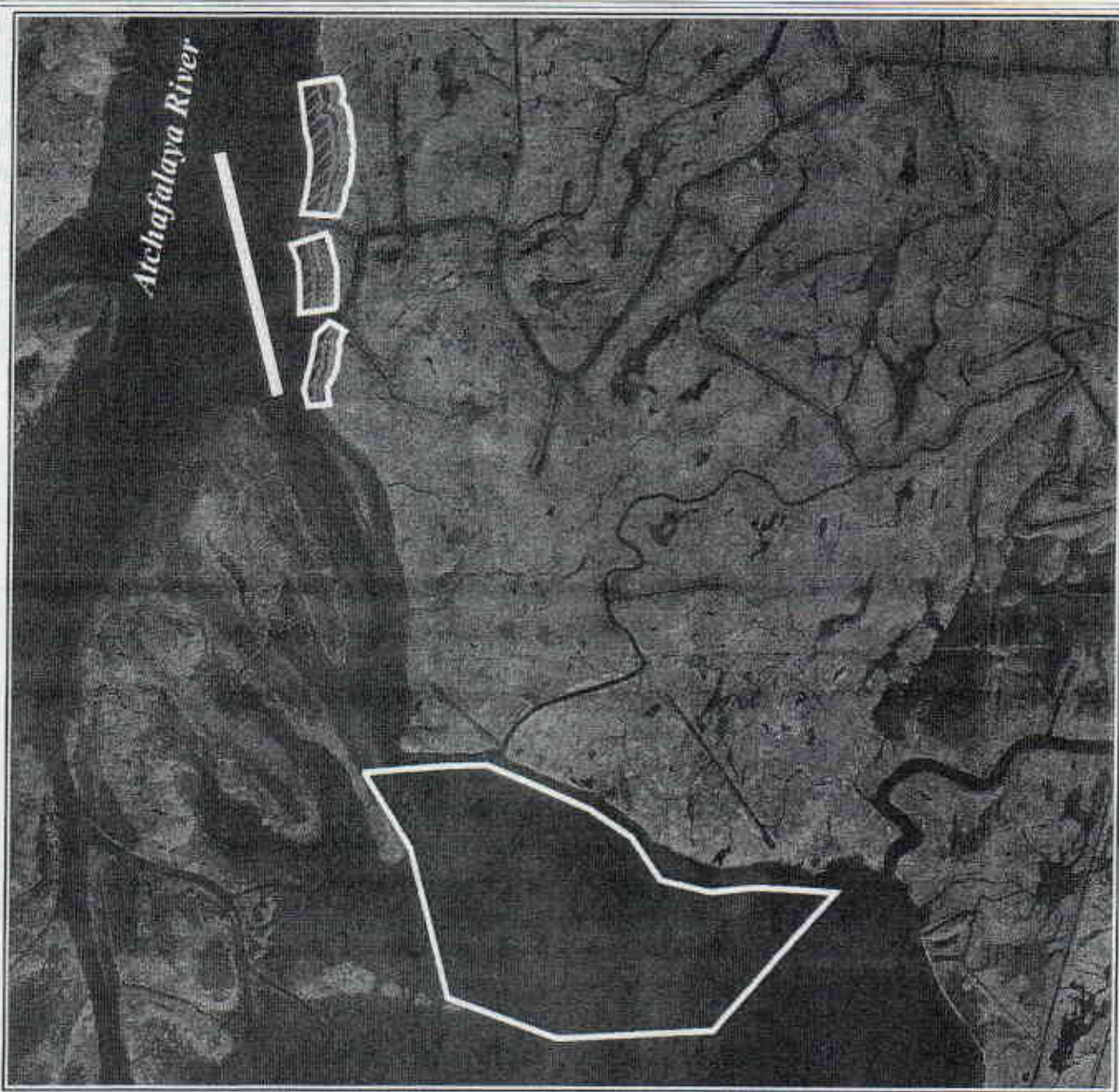
The greatest potential issue associated with this project would be the potential for project-induced sedimentation of the LAR navigation channel. That issue would be resolved through hydrologic modeling and associated consultations with the Corps, as previously done when engineering other CWPPRA projects within the Lower Atchafalaya River Delta. Reclamation may be another potential issue.

**Preliminary Construction Costs**

The construction cost including 25% contingency is approximately \$ 3,022,569. The estimated fully funded cost is \$8,775,000.




**Preparer of Fact Sheet**

Kevin Roy, U.S. Fish and Wildlife Service, 337-291-3120 email: kevin\_roy@fws.gov



### Deer Island Pass Sediment Delivery (PPL16 Candidate Project)



-  Marsh Creation \*
-  Sediment Delivery Channel \*
-  Project Boundary

\* denotes proposed features



Scale 1:47,000






Map Produced By  
U.S. Department of the Interior  
U.S. Geological Survey  
National Wetlands Research Center  
Coastal Restoration Field Station  
Baton Rouge, LA

Image Source:  
2005 Digital Orthophoto Quarter Quadrangle

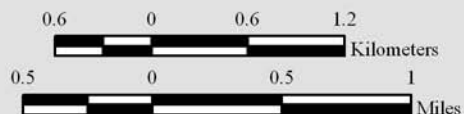


### Deer Island Pass Sediment Delivery (PPL16 Candidate Project)



-  Marsh Creation \*
-  Sediment Delivery Channel \*
-  Project Boundary

\* denotes proposed features



Scale 1:47,000



Map Produced By:  
U.S. Department of the Interior  
U.S. Geological Survey  
National Wetlands Research Center  
Coastal Restoration Field Station  
Baton Rouge, LA

Map ID: USGS-NWRC 2006-11-0405  
Map Date: July 06, 2006

Image Source:  
2005 Digital Orthophoto Quarter Quadrangle

**R3- AT 4 Point Au Fer to East Side of  
Atchafalaya River (Navigation Channel)  
Project**

## PPL17 Project Nominee Fact Sheet

January 24, 2007

### Project Name:

Point Au Fer to East side of Atchafalaya River (Navigation Channel) Project

### Coast 2050 Strategy:

Region 3 Regional Ecosystem Strategy #16: Create an artificial reef complex including one from Pt. Chevreuil toward Marsh Island.

### Project Location:

Region/Subprovince 3, Atchafalaya Basin, St. Mary Parish western tip of Point Au Fer Island, along the Gulf of Mexico

### Problem:

The oyster shell reefs that composed the historic Atchafalaya Bay Barrier Reef were removed by shell dredging during the past several decades to gather aggregate for industrial construction purposes. With the loss of the reef, Atchafalaya Bay and surrounding bays have been subjected to increased wave action, increased fluctuation of water levels, and potentially, less sediment from the Atchafalaya River may be retained in the estuary/wetland system, instead being flushed onto the continental shelf off Atchafalaya Bay. Loss of the reef has also resulted in increase shoreline erosion at Point Au Fer. By reducing water exchange and wave energy, the proposed reef structure may increase deltaic growth within the Lower Atchafalaya River Delta, and may increase suspended sediment introduction to Terrebonne Basin marshes adjoining Atchafalaya Bay and Four League Bay.

### Goals:

1. Create approximately 1 mile of riprap dike beginning at the breach east of Point Au Fer and continuing towards Eugene Island along the Gulf spit shorelines
2. Create approximately 2.5 miles of submerged breakwater from Point Au Fer towards Eugene Island
3. Reduce shoreline erosion along parts of the eastern shoreline of Atchafalaya Bay, and the outer reaches of the eastern side of the Atchafalaya Delta
4. Reduce wave height in Atchafalaya Bay
5. Increase sediment retention in Atchafalaya Bay

### Proposed Solutions:

Create a breakwater complex to replace the natural reef that was mined for its shell by installing a foreshore riprap dike along the Gulf spit shorelines and a slightly submerged breakwater extending from Point Au Fer westerly towards Eugene Island (in advance of the Navigation Channel). As with any fixed height structure, maintenance events are anticipated not only due to the low bearing capacity substrate, but also to counteract the effects of rise in sea level.

### Preliminary Project Benefits:

The total acreage benefited both directly and indirectly is estimated to be 100 acres. It is estimated 50 acres of wetlands will be protected over the project life. The anticipated loss rate reduction throughout the area of direct benefits over the project life is estimated to be  $\leq 25\%$ . The proposed structures should restore physical protection functions of historic reefs.

### Identification of Potential Issues:

The proposed project has the following potential issues: O&M, utilities/pipeline

### Preliminary Construction Costs:

Estimated Construction Cost	\$ 23,925,725
Estimated Construction Cost + 25% contingency	\$ 29,907,156

### Preparer(s) of Fact Sheet:

Tim Landers, EPA Region 6, (214) 665-6608, [landers.timothy@epa.gov](mailto:landers.timothy@epa.gov)



Louisiana Department of Natural Resources

0 0.84mi



**Proposed Project Features:**



Riprap dike



Submerged Breakwater

**PPL 17 Proposed  
Point Au Fer to East Side of  
Atchafalaya River (Navigation  
Channel) Project**

Region 3 – Terrebonne Basin

Proposed Projects



**R3 –TE 1 North Catfish Lake Hydrologic  
Restoration and Shore Protection Project**

R3 TE-1      Lafourche Pn  
PPT

**PPL 17 PROJECT NOMINEE FACT SHEET**

1/10/2007

**Project Name**

North Catfish Lake Hydrologic Restoration and Shore Protection

**Coast 2050 Strategy**

Region 3, Strategy 10. Restore historic hydrologic conditions of major tidal exchange point or prevent adverse tidal exchange points between Gulf/lake, lake/marsh, Gulf/bay, and marsh navigation channel locations. Strategy 13. Construct interior reefs to protect lake shoreline and/or for restoring hydrology.

**Project Location**

Region 3, Terrebonne Basin, Lafourche, north shore of Catfish Lake and west to Bayou Point au Chien Ridge

**Problem**

The project will restore historic hydrologic conditions to major tidal exchange points and reduce the tidal prism that has increased dramatically as a result of large navigation channel cuts and deterioration of the north shore of Catfish Lake. The project will reduce salinity by decreasing predominant tidal influence from the south and increase the freshwater influence of Grand Bayou Blue from the north. The project will stop shoreline erosion along the north shore of Catfish Lake.

**Proposed Project Features**

The project will include shoreline protection features along the north shore of Catfish Lake, rock barge bays across two major (400' wide) navigation canals, and several plugs at various points to the west of the project extent. Some marsh will be created through use of flotation material and the newly protected shoreline will be planted with smoothcord grass.

**Goals**

The project will reduce the influence of tidal marine waters traversing the area through large navigation cuts and rapidly deteriorating marshes along the north lake rim. The project will reestablish a more historic hydrologic flow pattern by limiting main channel flow through Grand Bayou Blue and thus allow for enhanced freshwater influence of water moving from the GIWW into the area via Grand Bayou Blue.

**Preliminary Project Benefits**

The shoreline protection will stop 27.7 ft of average annual erosion across 27,500 linear feet which is equivalent to 17.4 acres per year or 349 acres over 20 years. The restoration of historic hydrology between Bayou Lafourche and Bayou Point au Chien ridge will reduce salinities by significantly reducing the tidal passage through large navigation cuts and increase the effectiveness of the freshwater introduction modifications currently being planned for Grand Bayou Blue.

**Identification of Potential Issues**

The proposed project has the following potential issues: oysters, land rights, O&M, utilities/pipelines.

**Preliminary Construction Costs**




\$5.5 million

**Preparer of Fact Sheet**

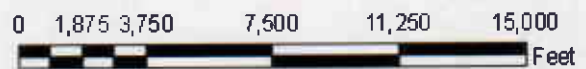
Ron Boustany, NRCS, (337) 291-3067, ron.boustany@la.usda.gov



**Legend**

-  Rock\_Lined\_Barge\_Bay
-  Plug
-  Shoreline\_Protection

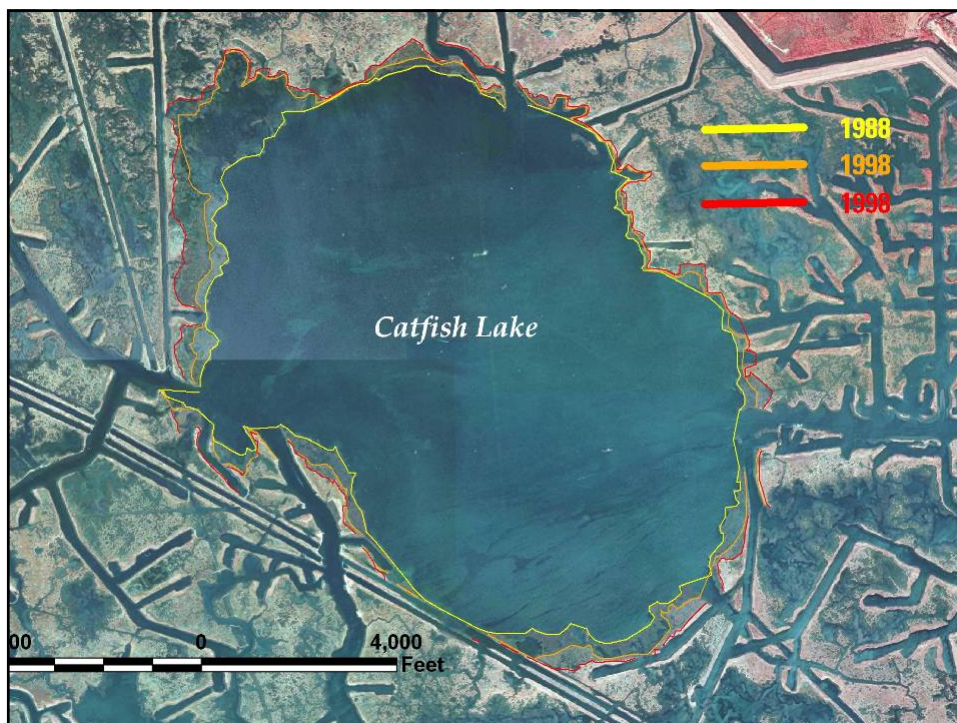
North Catfish Lake  
Hydrologic Restoration and Shoreline Protection  
Lafourche Parish, Louisiana  
PPL-17

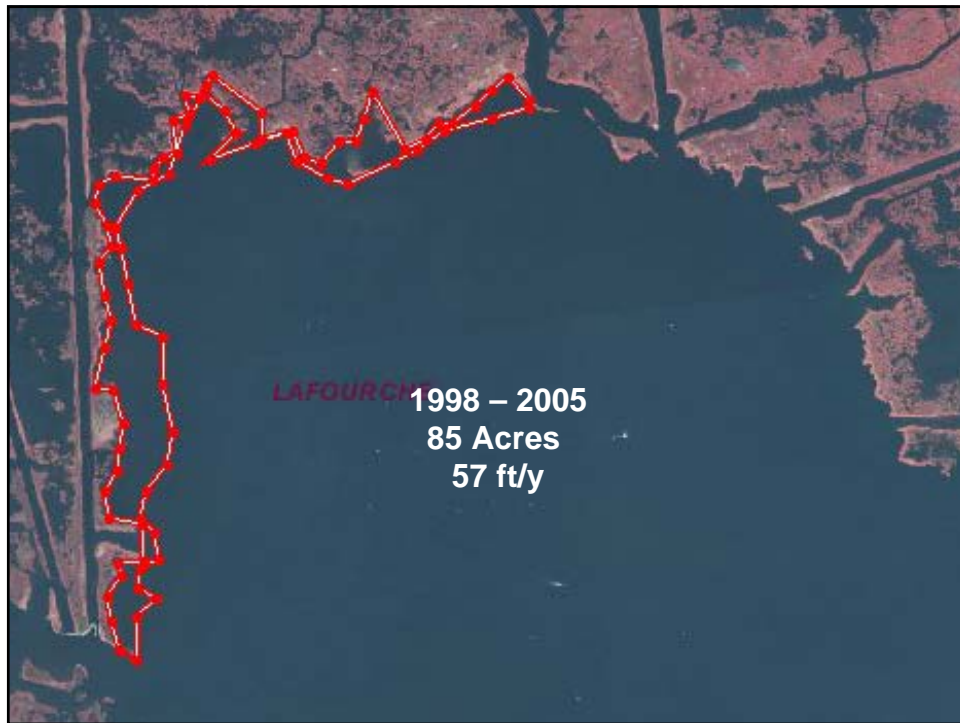
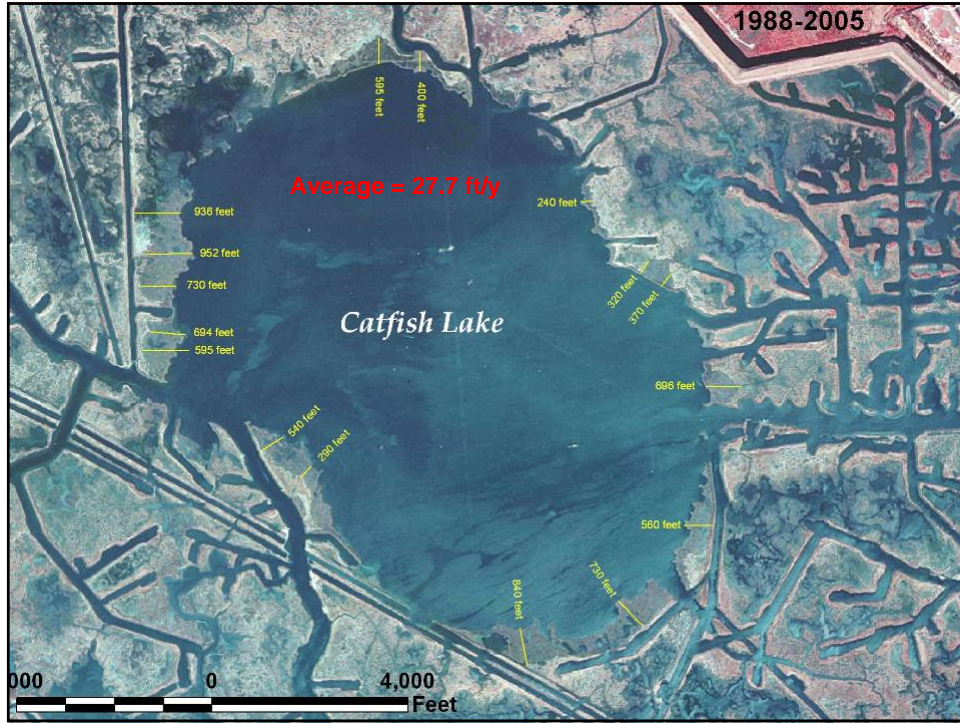


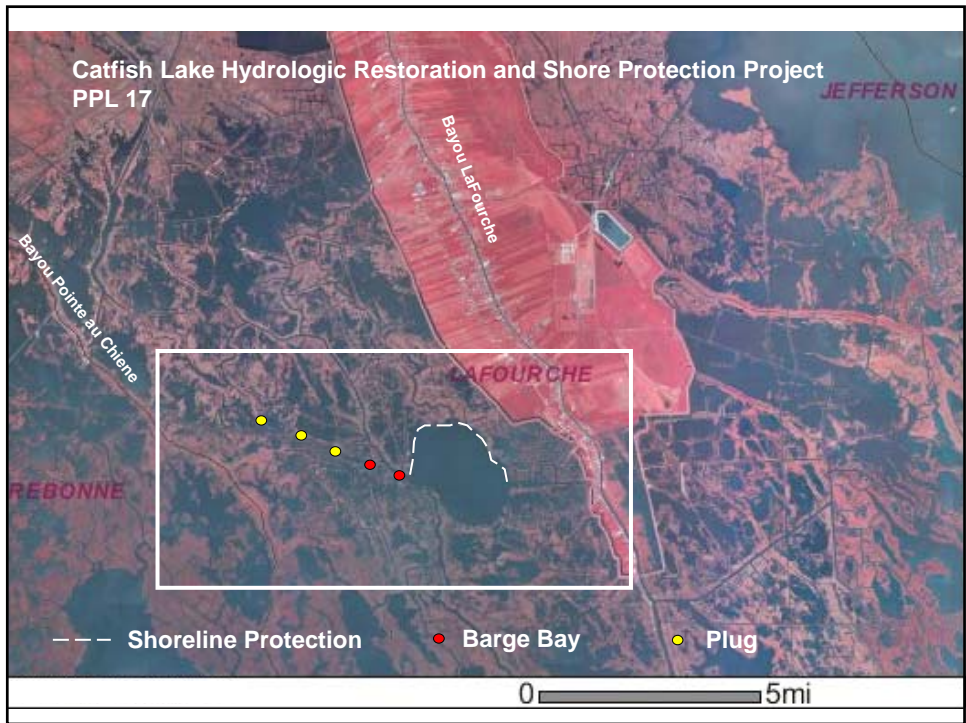
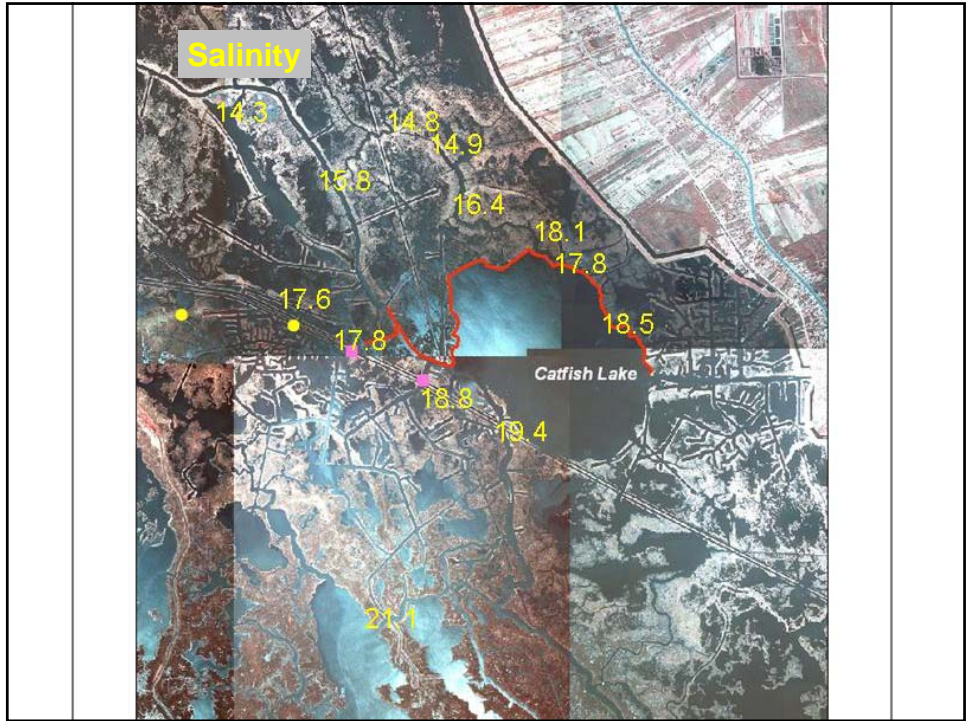
# PPL 17

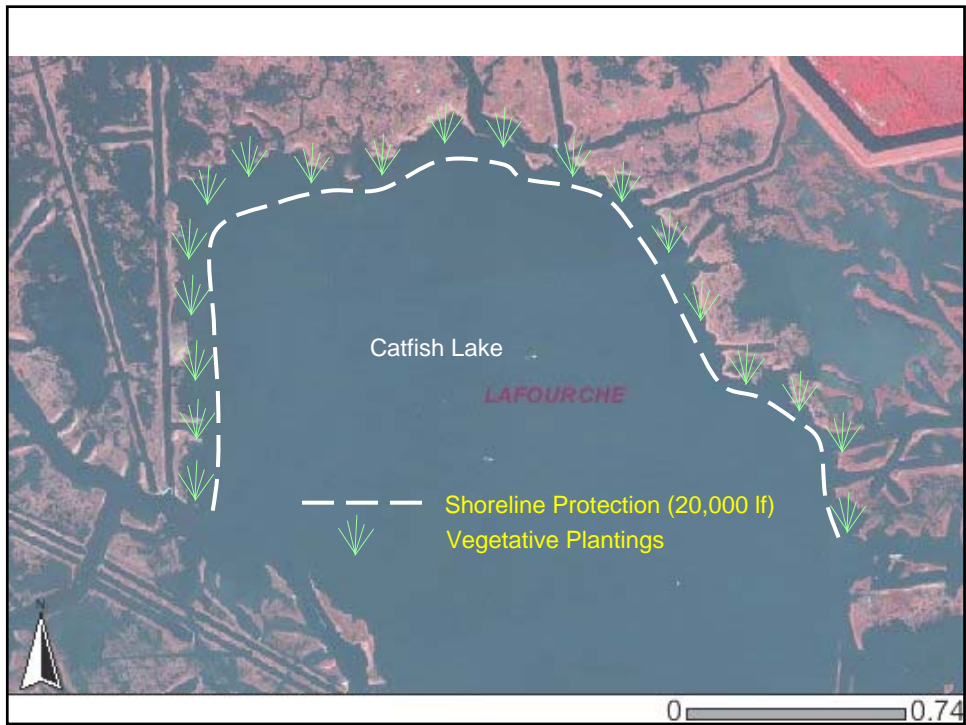
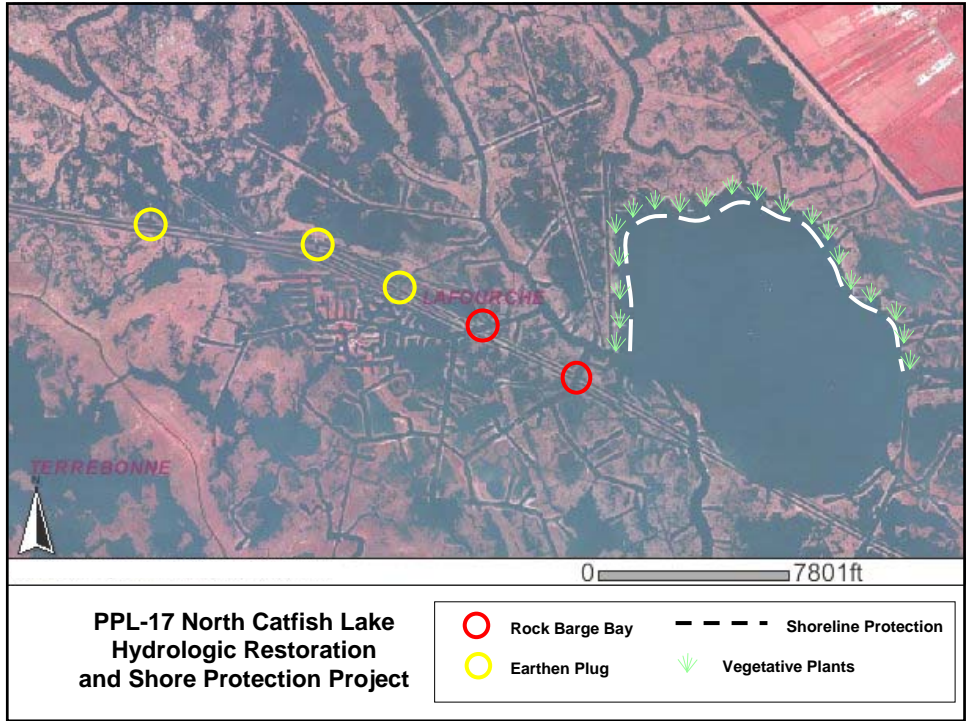
## Catfish Lake Hydrologic Restoration and Shore Protection

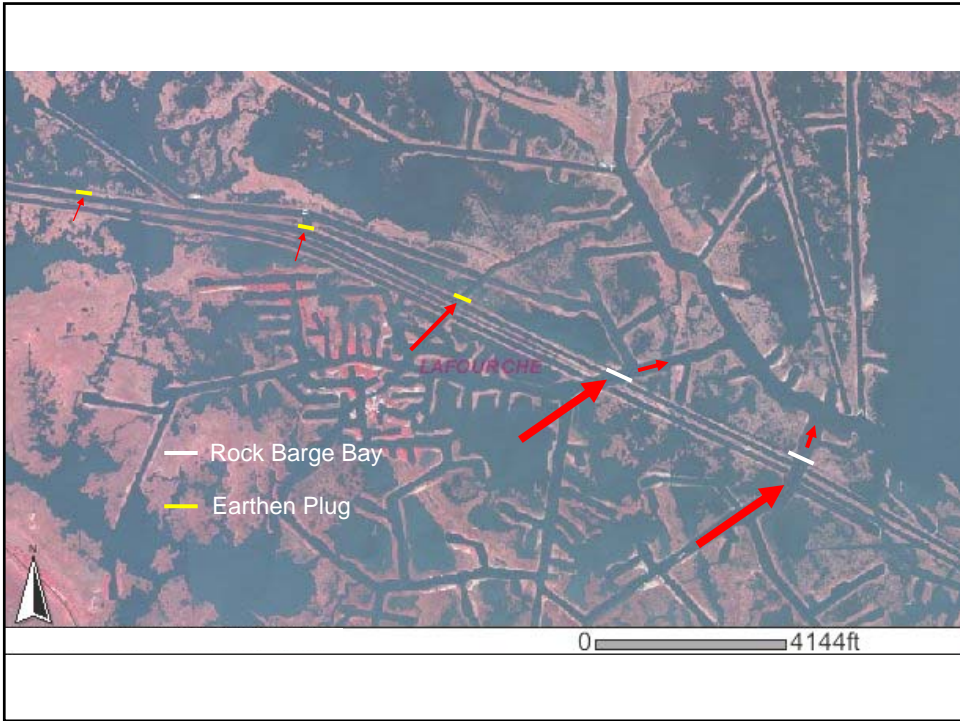
Terrebonne Basin, Lafourche Parish













**R3 –TE 2    Hanson Marsh Bank Stabilization  
Project**

RE 3 TE 2

USFWS  
Roy  
Photo

**PPL17 PROJECT NOMINEE FACT SHEET**  
**January 10, 2007**

**Project Name**

Hanson Marsh Bank Stabilization

**Coast 2050 Strategy**

Coastwide Strategy – Stabilization of Major Navigation Channels

Regional Strategy – Stabilize banks of navigation channels for water conveyance

**Project Location**

Region 3, Terrebonne Parish, southwest of Houma on the Mandalay National Wildlife Refuge, north of the GIWW

**Problem**

The project area has experienced rapid marsh deterioration since the mid 1950s and continues to lose marsh at an alarmingly high rate. Construction of the GIWW has altered the natural hydrology of the area. The fresh floating marshes in the area formed under low-energy conditions and stable water levels. Direct connectivity with the GIWW has resulted in rapid water level fluctuations during frontal passages and extreme tidal events. Navigation traffic on the GIWW also causes surges of water to rapidly enter and exit the area which causes break-up of the fragile floating marsh substrate. The altered hydrology and rapid water level fluctuations make it difficult for stands of desirable emergent vegetation (i.e., seed-producing annuals) and quality submerged aquatic vegetation to become established.

**Goals**

- 1) Stabilize the banks of the GIWW and prevent erosion of marsh habitat.
- 2) Prevent rapid water exchange between the Hanson Unit and the GIWW.

**Proposed Project Features**

The proposed project consists of 4,100 linear feet of bankline stabilization along the northern side of the GIWW. Project costs are based on a fiberglass sheetpile wall.

**Preliminary Project Benefits**

- 1) The total acreage benefited directly would be approximately 19 acres assuming an erosion rate of 10ft/yr along the GIWW. Indirect benefits would occur over approximately 180 additional acres of marsh and open water as a result of reduced wave energy and reduced water exchange with the GIWW.
- 2) The total net acres protected/created over the project life would be approximately 19 acres.
- 3) Bankline erosion along the GIWW would be reduced by 100% assuming that the structures are completely effective at stopping erosion from vessel wakes. In addition, there may be a slight reduction in marsh loss within the interior of the Hanson Unit.
- 4) The project would not maintain any structural component of the coastal ecosystem.
- 5) The project would not protect any significant infrastructure.

6) The project has no synergistic effect with other projects.

**Identification of Potential Issues**

At this time, no significant issues have been identified for this project. Similar bankline protection features have been constructed on Mandalay NWR under the Mandalay Bank Protection Demonstration Project.

**Preliminary Construction Costs**

The construction cost including 25% contingency is approximately \$1,637,500.

In 2004, this project was awarded a grant under the North American Wetlands Conservation Act (NAWCA) for \$765,000. However, project costs have increased significantly since the 2005 hurricane season and the grant funds are now insufficient to construct the project. However, with additional project partners, NAWCA funds could be used to construct the full project. Without additional funding, project partners are at risk of losing \$765,000 in NAWCA funds.

**Preparer of Fact Sheet**

Kevin Roy, U.S. Fish and Wildlife Service, 337-291-3120 [kevin\\_roy@fws.gov](mailto:kevin_roy@fws.gov)

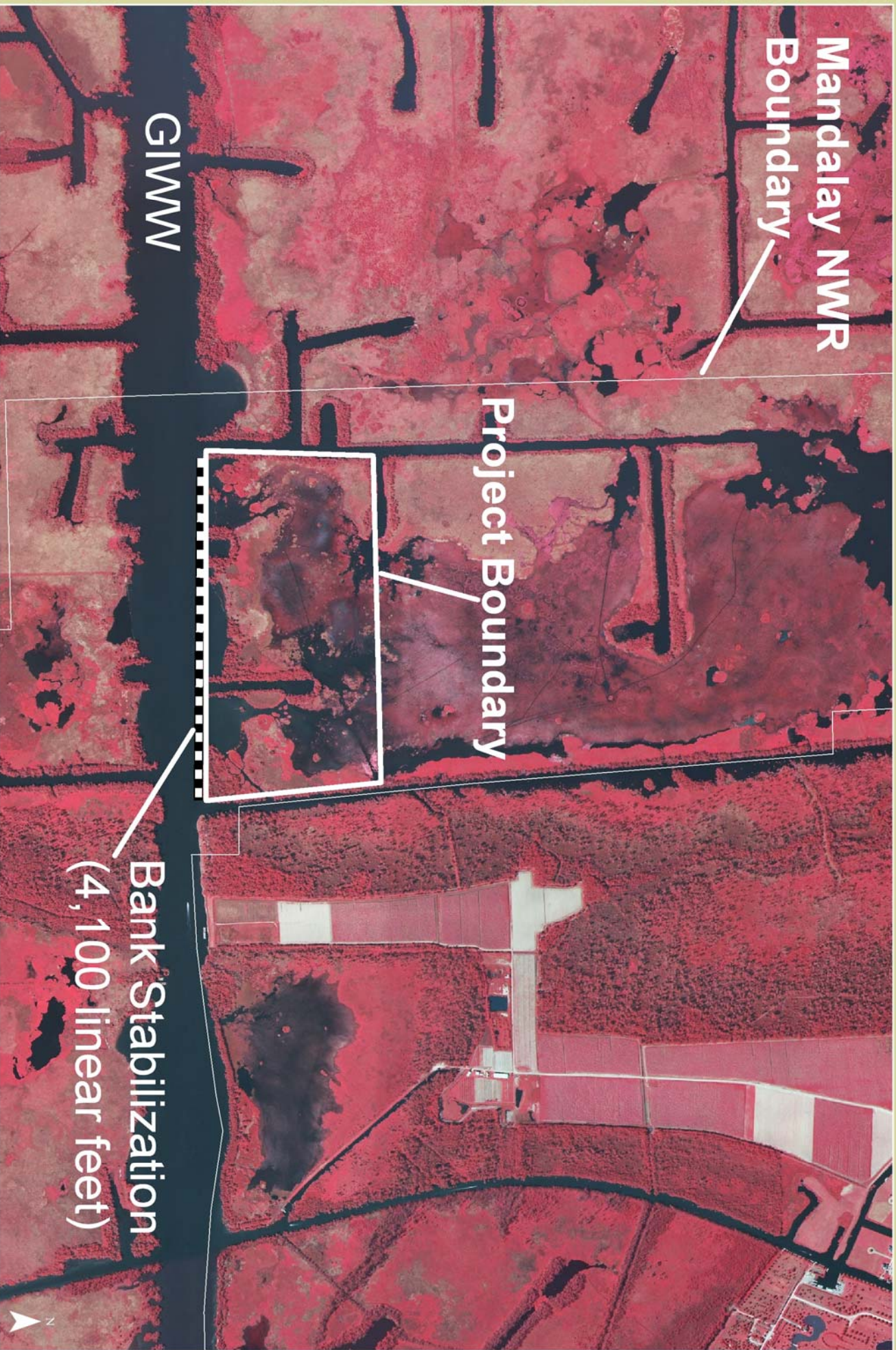
Paul Yakupzack, U.S. Fish and Wildlife Service, 985-853-1078 [paul\\_yakupzack@fws.gov](mailto:paul_yakupzack@fws.gov)



**U.S. Fish & Wildlife Service**

**Louisiana Ecological Services Field Office**

*Hanson Marsh Bank Stabilization*



**Mandalaay NWR  
Boundary**

**Project Boundary**

**GIMWW**

**Bank Stabilization  
(4,100 linear feet)**



**R3 –TE 3 North Lost Lake Shoreline Protection  
and Hydrologic Restoration Project**

R3

TE3

Photo  
Roy USGS

**PPL17 PROJECT NOMINEE FACT SHEET**  
**January 10, 2007**

**Project Name**

North Lost Lake Shoreline Protection and Hydrologic Restoration

**Coast 2050 Strategy**

Regional Strategy – Dedicated delivery of sediment for marsh building

Regional Strategy – Increase transfer of Atchafalaya River water to lower Penchant tidal marshes

Coastwide Strategy – Maintenance of Bay and Lake Shoreline Integrity

**Project Location**

Region 3, Terrebonne Parish, southwestern Terrebonne Basin from Lake Pagie to the western side of Lost Lake

**Problem**

Shoreline erosion around Lost Lake threatens fragile interior marsh as the lake rim erodes and breaches form creating greater tidal connectivity. Northeast of Lost Lake, interior marsh breakup has resulted in large, interior ponds where wind/wave energy may result in more erosion. Significant marsh loss has occurred between Lake Pagie and Bayou DeCade to the point that little structural framework remains separating those two waterbodies. West of Lost Lake, interior breakup has occurred as a result of ponding and the periodic entrapment of higher salinity waters during storm events.

**Goals**

- 1) Reduce shoreline erosion around Lost Lake and protect the lake rim integrity.
- 2) Address interior marsh loss with terraces to prevent future breakup from wave erosion.
- 3) Prevent the coalescence of Bayou DeCade and Lake Pagie and extend the landbridge function of the North Lake Mechant Landbridge Project.
- 4) Increase fresh water and sediment delivery to marshes west of Lost Lake.

**Proposed Project Features**

The proposed project consists of several features to protect marsh, create marsh and extend the landbridge function of the North Lake Mechant Landbridge Project to the west. Marshes north, east, and west of Lost Lake serve an important function as an intermediate zone buffering fresh marshes to the north from the higher salinities found to the south. Features include:

- 1) Shoreline protection (i.e., 30,600 feet of vegetative plantings) and marsh nourishment (160 acres) along the northern and western Lost Lake shoreline to protect the structural integrity of the lake rim.
- 2) Terracing (approximately 56,000 linear feet or 30 acres) to reduce fetch in deteriorated marsh northeast of Lost Lake.
- 3) Marsh creation (300 acres) between Lake Pagie and Bayou DeCade to prevent the coalescence of those two waterbodies and restore/protect some key features of structural framework (i.e., lake rim and bayou bank) in the area. This feature will compliment features to be built under the North Lake Mechant Landbridge Project.

4) At certain times of the year, Carencro Bayou is an excellent source of fresh water and sediments from the Atchafalaya River/Four League Bay system. However, delivery of that water into the marshes west of Lost Lake is limited by a series of fixed-crest weirs which limit water exchange. An opportunity exists to increase freshwater and sediment delivery by removing some of the fixed-crest weirs and installing more open structures.

#### **Preliminary Project Benefits**

- 1) The total acreage benefited directly would be 490 acres (460 acres of marsh creation/nourishment and 30 acres of terraces). Indirect benefits would occur over approximately 5,000 additional acres of marsh as a result of reduced fetch and increased fresh water and sediment delivery.
- 2) The total net acres protected/created over the project life would be between 400-500 acres.
- 3) Shoreline erosion along Lost Lake would be reduced by 50% with vegetative plantings. Background loss rates would be reduced by 50% in the marsh creation and marsh nourishment areas. Marsh loss in the area west of Lost Lake would be reduced with increased fresh water and nutrients. The assumed reduction in marsh loss in that area is approximately 20%. Overall, the reduction in marsh loss across the project area would be in the range of 25% to 50%.
- 4) The project would help maintain the Lost Lake shoreline which is a structural component of the coastal ecosystem.
- 5) The project would not protect any significant infrastructure.
- 6) The project would provide a synergistic effect with the North Lake Mechant Landbridge Restoration Project located to the east. The concept of protecting this important landbridge would be extended to the west with this project. Other CWPPRA projects which protect marsh in this important area include the Brady Canal Hydrologic Restoration Project and the Penchant Basin Natural Resources Plan. This project would work synergistically with those projects to protect marsh in this portion of the western Terrebonne Basin.

#### **Identification of Potential Issues**

At this time, no significant issues have been identified for this project. Lost Lake contains no oyster leases and maintenance costs for the project would be low.

#### **Preliminary Construction Costs**

The construction cost including 25% contingency is approximately \$16,158,429.

#### **Preparer of Fact Sheet**

Kevin Roy, U.S. Fish and Wildlife Service, 337-291-3120 email: kevin\_roy@fws.gov



# U.S. Fish & Wildlife Service

# Louisiana Ecological Services Field Office

## *North Lost Lake Shoreline Protection and Hydrologic Restoration*





**R3 –TE 4 Falgout Canal Terracing and  
Freshwater Enhancement Project**

R3 TE4 NRCS PDT

**PPL17 PROJECT NOMINEE FACT SHEET**  
**1/10/2007**

**Project Name**

Falgout Canal Terracing and Freshwater Enhancement Project

**Coast 2050 Strategy**

Region 3, Strategy 4: Enhance Atchafalaya River influence to Terrebonne marshes, excluding upper Penchant marshes.

**Project Location**

Region 3, Terrebonne Basin, Terrebonne Parish, marshes adjacent to Falgout Canal between Bayou Dularge and Houma Navigation Canal.

**Problem**

The marshes located in the project area have been hydrologically isolated from historical flow patterns by construction of various navigation channels, including the Houma Navigation Canal (HNC) and the Falgout Canal. Because of these barriers, the prevailing hydrologic influence is confined to southern tidal flows, which has resulted in elevated salinity and land loss in historically fresh and intermediate marshes. The project would expand the zone of Atchafalaya beneficial influence by modifying water flow patterns to reconnect these areas of need. The marshes are expected to benefit from reduced salinity and increased nutrients and sediment.

**Proposed Project Features**

Three sets of six 36" culverts will be installed through the road separating the Falgout Canal from the marshes to the south to introduce freshwater, nutrients and sediment. Approximately 50,000 linear feet of earthen terraces will be constructed in the broad shallow open water south of Falgout Canal to facilitate marsh development. The earthen terraces will be shaped into a bifurcated channel design to promote freshwater conveyance while providing terrace functions of marsh creation and reduction of fetch across broad open water areas. The bifurcated channel terrace design mimics natural delta formation.

**Goals**

The project will reestablish historical north to south flow in which the benefits of increasing freshwater, nutrients and sediment derived from the Atchafalaya River can be extended to marshes that have suffered loss due to hydrologic isolation and salinity intrusion. The project will also facilitate creation of new marsh by terracing large shallow open water areas receiving new freshwater flow.

**Preliminary Project Benefits**

Much of the project area has degraded to open water on the northern end. The 50,000 linear feet of terracing will be constructed within the large shallow open water areas and create approximately 67 acres of new marsh. Approximately 310 acres of marsh exists within the project area of approximately 1500 areas. The addition of nutrients and sediment is expected to create an additional 50 acres of marsh for a total of 117 acres created over the 20 year life of the project. The southern end of the project area consists of fragmented marsh that will benefit from additional nutrients.

**Identification of Potential Issues**

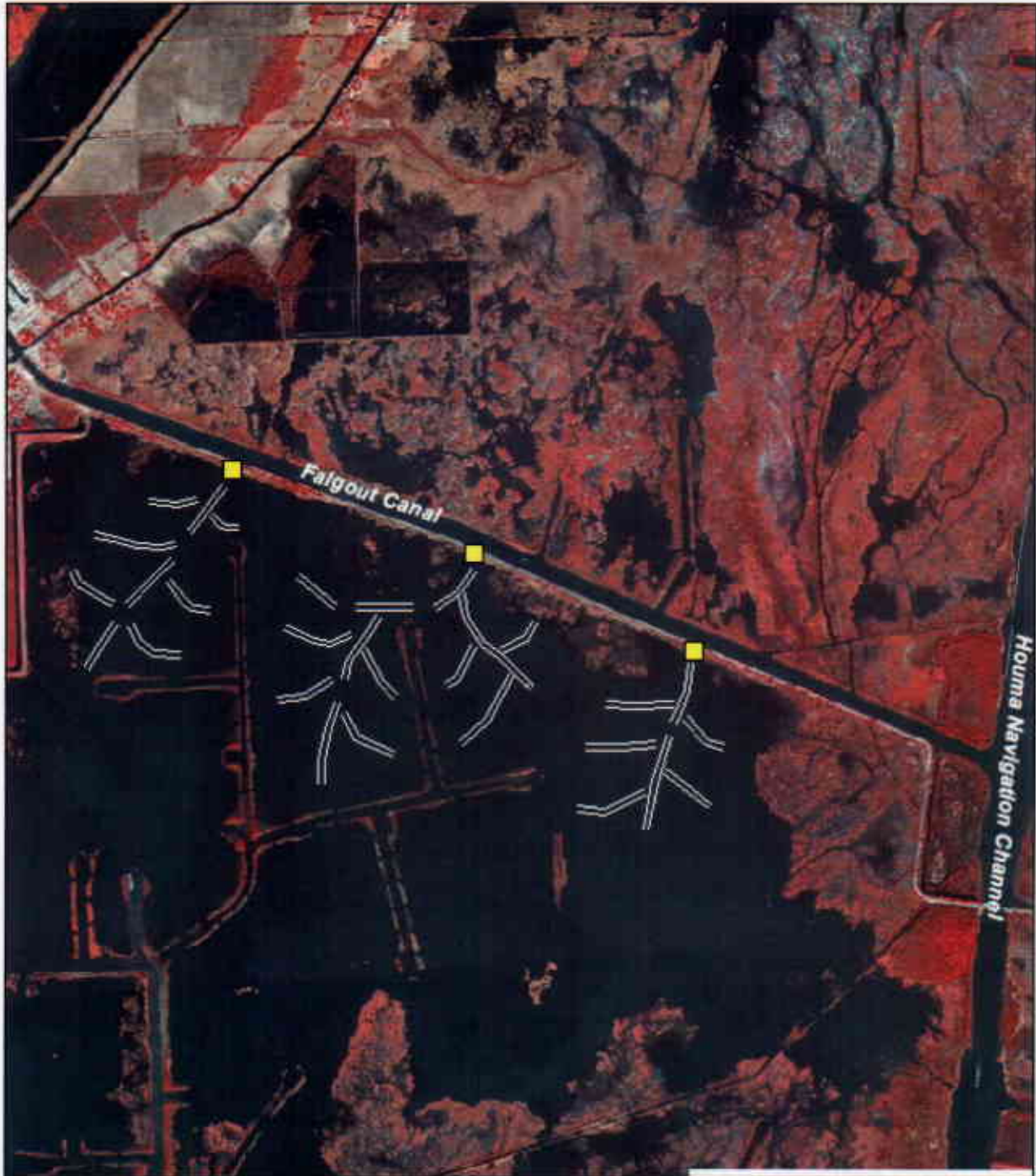
The proposed project has the following potential issues: Landrights and O&M.

**Preliminary Construction Costs**

\$2.5 million

**Preparer of Fact Sheet**

Ron Boustany, NRCS, (337) 291-3067, [ron.boustany@la.usda.gov](mailto:ron.boustany@la.usda.gov)



**Legend**

-  Culvert
-  Terraces



Falgout Canal Terracing  
and Freshwater Introduction  
Terrebonne Parish, LA  
PPL-17



**PPL 17**

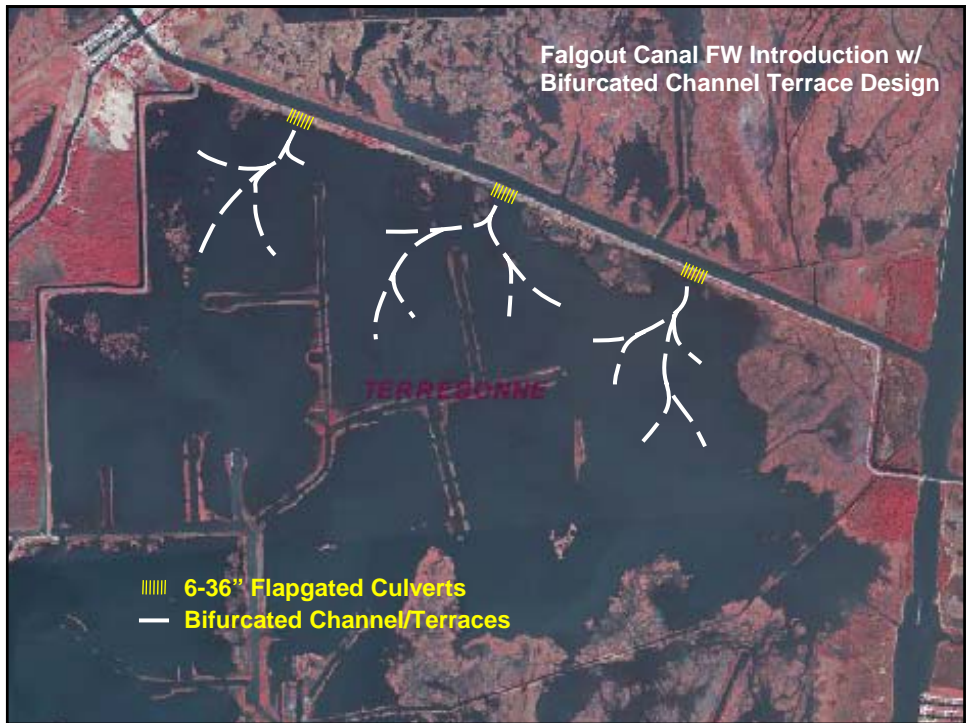
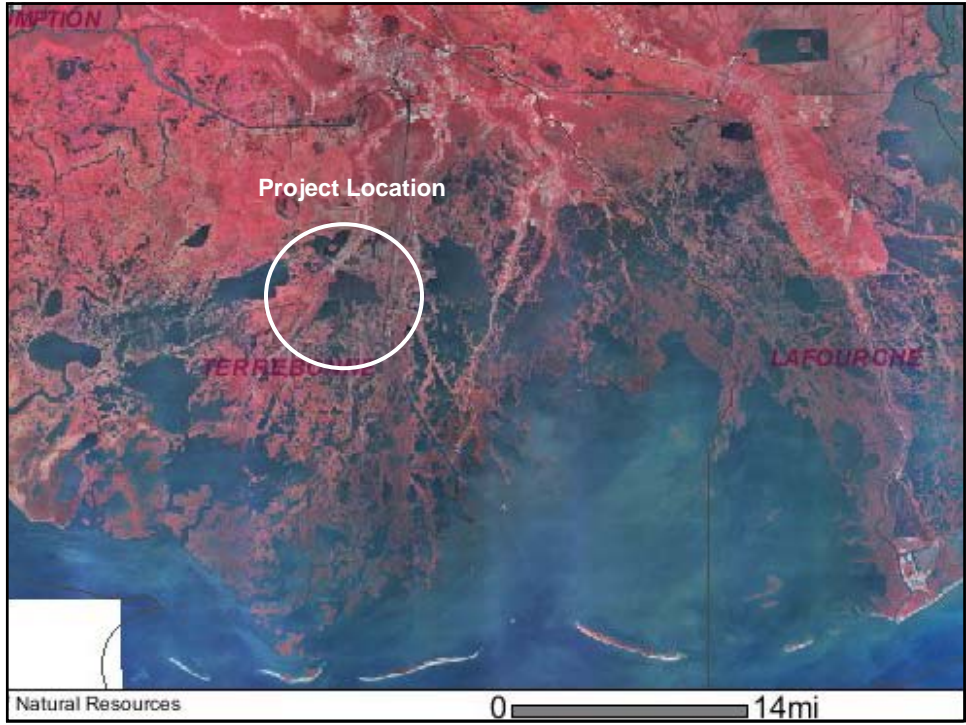
**Falgout Canal Terracing and Freshwater  
Enhancement Project**

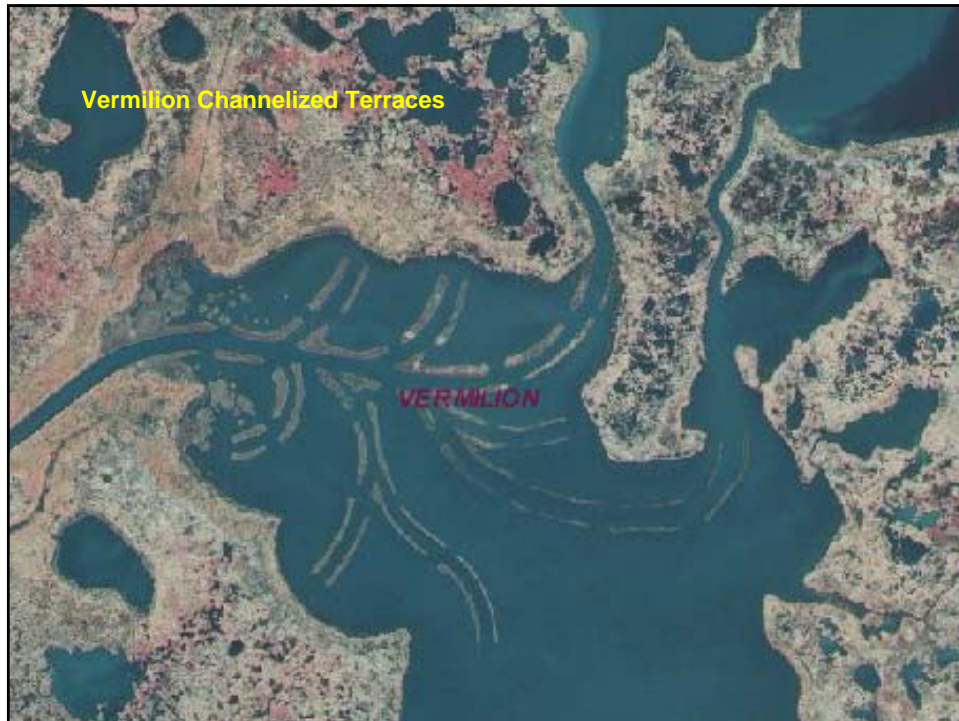
**Terrebonne Parish**

**A significant flow of Atchafalaya River water moves through Minors Canal into Lake Decade and via the GIWW through the Houma Navigation Canal. The Falgout Canal provides a substantial lateral conveyance of this freshwater between Lake Decade and the Houma Navigation Canal. The marsh complex located to the south of the canal is completely isolated from this freshwater.**

**This historically intermediate marsh area is currently almost exclusively influenced by tidal saline waters from the south. Consequently, the marsh and swamp areas have been nearly completely degraded to open water.**

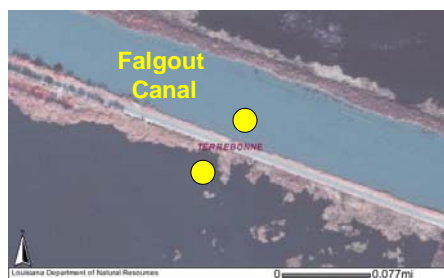
**The project will reestablish the historic North-South hydrologic connection by extending the influence of Atchafalaya waters into this area and provide the benefits of nutrients, sediments, and freshwater to begin sustainable recovery. To jump-start the restoration process a series of channelized terraces will be constructed to optimize the efficiency of freshwater conveyance to the south, create marsh in otherwise shallow degraded open water, and provide wind-breaks to allow for sediment fallout and vegetation development.**





## NRCS Field Salinity

	Falgout Canal	Across Falgout Cnl Rd
April 4, 2006	2.1 ppt	12.9 ppt
September 21, 2006	2.1 ppt	8.7 ppt



**R3 –TE 5 Central Terrebonne Freshwater  
Enhancement Project**

**PPL17 PROJECT NOMINEE FACT SHEET**  
1/10/2007**Project Name**

Central Terrebonne Freshwater Enhancement Project

**Coast 2050 Strategy**

Region 3, Strategy 4: Enhance Atchafalaya River influence to Terrebonne marshes, excluding upper Penchant marshes.

**Project Location**

Region 3, Terrebonne Basin, Terrebonne Parish, Central Terrebonne marshes extending from South of Lake Decade through Lake Mechant south to Bayou Dularge Ridge.

**Problem**

The Bayou Delarge Ridge historically restricted the Gulf marine influence into Central Terrebonne marshes forming a diagonal restriction extending from northeast to southwest, where the Atchafalaya influence is prominent. The Grand Pass is currently a 900 ft wide artificial cut through the Bayou Delarge Ridge south of Lake Mechant. The pass is mainly used by commercial and recreational fisherman as a shortcut to the gulf and has greatly eroded to a point of approximately 36 feet deep that well exceeds optimal utility. The expansion of the pass to its current size has allowed for a substantial alteration of historic salinity and hydrology and consequently a broad area of the Central Terrebonne marshes are currently suffering some of the highest loss rates in the state.

**Proposed Project Features**

Structure consisting of rock barge bay would be constructed to reduce size of opening to no more than 80' wide and 15' deep. The project would reestablish the historic ridge function of the Bayou Delarge that separated Lake Mechant from the gulf and moderate salinities that have greatly impacted the marshes to the north of Lake Mechant. The project will also increase the Atchafalaya influence in the area by modifying the current structure located in Liners Canal north of Lake Decade and provide maintenance dredging at Minors Canal.

**Goals**

The project will reestablish historic hydrologic and salinity conditions by reducing the artificial intrusion of Gulf marine waters via the Grand Pass into the Central Terrebonne marshes while enhancing the influence of the Atchafalaya River waters into the area.

**Preliminary Project Benefits**

Preliminary analysis indicates that the project could reduce the cross-section of the pass by as much as 80%, which would have a significant effect on marine tidal transfer to Lake Mechant. The hydrologic modifications to Liners and Minors canal are expected to increase freshwater conveyance to the region by 500-1000 cfs.

**Identification of Potential Issues**

The proposed project has the following potential issues: Landrights and O&M.

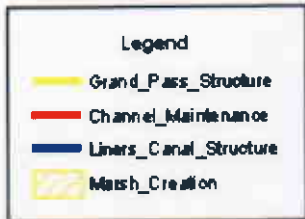
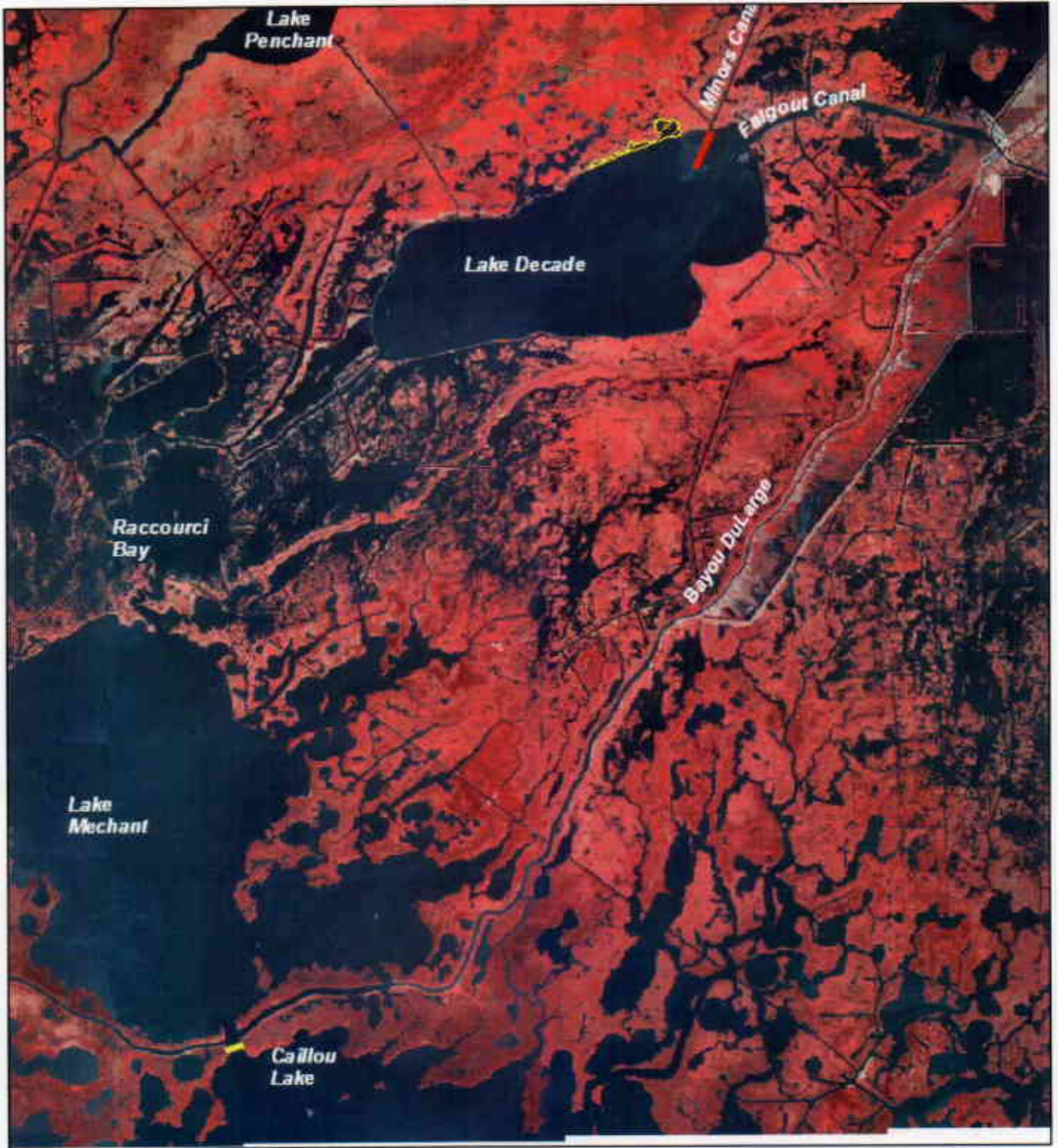
**Preliminary Construction Costs**

\$4.5 million

**Preparer of Fact Sheet**

Ron Boustany, NRCS, (337) 291-3067, [ron.boustany@la.usda.gov](mailto:ron.boustany@la.usda.gov)





Central Terrebonne Enhancement  
 PPL-17  
 Terrebonne Parish, Louisiana



## PPL-17

### Central Terrebonne Freshwater Enhancement Project Terrebonne Parish

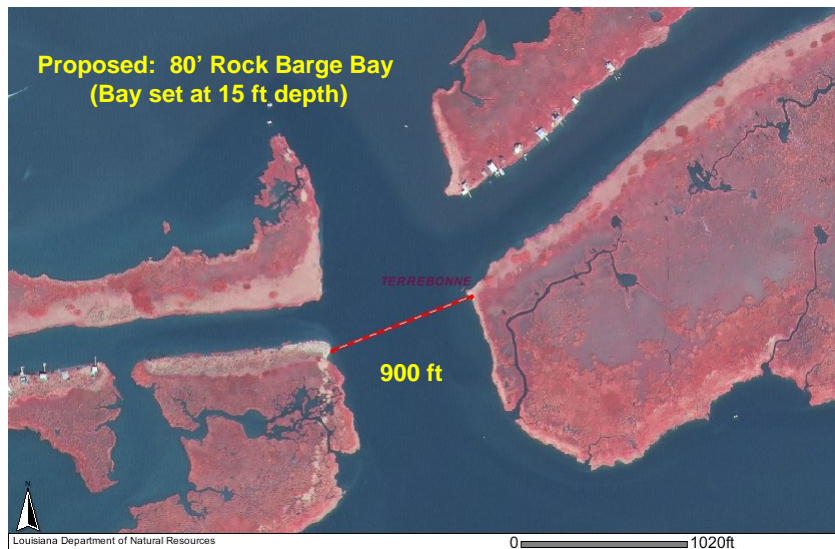
Grand Pass is currently 900 ft wide. Structure consisting of rock barge bay would be constructed to reduce size of opening to 80' wide. The project would reestablish the historic ridge that separated Lake Mechant from the gulf and moderate salinities that have greatly impacted the marshes to the north of Lake Mechant. The project will also increase the Atchafalaya influence in the area and decrease the intrusion of Gulf marine waters into the interior fresh and intermediate marshes.



**Bayou Dularge Ridge Function Restoration Project**



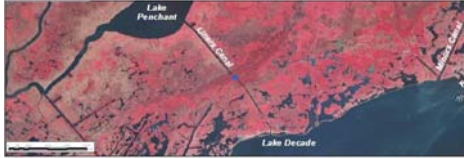
**Proposed: 80' Rock Barge Bay  
(Bay set at 15 ft depth)**



**Grand Pass Structure**



**Liners Canal Structure**



**Minors Canal Outfall  
Maintenance/Marsh Creation**



**R3 –TE 6 Wine Island Restoration and  
Nourishment Project**

**PPL17 PROJECT NOMINEE FACT SHEET**  
**Wine Island Restoration and Nourishment**  
**24 January 2007**

**Project Name:** Wine Island Restoration and Nourishment

**Coast 2050 Strategy:** one coastwide common strategy (beneficial use of dredged material from maintenance operations).

**Project Location:** Coast 2050 Region 3, Terrebonne Basin, Terrebonne Parish.

**Problem:** Based upon July 2000 surveys, Wine Island now has an area of about 34 acres including the 23-acre rock enclosure. Due to the dynamic nature of barrier islands, open water areas exist within the rock cell. Without additional material, it is likely the rock dike will eventually enclose only open water. The rock dike may also become slightly submerged presenting a significant boating hazard. Material from maintenance dredging on the Cat Island Pass bar channel has been historically deposited on two shoals adjacent to the navigation channel on the right descending bank.

**Proposed Project Features:** Project features include mining a stockpile of material dredged from the HNC. HNC dredging is scheduled every two years by the U.S. Army Corps of Engineers, New Orleans District. Material removed from the Cat Island Pass bar channel (Mile 0.0 to Mile - 4.5) is proposed for use in this project. Newly restored areas within the rock dike will be planted with various species in an effort to reduce future erosion

**Goals:** The project goals are to extend the life of Wine Island and re-introduce additional material into the sediment-starved environment. By filling in the open water areas, the navigation hazard from the rocks in open water will be eliminated.

**Preliminary Project Benefits:** approximately 15 to 20 acres

**Identification of Potential Issues:** pipeline utilities. Construction would be performed during 1 October to 1 April time window to avoid the brown pelican nesting season.

**Preliminary Construction Costs:**

\$ 6,765,000

\$8,456,250 with 25% contingency

**Fact Sheet Prepared by:**

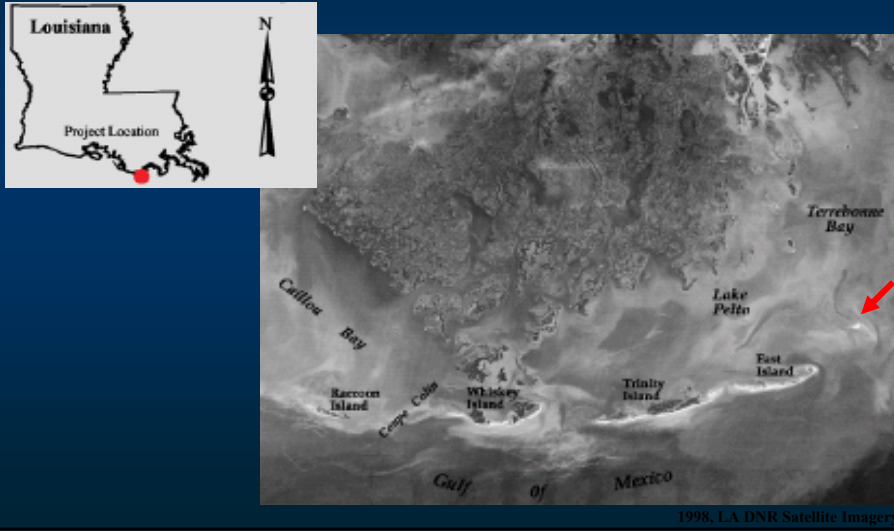
Patricia A. Taylor, P.E., EPA Region 6, (214) 665-6403, [Taylor.Patricia-A@epa.gov](mailto:Taylor.Patricia-A@epa.gov)

# Wine Island Restoration and Nourishment



— ■ — Proposed marsh creation  
and vegetative plantings

# Wine Island Restoration and Nourishment



Source: University of New Orleans (UNO), 2001. Beneficial Use of Dredged Material Disposal History Along Select Navigational Channels in Louisiana. Prepared for the U.S. Army Corps of Engineers, New Orleans District, May 2001

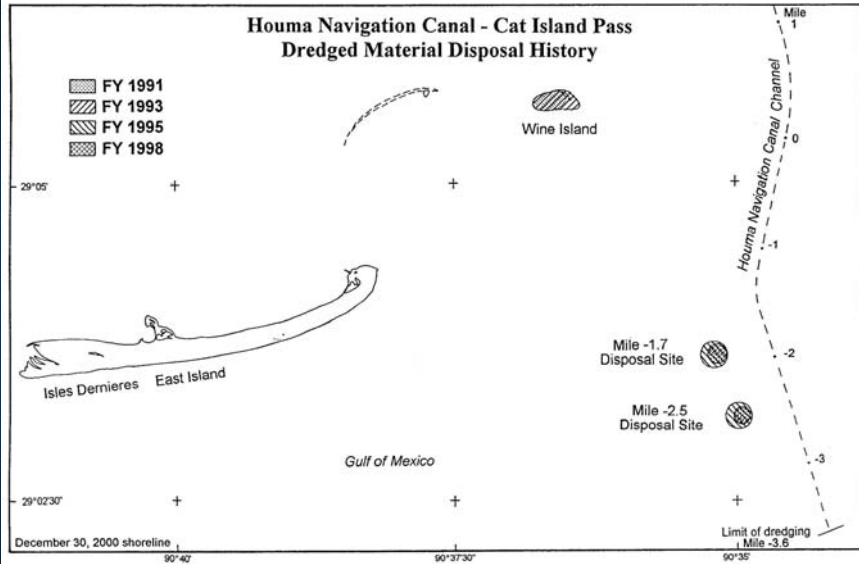


Figure 12B. The dredged material disposal history for the Houma Navigation Canal, Louisiana - Bar Channel/Cat Island Pass Reach BUMP study area through FY 2000.





## Wine Island Restoration and Nourishment

### Goals:

- Extend the life of Wine Island
- Re-introduce material into sediment-starved shoreline
- Fill in open water areas on the island
- Protect Terrebonne estuary and vegetated wetlands from direct exposure to Gulf

### Cost/Benefits:

- 15-20 acres will be directly created/restored
- Preservation of important bird (i.e. Black Skimmer) nesting habitat
- Est. Cost: ~ \$6.8 million
- Est. Cost + contingency: ~ \$8.5 million



# Wine Island Restoration and Nourishment

Questions?

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EPA Region 6  
(214)665-6608  
landers.timothy@  
epa.gov



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**R3 –TE 7    East Island Breach, Barrier Island  
Restoration Project**

**PPL17 PROJECT NOMINEE FACT SHEET**  
**East Island Breach, Barrier Island Restoration**  
**24 January 2007**  
**Prepared by EPA Region 6**

**Project Name and Number:** East Island Breach, Barrier Island Restoration – TE-XX

**Coast 2050 Strategy:** This proposed barrier island/marsh restoration project demonstrates one 2050 strategic goal – assure vertical accumulation to achieve sustainability; three coastwide common strategies: (restore/maintain barrier islands; maintain shoreline integrity; and utilize offshore sand and sediment resources); and one regional ecosystem strategy (construct interior islands and/or reefs to protect bay/lake shoreline and/or to restore hydrology, restore and maintain the barrier islands and Gulf shorelines such as Isle Dernieres, Timbalier barrier island chains, Marsh Island, Point au Fer and Cheniere au Tigre (including back barrier beaches).

**Project Location:** Coast 2050 Region 3, Terrebonne Basin, Terrebonne Parish.

**Problem:** A breach on the eastern end of East Island that developed in 2005, increased to approximately 4,000 feet in length due to Hurricanes Katrina and Rita. The New Cut restoration (TE-37) CWPPRA project does not address this breach, or extensive beach and back barrier marsh restoration on the eastern end behind the breach. This area is exposed to considerable wave action and sand movement not only on the Gulf shore, but also on the backside of the island.

**Proposed Project Features:** Proposed project features consist of unconfined placement of dredged material of the breach on the eastern end on East Island. The dredged material will increase the footprint of the island by addressing the breach, increasing the width of East Island in order to provide a suitable platform to work with the natural migration of the islands, and creating additional back barrier marsh. Substantial economic savings in engineering and design can result from utilizing the data gathered for the New Cut restoration project. Availability of the geotechnical investigation and modeling results is expected to save approximately \$500,000 in the engineering and design (Phase I) costs and more importantly, expedite project design efforts.

**Goals:** The project goals are:

- 1) introduce new sand into this sand-starved environment;
- 2) extend the life of the barrier island by increasing its width;
- 3) create approximately 200 acres of intertidal marsh using new dredged material;
- 4) provide a back barrier platform to enable successful island migration; and
- 5) protect the Terrebonne estuary and vegetated wetlands against the direct exposure to the Gulf.

Preliminary Project Benefits: approximately 200 acres.

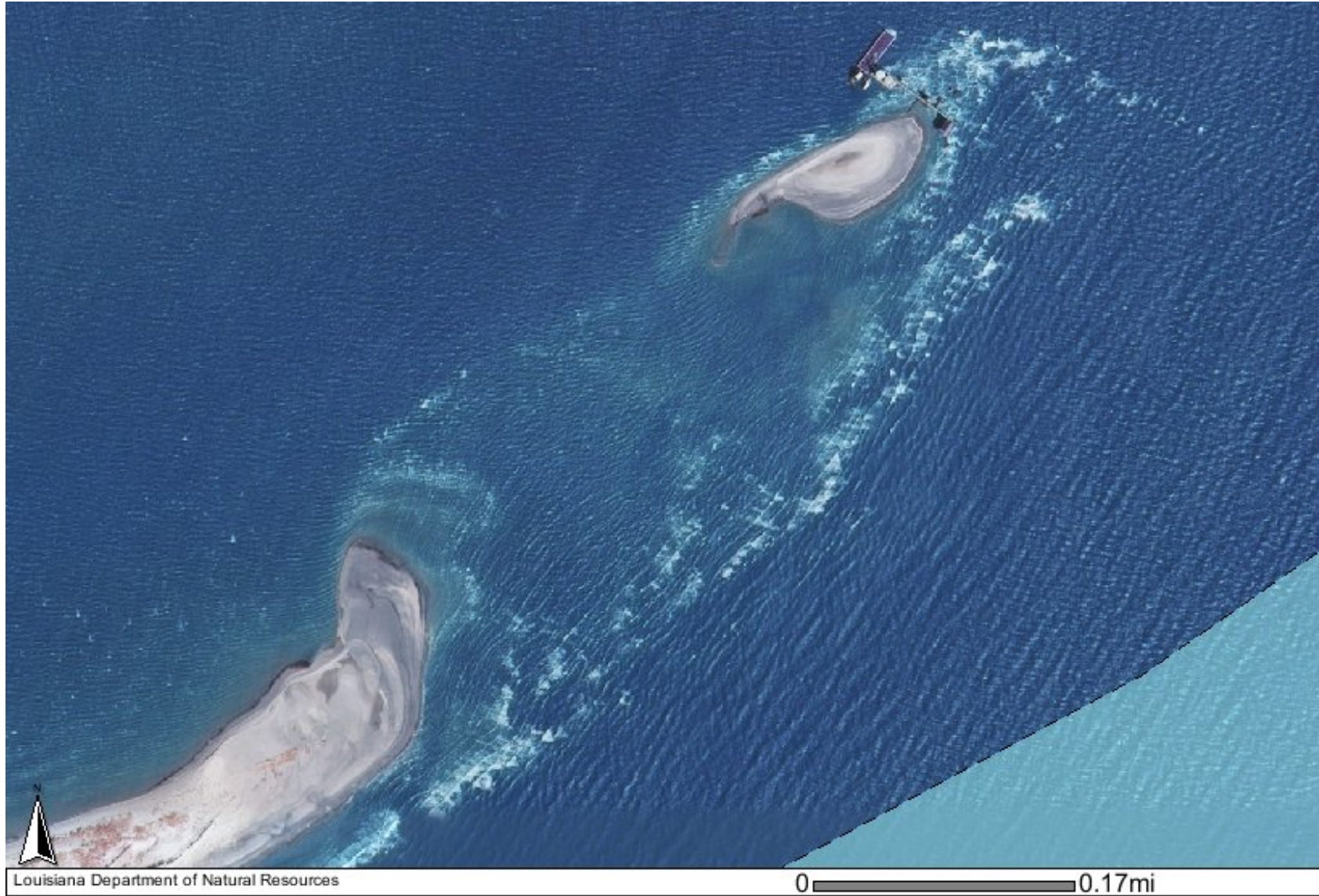
**Identification of Potential Issues:** The proposed project has the following potential issues: land rights and oyster leases.

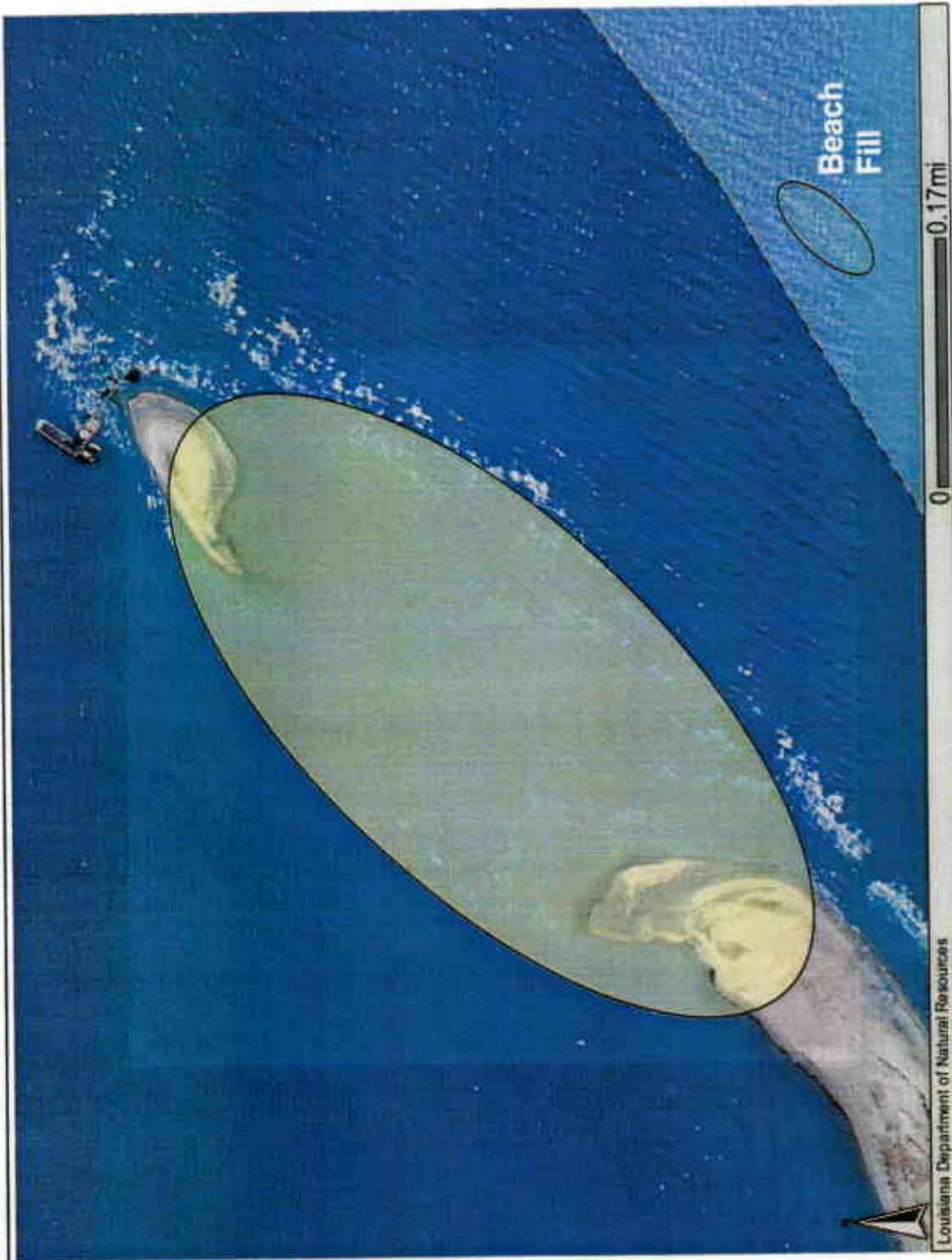
**Preliminary Construction Costs:**  
\$16,840,000  
\$21,050,000 with 25% contingency

**Preparers of Fact Sheet:**

Patricia A. Taylor, P.E., EPA Region 6, (214) 665-6403

# East Island Breach



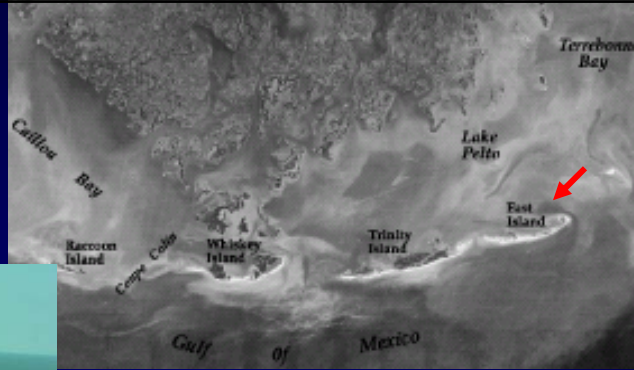


Louisiana Department of Natural Resources

**PPL 17 Proposed  
East Island Breach Barrier  
Island Restoration**

Data Source:  
LA Department of Natural Resources  
Map Date: December 2006

# East Island Breach Barrier Island Restoration



1998, LA DNR Satellite Imagery



# East Island Breach Barrier Island Restoration



## East Island Breach Barrier Island Restoration

### Goals:

- Increase life of barrier island by increasing width
- Use dredged material to increase intertidal marsh
- Provide back barrier platform to enable successful island migration
- Protect Terrebonne estuary and vegetated wetlands from direct exposure to Gulf

### Cost/Benefits:

- ~200 acres of wetland created/protected over project life
- Est. Cost: ~ \$16.8 million
- Est. Cost + contingency: ~ \$21 million

## East Island Breach Barrier Island Restoration

Questions?

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**R3 –TE 8 Beach and Back Barrier Marsh  
Restoration - East Island Project**

REB TE-8

PPT  
EPA  
Landers

**PPL17 PROJECT NOMINEE FACT SHEET**  
**Beach and Marsh Restoration East Island**  
**10 January 2007**  
**Prepared by EPA Region 6**

**Project Name and Number:** Beach and Back Barrier Marsh Restoration – East Island, TE-XX

**Coast 2050 Strategy:** This proposed barrier island/marsh restoration project demonstrates one 2050 strategic goal – assure vertical accumulation to achieve sustainability; three coastwide common strategies: (restore/maintain barrier islands; maintain shoreline integrity; and utilize offshore sand and sediment resources); and one regional ecosystem strategy (construct interior islands and/or reefs to protect bay/lake shoreline and/or to restore hydrology, restore and maintain the barrier islands and Gulf shorelines such as Isle Dernieres, Timbalier barrier island chains, Marsh Island, Point au Fer and Cheniere au Tigre (including back barrier beaches).

**Project Location:** Coast 2050 Region 3, Terrebonne Basin, Terrebonne Parish. It is in the Terrebonne mapping unit. This barrier island is part of the Isles Dernieres and the project area is located approximately 38 miles south of Houma, LA.

**Problem:** Barrier islands are the first line of defense against storm surge and protect the interior wetlands and infrastructure from open ocean wave effects. From 1887 to 2002 the documented shoreline change for East Island was a loss of 17 feet per year (Connor et al. 2004). A breach on the eastern end of East Island that developed in 2005, increased to approximately 4,000 feet due to Hurricanes Katrina and Rita subjecting East Island to sustained wave action. Although the New Cut restoration (TE-37) CWPPRA project is under construction, it does not address the breach. The TE-37 project also does not provide for extensive beach and back barrier marsh restoration on the eastern end of East Island. This easternmost area sustains considerable wave action and material movement not only on the Gulf shore, but also on the backside of the island and fortification is needed.

**Proposed Project Features:** The 2003 CWPPRA Adaptive Management Assessment of Five Barrier Island Restoration Projects in Louisiana reviewed Raccoon Island (TE-29), Whiskey Island (TE-27), Trinity Island (TE-24), East Island (TE-20), and East Timbalier (TE-25/30). This report states, “hydraulic fill barrier island restoration projects were more effective in increasing the survivability of these islands than the use of hard structures” (Penland et al. 2003).

Proposed project features consist of two components:

- unconfined placement of dredged material extending the width of the back barrier marsh of East Island; and,
- unconfined placement of beach fill on East Island.

The dredged material will be used to increase the width of the island in order to provide a suitable platform to work with the natural migration of the islands and create additional back barrier marsh. Substantial economic savings in engineering and design can result from utilizing the data gathered for the New Cut restoration project. For example, the Wine Island Pass offshore borrow area, the source recently identified for the TE-37 project, has been characterized and sufficient and suitable material is available for this proposed project after completing the New Cut work. Approximately 5.4 MCY of material is available with only 2.5 expected to be

used in constructing TE-37. The wave modeling performed in association with the New Cut project is still applicable. Availability of the geotechnical investigation and modeling results is expected to save approximately \$500,000 in the engineering and design (Phase I) costs and more importantly, expedite project design efforts.

**Goals:** The project goals are:

- 1) Add sand into this sand-starved environment;
- 2) extend the life of this barrier island by increasing their width;
- 3) create approximately 200 acres of intertidal marsh using new dredged material;
- 4) provide a back barrier platform to enable successful island migration; and
- 5) protect the Terrebonne estuary and vegetated wetlands against the direct exposure to the Gulf of Mexico.

The overall project objectives are to fortify and extend the life of this barrier island and capitalize on the success of previous CWPPRA barrier island restoration projects.

**Preliminary Project Benefits:**

- 1) The total acreage benefited directly is 200 acres.
- 2) 200 acres of wetlands will be protected/created over the project life.
- 3) The anticipated loss rate reduction throughout the area of direct benefits over the project life is proposed to be <25%.
- 4) This project maintains a critical barrier island habitat and structural component of the coastal ecosystem.
- 5) The project is expected to have a net positive impact on critical and non-critical infrastructure.
- 6) The project will provide synergistic effects with other CWPPRA completed restoration projects, namely:
  - TE-20 Isles Dernieres restoration, East Island completed in 1999;
  - TE-24 Isles Dernieres restoration Trinity Island completed in 1999; and,
  - TE-37 New Cut restoration, current under construction.

**Identification of Potential Issues:** The proposed project has the following potential issues: land rights and oyster leases.

**Preliminary Construction Costs:**

Item:	Work or Material	Quantity	Unit	Unit Cost	Amount
1.	Mobilization/Demobilization	1	LS	\$1,000,000	\$ 1,000,000
2.	Dredging/Marsh Creation (in place)	1,930,000	CY	\$8.33/cy	\$ 16,076,900

5.4 mcy available at borrow location, 2.5 mcy used for TE-37  
 2.9 mcy available for project based upon 1.5 to 1.0 cut to fill ratio = 1.93 in place  
 cost based upon pre-hurricane award of \$5.55 (BA-37) per cubic yard  
 assuming cost of fuel is 50% of dredging cost per cubic yard (\$2.775)  
 cost of diesel fuel has doubled since award (\$2.775 X 2 = \$5.55)  
 estimated cost of dredging = \$5.55 + \$2.78 = \$8.33

3.	Vegetative plantings – 2 phases - \$100,000 each	\$ 200,000
4.	Sand fencing – 2 phases, single row 20,000 linear feet @ \$7.00/LF	\$ 140,000
	Estimated Construction Cost	\$ 17,416,900
	Estimated Construction Cost + 25% contingency	\$ 21,771,125

**Preparers of Fact Sheet:**

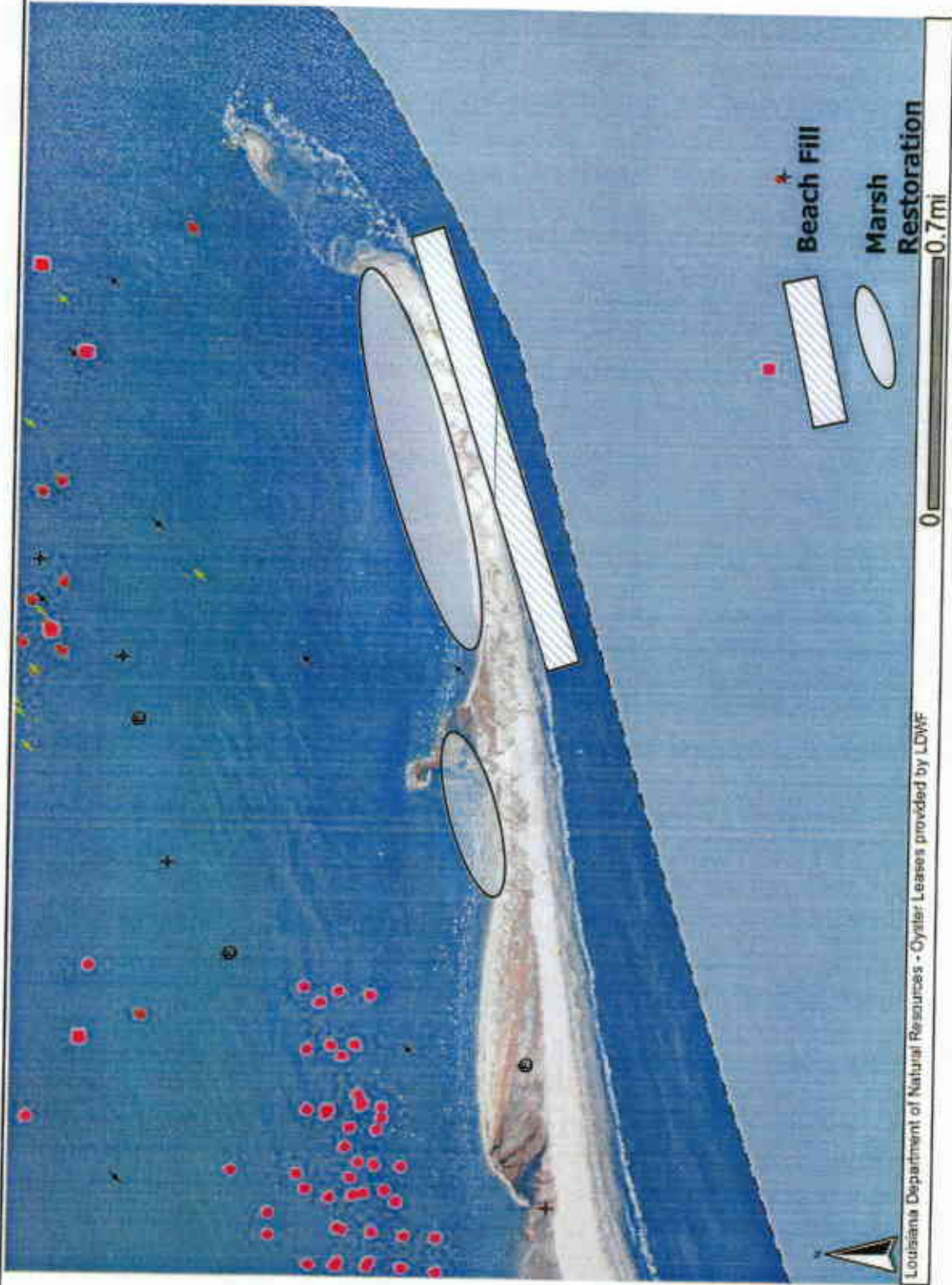
Patricia A. Taylor, P.E., EPA Region 6, (214) 665-6403

Kenneth Teague, EPA Region 6, (214) 665-6687

**References:**

(Connor et al. 2004) Connor, Jr., P.F.; S. Penland; A.D. Beall; M. A. Kulp; S. Fearnley, S. J. Williams; and A. H. Sallenger, Jr. 2004. Long-term Shoreline Change History of Louisiana's Gulf Shoreline: 1880's to 2002. Pontchartrain Institute for Environmental Sciences. PIES\_CRL Technical Report Series 04001.

(Penland et al. 2003) Penland, S.; Conner, P.; Cretini, F.; and Westphal, K. (Penland et al.) (2003) CWPPRA Adaptive Management: Assessment of Five Barrier Island Restoration Projects in Louisiana. Pontchartrain Institute of Environmental Sciences, University of New Orleans, New Orleans, Louisiana.



**PPL 17 Proposed  
Beach and Marsh Creation  
East Island**

Data Source:  
LA Department of Natural Resources  
Map Date: December 2006



## Beach and Marsh Restoration East Island

### Goals:

- Increase life of barrier island by increasing width
- Use dredged material to increase intertidal marsh
- Provide back barrier platform to enable successful island migration
- Protect Terrebonne estuary and vegetated wetlands from direct exposure to Gulf

### Cost/Benefits:

- ~200 acres of wetland created/protected over project life
- Est. Cost: ~ \$17.5 million
- Est. Cost + contingency: ~ \$21.8 million

## Beach and Marsh Restoration East Island

Questions?

Tim Landers  
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**R3 –TE 9 Beach and Back Barrier Marsh  
Restoration - Trinity Island Project**



RE 3 TE 9

PPT  
EPA  
Landers

**PPL17 PROJECT NOMINEE FACT SHEET**  
**Beach and Marsh Restoration Trinity Island**  
**10 January 2007**  
**Prepared by EPA Region 6**

**Project Name and Number:** Beach and Back Barrier Marsh Restoration – Trinity Island, TE-XX

**Coast 2050 Strategy:** This proposed barrier island/marsh restoration project demonstrates one 2050 strategic goal – assure vertical accumulation to achieve sustainability; three coastwide common strategies: (restore/maintain barrier islands; maintain shoreline integrity; and utilize offshore sand and sediment resources); and one regional ecosystem strategy (construct interior islands and/or reefs to protect bay/lake shoreline and/or to restore hydrology, restore and maintain the barrier islands and Gulf shorelines such as Isle Dernieres, Timbalier barrier island chains, Marsh Island, Point au Fer and Cheniere au Tigre (including back barrier beaches).

**Project Location:** Coast 2050 Region 3, Terrebonne Basin, Terrebonne Parish. It is in the Terrebonne mapping unit. This barrier island is part of the Isles Dernieres and the project area is located approximately 38 miles south of Houma, LA.

**Problem:** Barrier islands are the first line of defense against storm surge and protect the interior wetlands and infrastructure from open ocean wave effects. From 1887 to 2002 the documented shoreline change for Trinity Island was -38.4 feet per year (Connor et al. 2004). Barrier island restoration projects using hydraulic fill were more effective in increasing the survivability of these islands than the use of hard structures (Penland et al. 2003). The New Cut restoration (TE-37) CWPPRA project, currently under construction, does not provide for extensive beach and back barrier marsh restoration on Trinity Island. This area sustains considerable wave action and material movement not only on the Gulf shore, but also on the backside of the island. Continued dredging in the California Canal along with Gulfside shoreline erosion has reduced the width of the island to the extent it has become a potential site for breaching if no mitigation is carried out now. Mitigation/renourishment of the Gulfside and maintenance of the marsh at this stage will be much more cost effective instead of waiting until the island further degrades by breaching and becomes more narrow in width.

**Proposed Project Features:** Proposed project features consist of two components:

- unconfined placement of dredged material extending the width of the back barrier marsh of Trinity Island; and,
- unconfined placement of beach fill on the Gulf face of Trinity Island.

The dredged material will be used to increase the width of the island in order to provide a suitable platform to work with the natural migration of the islands and create additional back barrier marsh. Substantial economic savings in engineering and design can result from utilizing the data gathered for the New Cut restoration project. For example, the Wine Island Pass offshore borrow area, the source recently identified for the New Cut Restoration (TE-37) has been characterized and sufficient and suitable material is available for this proposed project after completing the New Cut work. Approximately 5.4 MCY of material is available with only 2.5 expected to be used in constructing TE-37. The wave modeling performed in association with

the New Cut project is still applicable. Availability of the geotechnical investigation and modeling results is expected to save approximately \$500,000 in the engineering and design (Phase I) costs and more importantly, expedite project design efforts.

**Goals:** The project goals are:

- 1) Add sand into this sand-starved environment;
- 2) extend the lives of the barrier islands by increasing their width;
- 3) create approximately 200 acres of intertidal marsh using new dredged material;
- 4) provide a back barrier platform to enable successful island migration; and
- 5) protect the Terrebonne estuary and vegetated wetlands against the direct exposure to the Gulf of Mexico.

The overall project objective is to fortify and extend the life of this barrier island. Implementing this project at this time capitalizes on the success of previous CWPPRA barrier island restoration projects.

**Preliminary Project Benefits:**

- 1) The total acreage benefited directly is 200 acres.
- 2) 200 acres of wetlands will be protected/created over the project life.
- 3) The anticipated loss rate reduction throughout the area of direct benefits over the project life is proposed to be <25%.
- 4) This project maintains a critical barrier island habitat and structural component of the coastal ecosystem.
- 5) The project is expected to have a net positive impact on critical and non-critical infrastructure.
- 6) The project will provide synergistic effects with other CWPPRA completed restoration projects, namely:
  - TE-20 Isles Dernieres restoration, East Island completed in 1999;
  - TE-24 Isles Dernieres restoration Trinity Island completed in 1999; and,
  - TE-37 New Cut restoration, currently under construction.

**Identification of Potential Issues:** The proposed project has the following potential issues: land rights and oyster leases.

**Preliminary Construction Costs:**

Item:	Work or Material	Quantity	Unit	Unit Cost	Amount
1.	Mobilization/Demobilization	1	LS	\$1,000,000	\$ 1,000,000
2.	Dredging/Marsh Creation (in place)	1,930,000	CY	\$8.33/cy	\$16,076,900
	5.4 mcy available at borrow location, 2.5 mcy used for TE-37				
	2.9 mcy available for project based upon 1.5 to 1.0 cut to fill ratio = 1.93 in place				
	cost based upon pre-hurricane award of \$5.55 (BA-37) per cubic yard				
	assuming cost of fuel is 50% of dredging cost per cubic yard (\$2.775)				
	cost of diesel fuel has doubled since award (\$2.775 X 2 = \$5.55)				
	estimated cost of dredging = \$5.55 + \$2.78 = \$8.33				
3.	Vegetative plantings				\$ 200,000

4. Sand fencing – 2 phases single row 20,000 linear feet@ \$7.00	\$ 140,000
Estimated Construction Cost	\$17,416,900
Estimated Construction Cost + 25% contingency	\$21,771,125

**Preparers of Fact Sheet:**

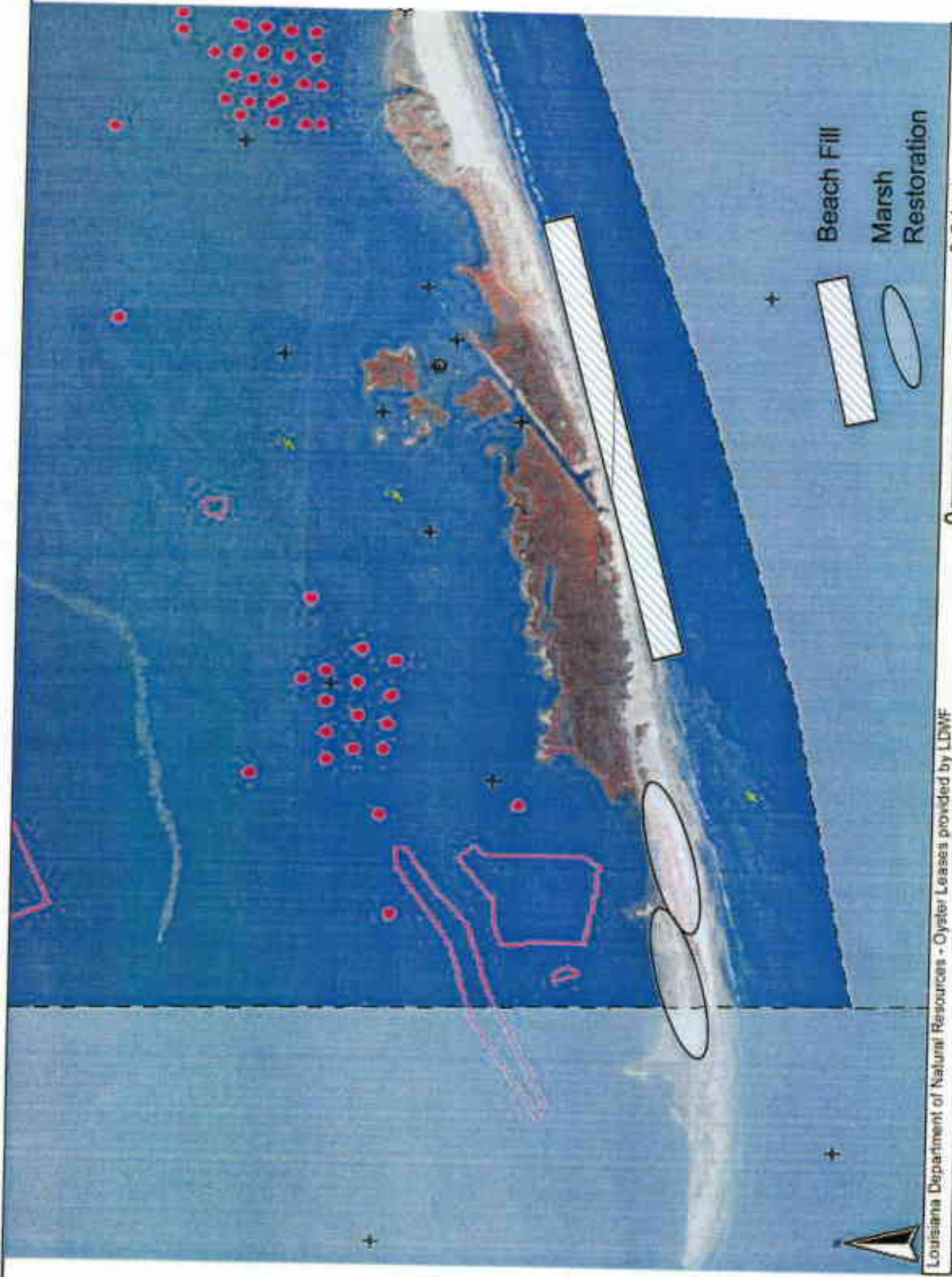
Patricia A. Taylor, P.E., EPA Region 6, (214) 665-6403

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**References:**

(Connor et al. 2004) Connor, Jr., P.F.; S. Penland; A.D. Beall; M. A. Kulp; S. Fearnley, S. J. Williams; and A. H. Sallenger, Jr. 2004. Long-term Shoreline Change History of Louisiana's Gulf Shoreline: 1880's to 2002. Pontchartrain Institute for Environmental Sciences. PIES\_CRL Technical Report Series 04001.

(Penland et al. 2003) Penland, S.; Conner, P.; Cretini, F.; and Westphal, K. (Penland et al.) (2003) CWPPRA Adaptive Management: Assessment of Five Barrier Island Restoration Projects in Louisiana. Pontchartrain Institute of Environmental Sciences, University of New Orleans, New Orleans, Louisiana.



Louisiana Department of Natural Resources - Oyster Leases provided by LDWF

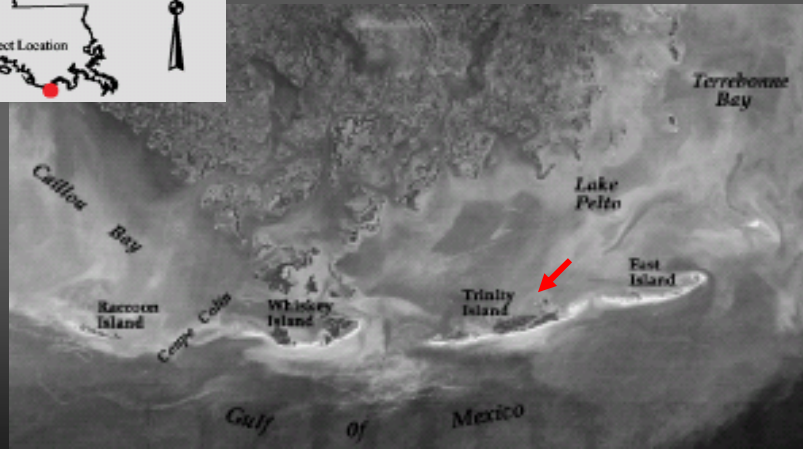


Beach Fill  
Marsh Restoration

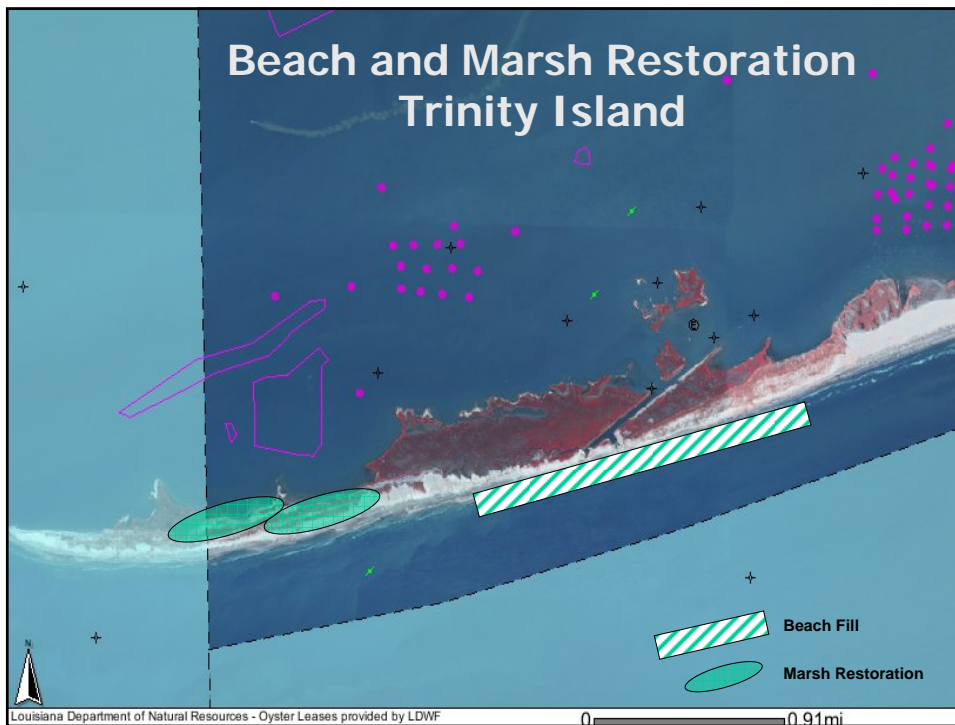
**PPL 17 Proposed  
Beach and Marsh  
Restoration Trinity Island**

Data Source:  
LA Department of Natural Resources  
Map Date: December 2006

# Beach and Marsh Restoration Trinity Island



# Beach and Marsh Restoration Trinity Island



## Beach and Marsh Restoration Trinity Island

### Goals:

- Improve habitat quality and extend longevity of Trinity Island
- Use dredged material to increase intertidal marsh
- Provide back barrier platform for island migration
- Protect Terrebonne estuary and vegetated wetlands from direct exposure to Gulf

### Cost/Benefits:

- ~200 acres of wetland created/protected over project life
- Est. Cost: ~ \$17.4 million
- Est. Cost + contingency: ~ \$21.8 million

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## Beach and Marsh Restoration Trinity Island

Questions?

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**R3 –TE 10 Lake Boudreaux/ Lake Quitman  
Landbridge Project**

**PPL17 CANDIDATE PROJECT FACT SHEET**  
**January 10, 2007**

**Project Name:**

Lake Boudreaux/Lake Quitman Landbridge

**Coast 2050 Strategy:**

Dedicated Dredging for Wetland Creation;  
Maintenance of Bay and Lake Shoreline Integrity

**Project Location:**

Region 3; Terrebonne Basin; Terrebonne Parish; South shore of Lake Boudreaux south of Houma, Louisiana.

**Problem:**

The south bank of Lake Boudreaux has experienced high marsh erosion rates due to wind driven waves and high water. This loss of emergent marsh that separates Lake Boudreaux from Lake Quitman has resulted in an increase in the amount of high saline waters entering Lake Boudreaux from Robinson Canal. This saline water has caused the marshes in the upper end of Lake Boudreaux to convert from fresh/intermediate marshes to intermediate/brackish marshes.

**Goals:**

- 1) Halt shoreline erosion along the southern shoreline of Lake Boudreaux.
- 2) Create 284 acres of marsh and nourish 103 acres of marsh along the south shoreline of Lake Boudreaux.
- 3) Restore the hydrologic function of the historical landbridge between Lake Boudreaux and Lake Quitman.

**Proposed Solution:**

- 1) Stop shoreline erosion through the constructing 21,000 linear feet of rock dike along the southern shoreline of Lake Boudreaux.
- 2) Reduce water exchange between Lake Boudreaux and Lake Quitman through creation and nourishment of emergent marshes along the southern shoreline of Lake Boudreaux through the deposition of hydraulically dredged material from Lake Boudreaux.
- 3) Reduce the cross-section of the navigation channel connecting Lake Boudreaux and Lake Quitman.

**Project Benefits:**

The project will result in lowering and/or stabilizing salinities within Lake Boudreaux. Low salinity marshes north of Lake Boudreaux should benefit from a reduction in water exchange between Lake Boudreaux and high saline water via Robinson Canal. **Total direct project benefits from shoreline protection include the direct protection of over 409 acres of existing and/or newly created marsh and the creation without direct shoreline protection of 140 acres of marsh.** Also, this project should enhance benefits associated with the West Lake Boudreaux Shoreline Protection and Marsh



Creation project and Lake Boudreaux Freshwater Introduction project.

**Project Cost:**

The construction cost including 25% contingency is approximately \$19,785,008.

**Identification of Potential Issues:**

At this time, the only potential issues that could affect this project would be one oyster lease that is located within the navigation channel.

**Sponsoring Agency and Contact Person:**

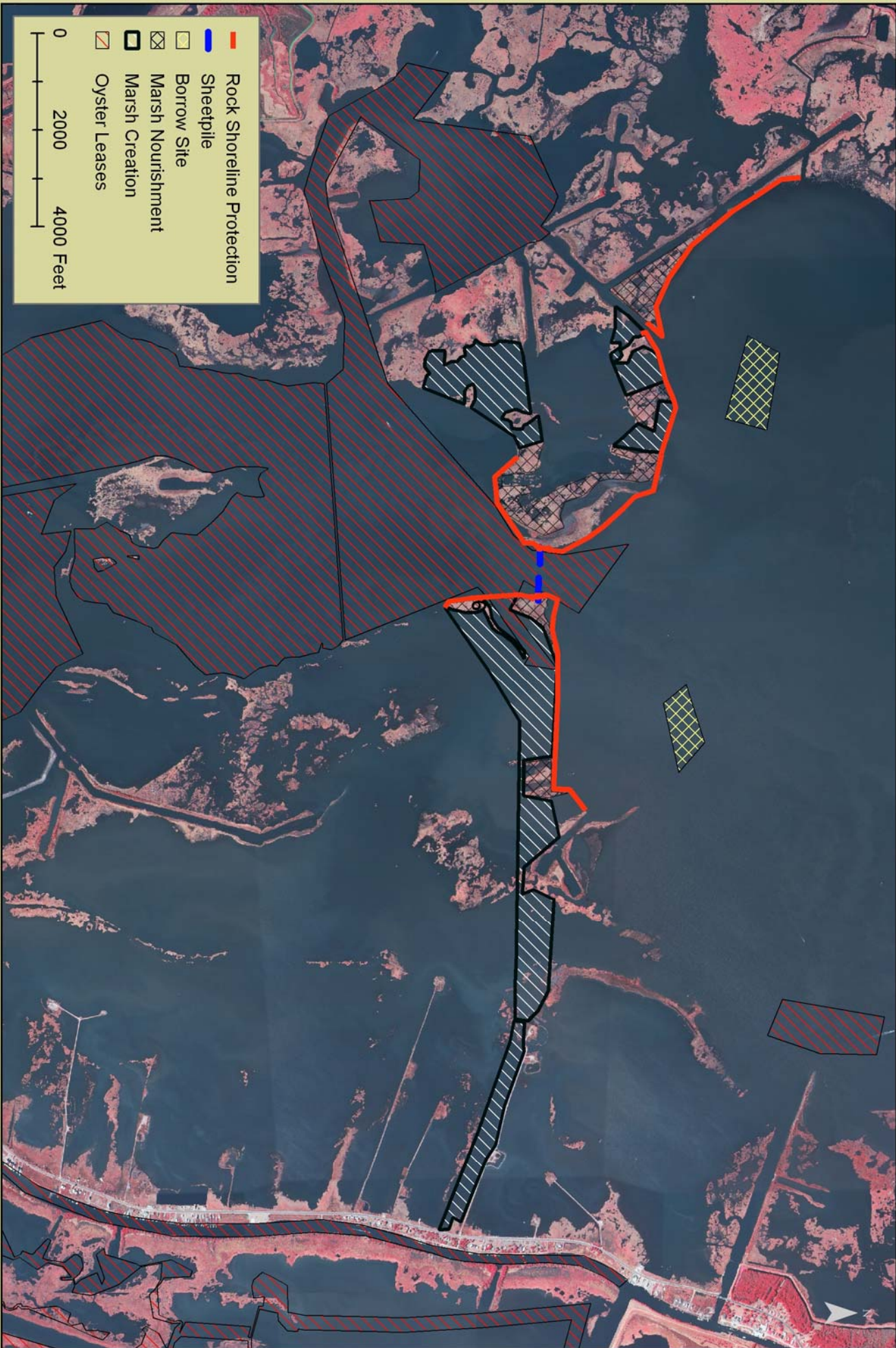
U.S. Fish and Wildlife Service-Robert Dubois (337-291-3127); robert\_dubois@fws.gov



# U.S. Fish & Wildlife Service

Louisiana Ecological Services Field Office

*Lake Boudreaux/Lake Quitman Landbridge*



**R3 –TE 11 Terrebonne Bay Shoreline Protection  
Comprehensive Plan Project**

**PPL17 PROJECT NOMINEE FACT SHEET**  
**January 10, 2007**

**Project Name:**

Terrebonne Bay Shoreline Protection Comprehensive Plan

**Coast 2050 Strategy:**

Coastwide Strategy: Maintenance of Bay and Lake Shoreline Integrity

Region 3 Strategy #11- Maintain shoreline integrity of marshes adjacent to Caillou, Terrebonne, and Timbalier Bays

**Project Location:**

Region 3, Terrebonne Basin, Terrebonne Parish, The southern most contiguous land mass from Bayou Terrebonne east to a point just east of Bayou de Mongue.

**Problem:**

Halt shoreline erosion in the northern most portions of Terrebonne Bay. Shoreline erosion has been calculated to be between 1 and 85 ft/yr. This rapid loss of land has dramatically increased the tidal prism in the area and directly contributed to the ongoing flooding problems of many communities in the area including the town of Montegut.

**Goals :**

- 1) Halt shoreline erosion
- 2) Reduce water exchange between Terrebonne Bay and interior lakes during normal tidal events and small storms.

**Proposed Solutions:**

A floatation canal would be dredged parallel to northern most reaches of Terrebonne Bay and material dredged from that floatation canal would be used to create an earthen dike. Because of the anticipated poor quality of the soils in the Terrebonne Bay area (they may not support large quantities of weight such as rock), that dike would be protected by a series of concrete mats, anchored on both back (marsh side) and front sides (bay side). The dike would be approximately 3.5 foot high with a crown width of 5 feet. The front side portion of the dike would be extended to the minus 2 foot contour so as to reduce the chances of under cutting of the concrete mats and would have a large side slope i.e., 5:1 to 8:1 and a back side slope of 3:1. This could be one part of a comprehensive plan to protect the northern shoreline of Terrebonne Bay from further erosion and could include marsh creation behind the proposed shoreline protection. This would also work synergistically with any future freshwater introductions that have been suggested north of Terrebonne Bay.

**Preliminary Project Benefits:**

- 1) Using 1978 and 2005 DOQQ maps, erosion rates within the project area range from 1 to 85 ft/yr, with an average erosion rate being at least 25 ft/yr. **This project would directly benefit approximately 300 acres of emergent brackish marsh within the 20 year project life through a reduction in shoreline erosion. An additional 300 acres of indirect benefits could be realized through a reduction in wind induced waves.**
- 2) If the proposed project were to be constructed the loss rate would be expected to be reduced over 75% throughout the area of direct benefits over the project life.

3) This project would help maintain the Terrebonne Bay shoreline as well as many other small lakes and marsh ponds. If this becomes part of a comprehensive plan it could help with the flooding problems in the Montegut area associated with prolonged southern winds and small storms.

**Identification of Potential Issues:**

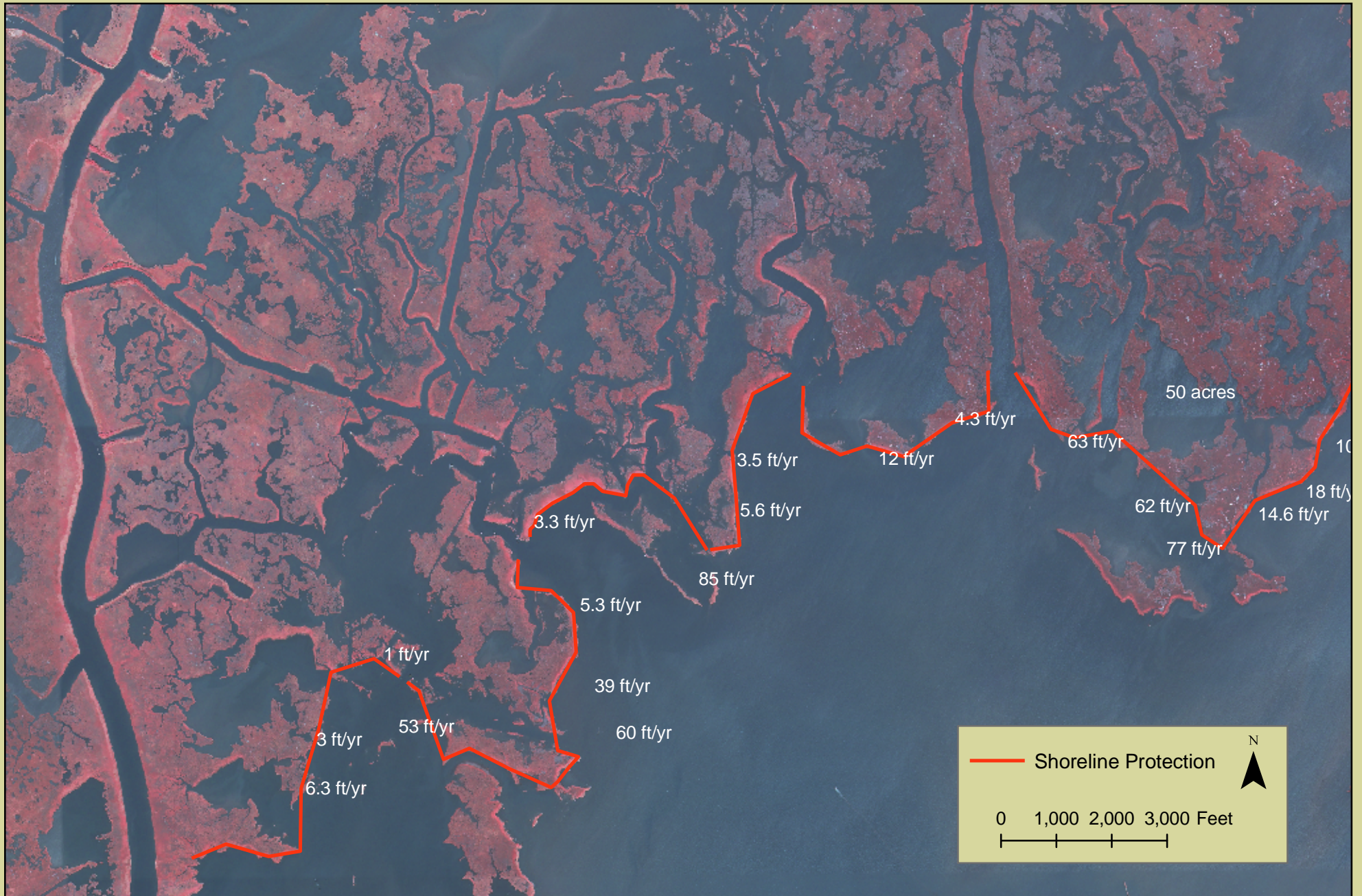
There are several oyster leases and one pipeline that are potential issues with this project.

**Preliminary Construction Costs:**

The construction cost including 25% contingency is approximately \$28,119,543.

**Preparer(s) of Fact Sheet:**

Robert Dubois, USFWS, (337) 291-3127, robert\_dubois@fws.gov



**R3 –TE 12 Southeast Lake Boudreaux Marsh  
Creation and Terracing Project**

**PPL17 PROJECT NOMINEE FACT SHEET- Revised**  
**January 24, 2007**

**Project Name:**

Southeast Lake Boudreaux Marsh Creation and Terracing Project

**Coast 2050 Strategy:**

Coastwide

Terracing and Dedicated Dredging, to Create, Restore, or Protect Wetlands

Regional

Dedicated delivery and/or beneficial use of sediment for marsh building by any feasible means

Boudreaux Mapping Unit

Establish and Protect Ridge Function and Beneficial Use of Dredged Material

**Project Location:**

Region 3, Terrebonne Basin, Boudreaux Mapping Unit, southeast Lake Boudreau

**Problem:**

The interior marshes of Terrebonne Parish have experienced tremendous loss due to a variety of forces including subsidence, salt water intrusion, a lack of sediment supply, and oil and gas activities. The loss of these marshes has exposed significant infrastructure to open water conditions, and has made the area less suitable for fisheries and wildlife. The proposed project would re-establish lost marsh via placement of dredged sediment and terracing. The project would provide direct protection to the Petite Caillou Ridge and significant infrastructure including LA Hwy 56, which is currently subjected to wave energy entering from Lake Boudreaux. The 1983 to 1990 loss rate of the Boudreaux mapping unit is 1.8%/yr, with a subsidence rate of 1.1 to 2.0 ft/century. Loss rates based on newer analyses of infrared photography and satellite imagery indicate rapid land loss resulting predominantly from subsidence.

**Goals:**

Project goals include 1) creating emergent marsh and associated edge habitat, 2) reduce the wave erosion impacting the Petite Caillou ridge, and 3) constructing terraces and secondarily promote conditions more conducive to the colonization of submerged aquatic vegetation (SAV) than presently exist.

**Proposed Solutions:**

The project consists of both marsh creation and terracing by dedicated dredging to create habitat and provide buffer protection to the Petite Caillou Ridge and LA Hwy 56. Approximately 250 acres of intertidal brackish marsh will be created using material from Lake Boudreaux. In addition, approximately 30,000 linear feet of earthen terraces (3 ft height, 10 ft crown with 1:5 slopes) will be constructed with a marsh buggy within the shallower water bodies flanking the existing marshes. Upon completion, the constructed areas will be vegetated with indigenous marsh species to predominantly include *Spartina alterniflora*.

**Preliminary Project Benefits:**

1) *What is the total acreage benefited both directly and indirectly?*

500 acres will be benefited from this project, equally divided between the marsh creation and terrace field.



2) *How many acres of wetlands will be protected/created over the project life?*

230 acres. 205 acres of marsh platform (250 ac - 0.9%/yr x 20 years) and 25 acres of emergent terraces (31 acres emergent terrace – 0.9%/yr x 20 years) are anticipated to remain after twenty years.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (<25%, 25-49%, 50-74% and >75%).*

In concurrence with the Environmental Working Group, anticipated reduction of the background loss rate is 50-74% for marsh creation and terracing.

4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc.*

Yes. The project would help re-establish part of the natural lake rim of Lake Boudreaux, as well as help maintain the structural framework function of the Bayou Petite Caillou Ridge.

5) *What is the net impact of the project on critical and non-critical infrastructure?*

The project would provide substantial protection to critical infrastructure along the Bayou Petite Caillou ridge that contains LA Hwy 56. In addition, substantial benefits to non-critical infrastructure including camps, residences, and oil and gas infrastructure are anticipated.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*

This project would provide a synergistic effect with the Madison Bay project that was approved for Phase 1 under PPL-16. The projects in combination would help secure the Bayou Terrebonne and Bayou Petite Caillou ridges, LA Hwy 56, and other commercial and private infrastructure. In addition, the projects together would stabilize and help prevent the possible coalescence of Lake Boudreaux with Terrebonne Bay.

#### **Identification of Potential Issues:**

In speaking with the Parish, the landowners are in support of this project. There are no oyster leases in either the potential borrow area or disposal area. There are a couple wells and a few pipelines that will require landrights coordination.

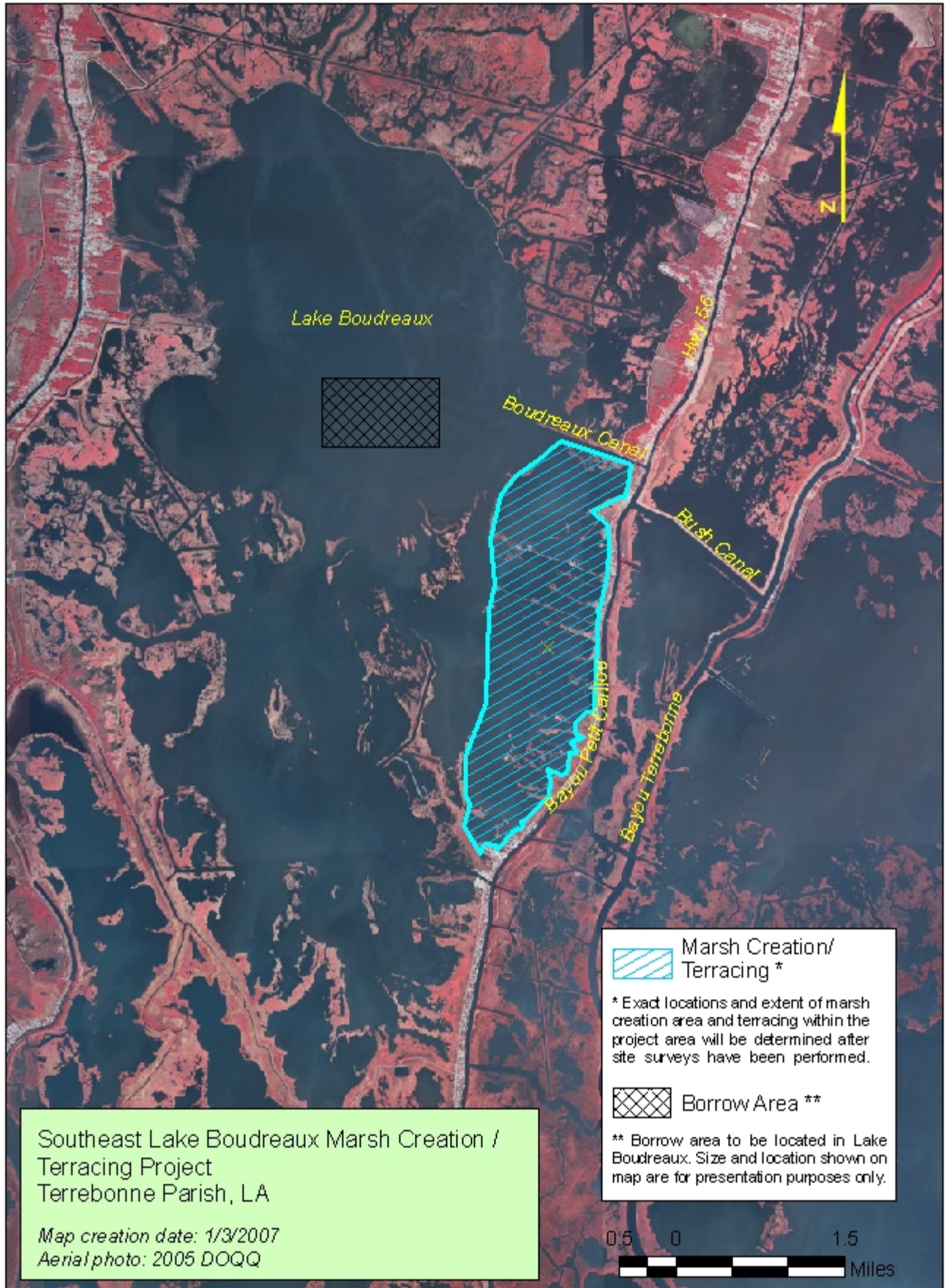
#### **Preliminary Construction Costs:**

Total construction costs including marsh creation, earthen terracing, vegetative plantings, mobilization, and 25% contingency is estimated at \$11.8M.

#### **Preparer(s) of Fact Sheet:**

Cheryl Brodnax, NMFS, (225) 578-7923, [cheryl.brodnax@noaa.gov](mailto:cheryl.brodnax@noaa.gov)

Daniel Dearmond, LDNR, (985) 449-5103, [danield@dnr.state.la.us](mailto:danield@dnr.state.la.us)



Southeast Lake Boudreaux Marsh Creation /  
Terracing Project  
Terrebonne Parish, LA

*Map creation date: 1/3/2007*  
*Aerial photo: 2005 DOQQ*

**Marsh Creation/  
Terracing \***

\* Exact locations and extent of marsh creation area and terracing within the project area will be determined after site surveys have been performed.

**Borrow Area \*\***

\*\* Borrow area to be located in Lake Boudreaux. Size and location shown on map are for presentation purposes only.

Region 3 – Teche/Vermilion Basin

Proposed Projects

# **R3- TV 1 Vermilion Bay Vegetative Planting and Maintenance Project**

**REGION 3 – RPT**  
**PPL-17 PROJECT NOMINEE FACT SHEET**  
**Revised - 1/19/2007**

**Project Name**

Vermilion Bay Vegetative Planting and Maintenance (Formerly North Vermilion Bay Planting & Maint.)

**Coast 2050 Strategy**

Region 3. #12. Maintain shoreline integrity and stabilize critical areas

**Project Location**

Region 3, Teche/Vermilion, Iberia and Vermilion Parishes, Vermilion Bay shoreline extending from Southwest Point (Vermilion Parish) 69 miles east to Shark Bayou (Iberia Parish).

**Problem**

The TV-13a Oak/Avery Hydrologic Restoration project included 5.1 miles of vegetative plants along the north Vermilion Bay shoreline between Oaks and Avery Canals. In addition, Avery Island Inc. in conjunction with the Natural Resource Conservation Service (NRCS) has been planting the north shore of Vermilion Bay with smooth cordgrass (*Spartina alterniflora*) since 1990. The plantings have been highly successful in reducing the rate of shoreline erosion by capturing and accreting sediments from the Atchafalaya River and proving quite resilient in the wake to two major hurricanes – Lili and Rita. However, some site specific areas of the vegetative planting areas become denuded annually due to hurricane and other wave generated conditions.

**Proposed Project Features**

The project calls for annual vegetative planting of impacted areas along the shoreline of Vermilion Bay through a maintenance planting program. A reconnaissance of the entire Vermilion Bay shoreline would be conducted to determine the most suitable locations for the vegetative planting of smooth cordgrass. Ten rows of smooth cordgrass plugs would be installed on two foot centers. During FY08, vegetative planting would be installed along an estimated (20 miles of shoreline). During the next four years, maintenance plantings would be conducted at each site to ensure project success.

**Goals**

This project would stabilize 20 miles of the Vermilion Bay shoreline through a series of intensive low-cost vegetative plants.

**Preliminary Project Benefits**

Vegetative planting and maintenance along the Vermilion Bay shoreline have been extremely successful at halting shoreline erosion and retreat between Avery Canal and Weeks Island. In many areas, established plantings have captured the westerly sediments moving down the GIWW from the Atchafalaya River and Wax Lake Outlet causing accretion and advancement of the plantings seaward into the Bay. This project would create emergent marsh and protect the existing shoreline.

**Identification of Potential Issues**

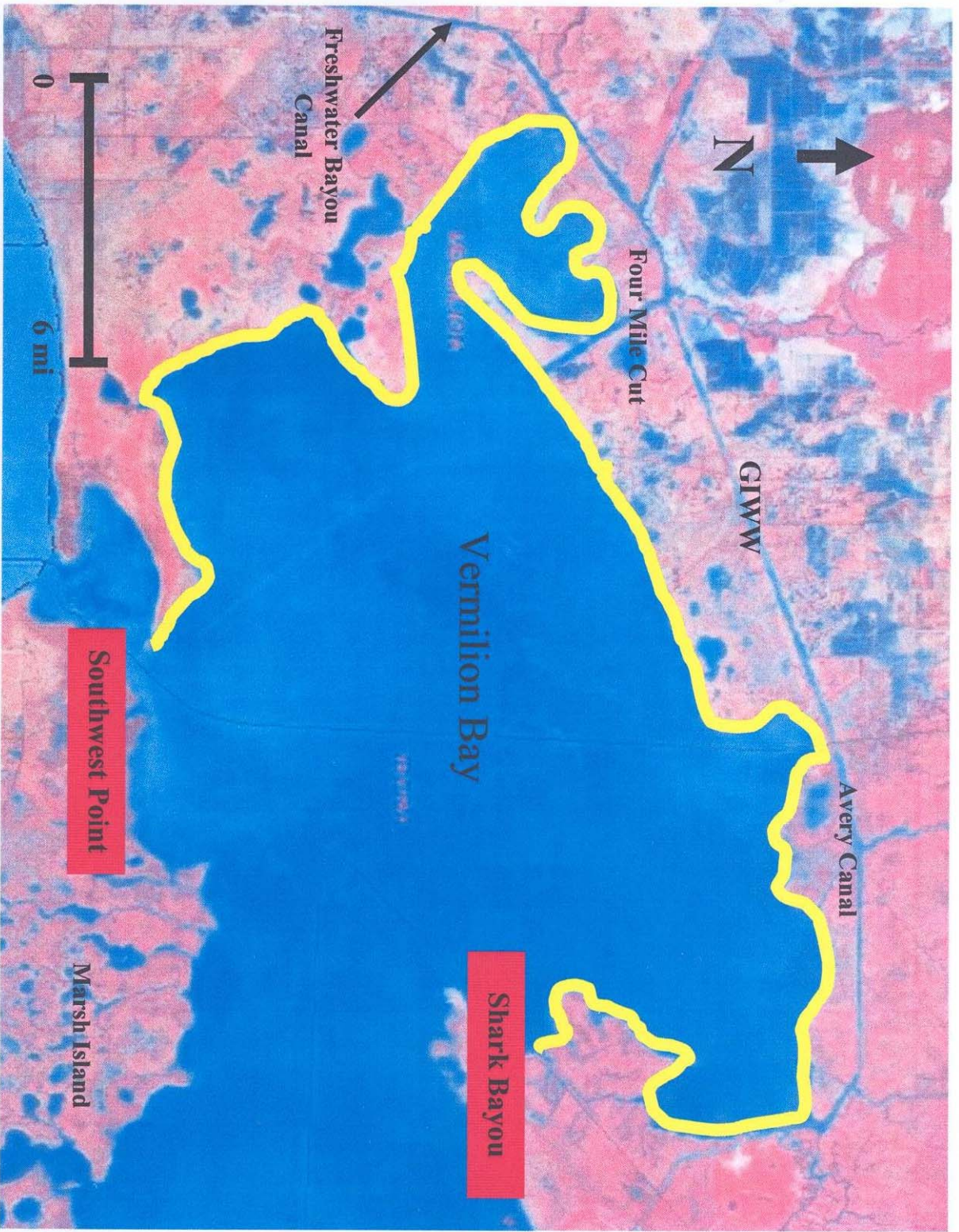
None identified

**Preliminary Construction Costs**

\$1 million

**Preparer of Fact Sheet**

Randy Moertle, Avery Island Inc., (985) 532-6388, [rmoertle@bellsouth.net](mailto:rmoertle@bellsouth.net)



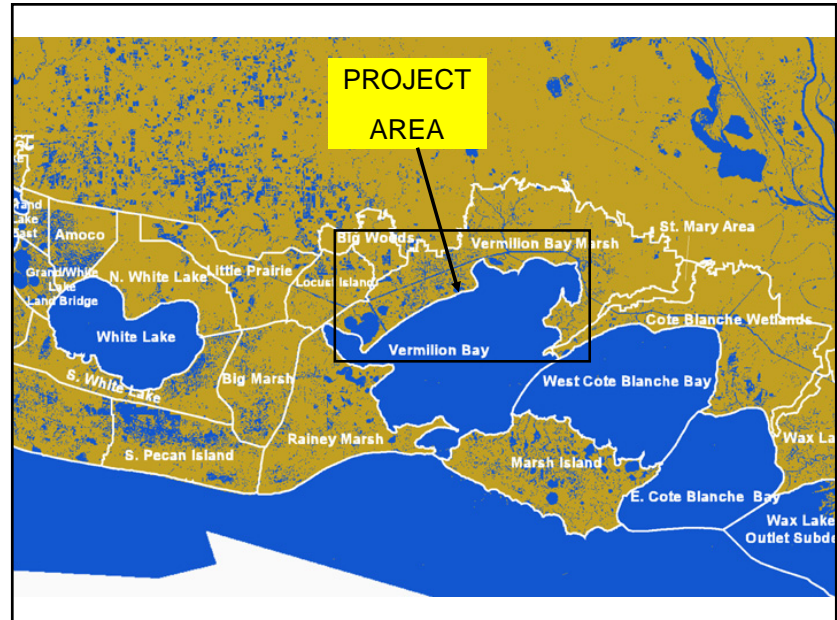
**Project Name:** Vermilion Bay Vegetative Planting and Maintenance  
(± 20 miles of planting with 4 yrs of maintenance planting)

Data Source:  
Louisiana Department of Natural Resources  
From 2005 Cir DOQQ imagery

# NORTH VERMILION BAY SHORELINE VEGETATIVE PLANTING & MAINTENANCE



REGION 3  
PROJECT PRIORITY LIST 17  
NOMINATION

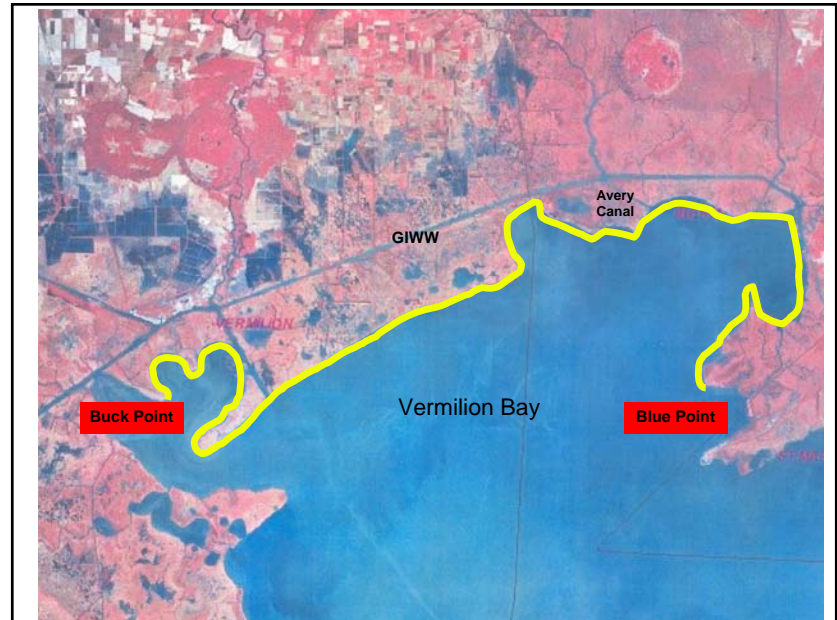


## COAST 2050 STRATEGIES

- Maintain shoreline integrity and stabilize critical areas of Teche/Vermilion Bay Systems

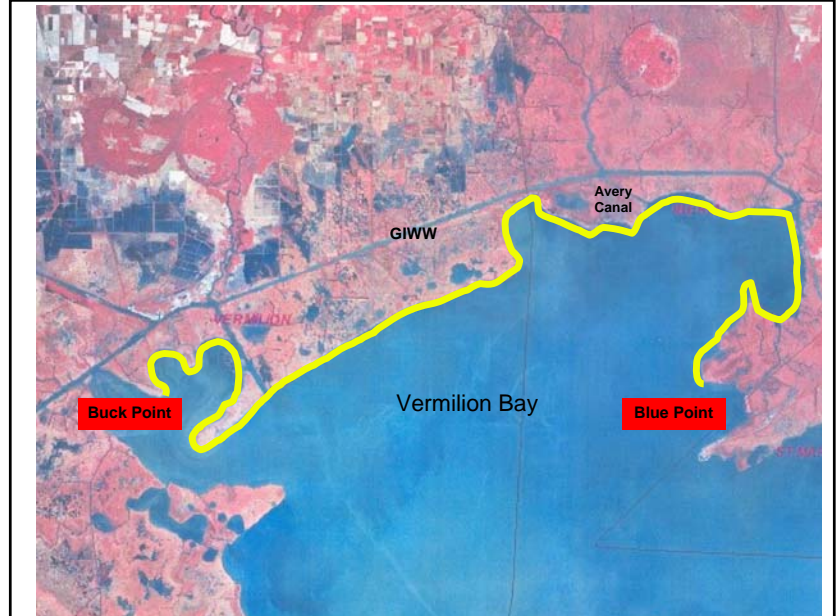














## PROJECT OBJECTIVES

- Arrest bay shoreline erosion through maintenance of vegetative plantings for a minimum of 5 years to ensure establishment of plantings
- Demonstrate that maintenance of vegetative plantings can provide low cost shoreline protection
- Demonstrate that maintenance of vegetative plantings can accrete land seaward

**R3- TV 2 Vermilion Bay Shoreline Protection  
and Marsh Creation Project**

R53 TV-2 PPT  
NRCS

**PPL17 PROJECT NOMINEE FACT SHEET**  
**1/10/2007**

**Project Name**

Vermilion Bay Shoreline Protection and Marsh Creation Project

**Coast 2050 Strategy**

Region 3. #12. Maintain shoreline integrity and stabilize critical areas of Vermilion, East, and West Cote Blanche, Atchafalaya, Calliou, Terrebonne, and Timbalier Bay systems including the Gulf shoreline.

**Project Location**

Region 3, Teche/Vermilion, Iberia Parish, North shore of Vermilion Bay extending 1.5 miles west of Avery Canal

**Problem**

The TV-13a Oak/Avery Hydrologic Restoration project included 5.1 miles of vegetative plants along the north Vermilion Bay shoreline between Oaks and Avery Canals. The plantings have been highly successful in reducing the rate of shoreline erosion by capturing and accreting sediments from the Atchafalaya River, proving quite resilient in the wake of two major hurricanes – Lili and Rita. However, a 1-mile stretch just west of Avery Canal has remained a problem because a preexisting shoreline breach that has eroded beyond the natural lake rim, into organic interior marshes, and has proven too unstable for plantings alone. To complicate matters, the breach has broken through into a location keyway canal and threatens to undermine the remaining lake rim and a vast marsh complex. As a result, the lake rim will require reconstruction using some form of shoreline protection.

**Proposed Project Features**

The project calls for reestablishing lake rim function by constructing approximately 9,300 linear feet of wave dampening structure consisting of rock, sheet piles, or other method determined most feasible through further investigation. The structure will reconnect the solid lake rim on either side of the breach and new marsh will be created behind the shoreline protection.

**Goals**

The project will repair 1.5 miles of lake rim and complete the restoration of over 10 miles of north Vermilion Bay shoreline by repairing a breach into the interior marsh that threatens to undermine a much broader area.

**Preliminary Project Benefits**

Stop erosion in an area that has lost over 100 ft per year of shoreline in some areas and averages approximately 56 ft per year loss. Create approximately 108 acres of new marsh.

**Identification of Potential Issues**

None identified

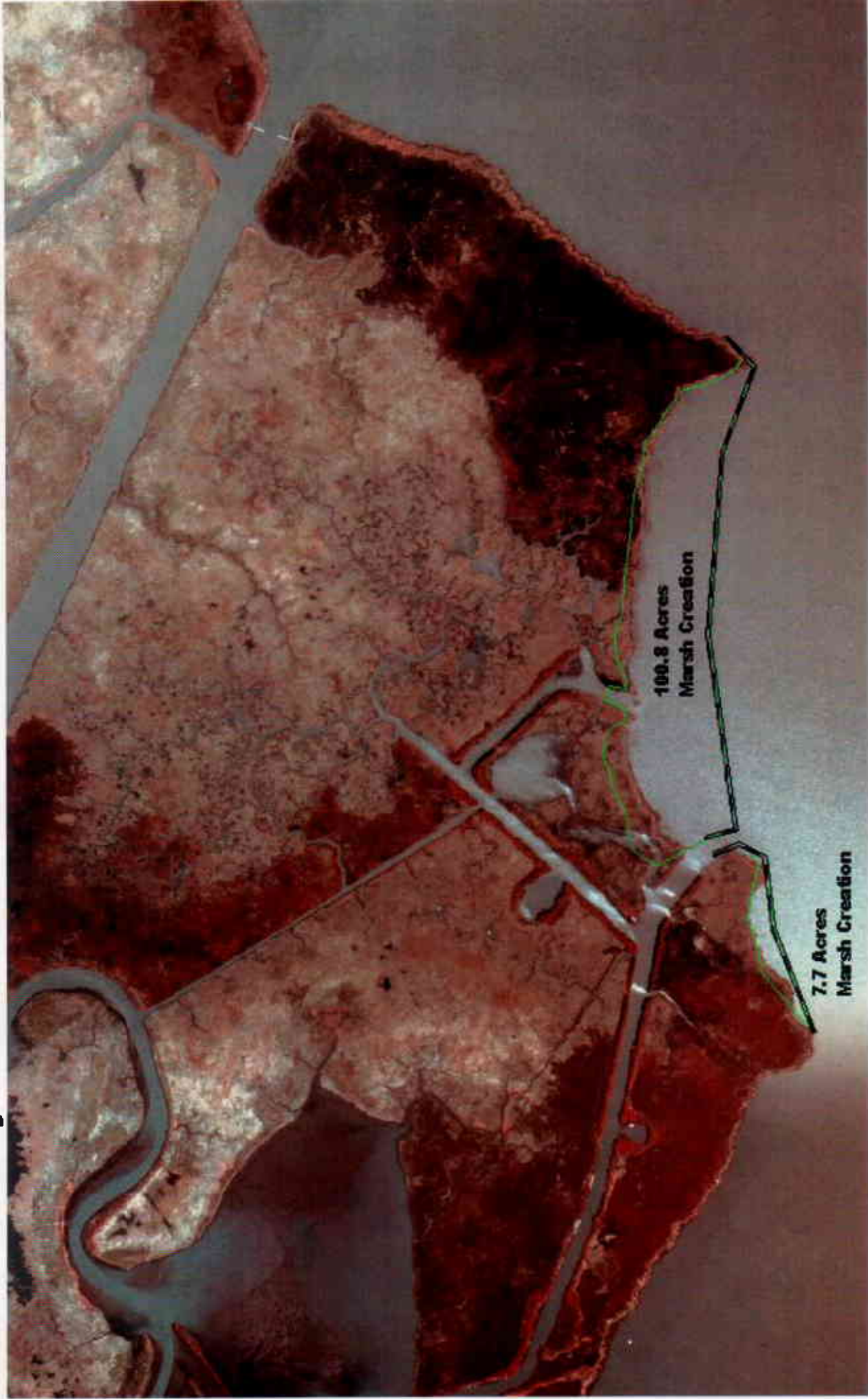
**Preliminary Construction Costs**

\$5 million

**Preparer(s) of Fact Sheet**

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# Vermillion Bay Shoreline Protection and Marsh Creation Project



Vermillion Bay PPL 17

 Planned Structure Location

 Vermillion Bay Marsh Creation





Vermilion Bay Shoreline  
PPL 17  
Iberia Parish  
Region 3  
Teche/Vermilion Basin

1-30-40 Aerial Photo



3-2-98 Tigre Lagoon DOQQ

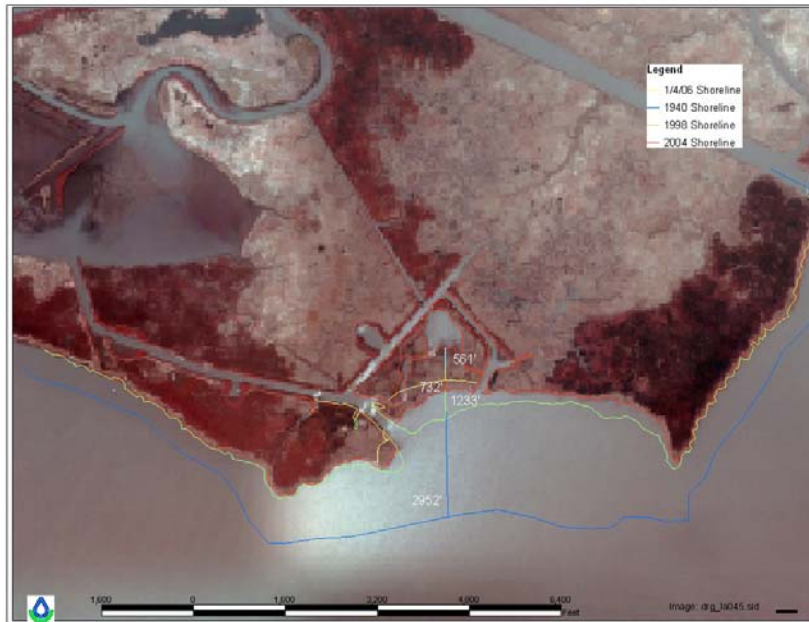


2004 DOQQ Mosaic



# Shoreline Erosion

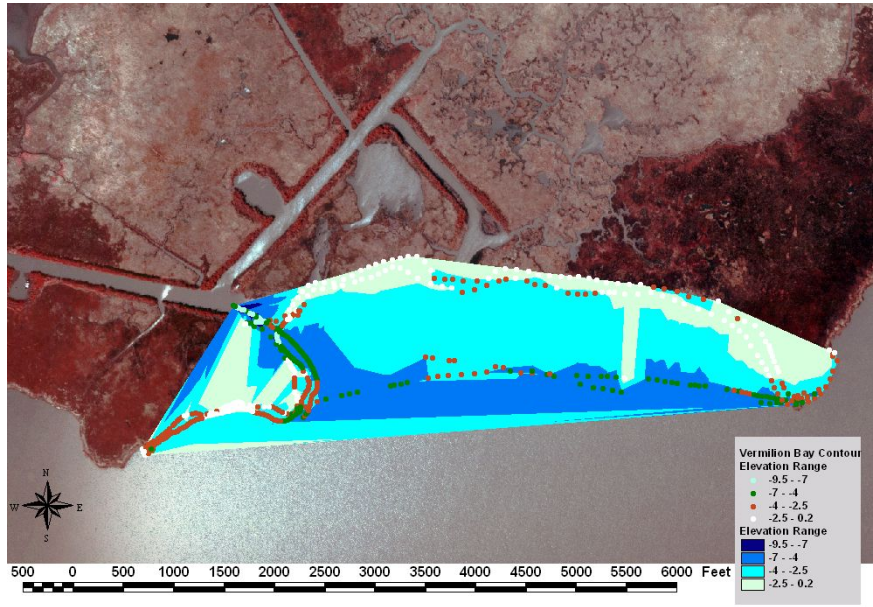
Distance from shoreline to point 1940, 1998, 2004 & on 1/4/06



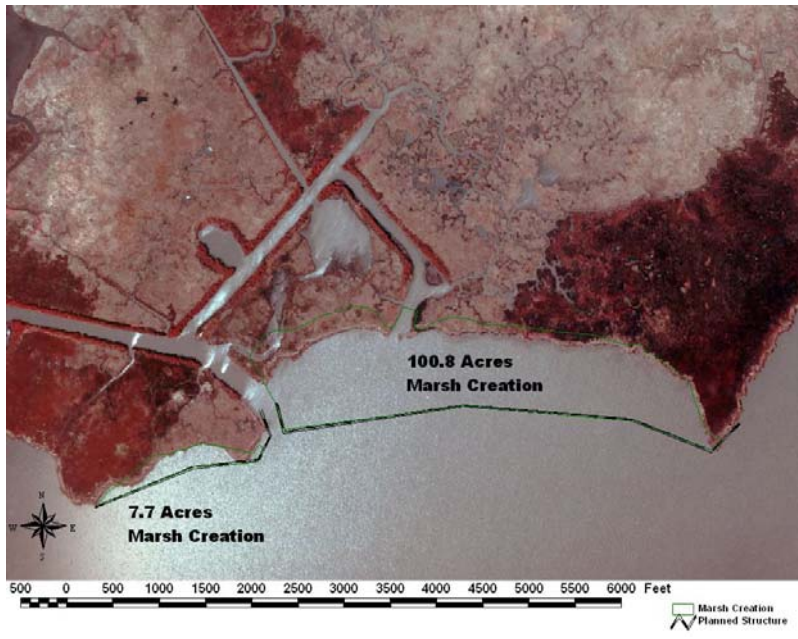
# Shoreline Erosion

DESCRIPTION	FEET	LABEL	DATE OF FLIGHT	TIME YEARS	SHORELINE EROSION ft/yr
Distance to shoreline in 1940 = 2952'	2952	1940 Shoreline	01/01/40		
Distance to shoreline in 1998 = 1233'	1233	1998 Shoreline	03/01/98	57.37	29.96
Distance to shoreline in 2004 = 732'	732	2004 Shoreline	02/15/04	5.87	85.29
Distance to shoreline on 1-4-06 = 561'	561	1/4/06 Shoreline	01/04/06	1.86	91.92

# Vermilion Bay Shoreline



# Vermilion Bay Shoreline



**R3- TV 3 Four Mile Canal Freshwater  
Redistribution Project**

**PPL17 PROJECT NOMINEE FACT SHEET**  
**January 24, 2007**

**Project Name**

4-Mile Canal Freshwater Redistribution

**Coast 2050 Strategy**

Regional: #2 Increase deltaic land building where feasible  
#6- Stabilize banks and/or cross-sections of any navigation canal for water conveyance and/or for restoring hydrology of adjacent marshes  
#7- Maintain or direct Atchafalaya River water or other freshwater sources and sediment through the Gulf Intracoastal Waterway or other water sources  
#8- Dedicated delivery and /or beneficial use of sediment for marsh building by any feasible means  
#10 - Restore historic hydrologic conditions of major tidal exchange points or prevent adverse tidal exchange points between Gulf/lake, lake/marsh, bay/marsh, Gulf/bay, and marsh/navigation channel locations  
#13- Construct interior islands and/or reefs to protect bay/lake shorelines and/or restore hydrology  
#15 – Optimize Gulf Intracoastal Waterway flows into marshes and minimize direct flow into bays  
#17 Reduce sedimentation in bays

Coastwide: Stabilization of the width and depth of major navigation channels.

Mapping Unit: Vermilion Bay Marsh (81) Stabilize Banks of Navigation channels and canals  
(82)- Protect Bay/ Lake Shorelines  
(83) – Stabilize banks of navigation channels and canals.

**Project Location**

The project is located in Region 3, Teche/Vermilion Basin, Vermilion Parish, along the navigation channel referred to as the 4-mile Cut due south of Intracoastal City.

**Problem**

A majority of the freshwater and sediments available from the Vermilion River are diverted southward into Vermilion Bay via the 4-Mile Channel and bypass adjoining wetlands and open water areas. The 4-Mile Channel has enlarged from a 300 ft. constructed width to currently a 950 ft. wide channel due to wake action from commercial and recreational marine traffic.

Wave energy has eroded the west bank of the Four Mile Canal navigation channel. The southern portion of Vermilion River, between the Four Mile Canal Terracing Project terrace fields, has silted in.

**Proposed Solution**

Construction of a low sill weir across the 4-Mile Channel approximately 1 mile north of its confluence with Vermilion Bay. Adjoining rock abutments would be installed immediately upstream and downstream of the proposed structure to prevent further erosion of the channel bank lines. The weir would still allow unrestricted access to commercial marine traffic. Dredge the lower section of the Vermilion River that has silted in. Dredge spoil would be placed in marsh lobes along Four Mile canal to recreate the canal bank. Openings would be left to

allow for small boat traffic and water flow into the terrace fields of the TV-18 terraces for sediment trapping. Both the dredge spoil and what remains of the west bank would be armored with rock using light weight aggregate to minimize the load. Maintenance would include maintaining the rock armor only. No plantings necessary in this area, as seed bank is established.

### **Goals**

Restore the historic cross-sectional area of the 4-Mile Channel to authorized project dimensions which would further enhance the redirection of freshwater and sediments from the Vermilion River and GIWW systems into adjoining wetlands and open water areas. Use dredge spoil to create channel shoreline that has eroded. Establish and armor Four Mile Canal West Bank.

### **Preliminary Project Benefits**

Restore to some degree the historic distributary patterns of the Vermilion River system thereby stabilizing water salinity levels and increasing sediment input in adjoining wetlands. The project will significantly enhance the availability of sediments for the adjoining TV-12 Little Vermilion Bay Sediment Trapping CWPPRA Project. Approximately 20 acres of marsh would be directly created, an undetermined amount indirectly through increased sedimentation, and additional acres benefited from a loss rate reduction of 25-49%.

The project area of impact is anticipated to be large due to the hydrologic redistribution, but also difficult to determine. For the sake of comparison the following estimate is provided. The TV-18 project area is 2648 acres. Assuming the proposed project would affect 2648 acres of marsh in the area, and the LDNR 1999 estimated loss rate in Vermilion Bay Marsh of 0.45% yearly between 1974 and 1990, a reduction in that loss of 25-49% would equate to 111 acres of marsh preserved.

### **Identification of Potential Issues**

Pipelines are in the area limit the extent of the armoring and dredging.

### **Preliminary Construction Costs**

The approximate construction cost for this project is estimated around \$5 million, including a 25% construction contingency.

### **Preparer of Fact Sheet**

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Bart Devillier/NRCS/(337) 893-5664/ [bart.devillier@la.usda.gov](mailto:bart.devillier@la.usda.gov)

Joy Merino, NOAA, 337-291-2109/ [joy.merino@noaa.gov](mailto:joy.merino@noaa.gov)

# Four Mile Freshwater Redistribution

PPL17 Candidate



- Rock Armor
- Dredge spoil marsh creation
- Dredging area
- Rock Dike with boat bay



**R3- TV 4 Marone Point Shoreline Protection  
Project**

**PPL 17 Project Nominee Fact Sheet**  
**January 10, 2007**

**Project Name**

Marone Point Shoreline Protection

**Coast 2050 Strategy**

Coast wide: Maintenance of Bay and Lake Shoreline Integrity

Regional: 11. Maintain shoreline integrity and stabilize critical shoreline areas of the Teche-Vermilion system including the gulf shoreline

Mapping Unit: (East Cote Blanche Bay) 73. Protect Bay/Lake Shorelines

**Project Location**

The project is located in Region 3, Teche/Vermillion Basin, St. Mary Parish, along the northern shoreline of East Cote Blanche Bay.

**Problem**

This area of shoreline has historic and predicted shoreline erosion rates of 15-20 ft. /year. If left unchecked, the rapidly eroding shoreline along East Cote Blanche Bay will lead to a conversion of interior wetlands to open bay. Installing shoreline protection would preserve the hydrologic integrity of water control structures installed under the TV-04 Cote Blanche Hydrologic Restoration CWPPRA Project that the O&M program will not provide.

**Proposed Project Features**

Project features include construction of approximately 26,000 linear feet of armored protection parallel to the existing northern shoreline of East Cote Blanche Bay. The proposed location of the shoreline protection feature is approximately 23,000 linear feet, starting from 3300 feet West of Humble Canal and extending around Marone Point, and approximately 3000 feet to the East of the Humble Canal between shoreline protections planned and installed through the TV-04 Cote Blanche Hydrologic Restoration Project.

**Goals**

Reduce and/or reverse shoreline erosion rates, protect critical marsh habitat and maintain existing hydrology of the East Cote Blanche Bay wetlands established through the TV-04 Cote Blanch Hydrologic Restoration Project. The marsh habitat provides important habitat for wintering migratory waterfowl, black bears, and other furbearers. These wetlands also provide vital protection to inland areas of St. Mary Parish from storm surges associated with hurricanes.

**Preliminary Project Benefits**

The project is anticipated to directly protect approximately 179 acres of freshwater marsh in St. Mary Parish by reducing or eliminating the current erosion rate of 15-20 ft. /yr. The project features will also provide a synergistic effect with the TV-04 Cote Blanche Hydrologic Restoration Project, and TV-20 Bayou Sale Ridge Protection Project by extending shoreline protection around the entire northern shore of East Cote Blanche Bay, ultimately providing contiguous protection to thousands of acres of deteriorating marsh in St. Mary parish.

**Identification of Potential Issues**

No significant potential issues are expected from the project implementation. Major landowners are in full support of the project.

**Preliminary Construction Cost**

Approximately \$11,700,000.

**Preparer of Fact Sheet**






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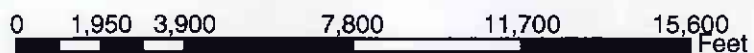
Charles Stemmans/NRCS/ (337) 369-6623 [charles.stemmans@la.usda.gov](mailto:charles.stemmans@la.usda.gov)

# Marone Point Shoreline Protection St. Mary Parish Louisiana



## Legend

-  TV-20 Planned Bayou Sale Shoreline Protection
-  TV-04 Cote Blanche Shoreline Protection- Approx. 4,140 lf.
-  Approved TV-04 O&M -Rock Dike
-  Approved TV-04 O&M - Rock Revetment
-  PPL-16 Proposed Shoreline Protection -Approx. 26,000 lf.



PPL 17 NOMINEE PROJECT SUBMISSION

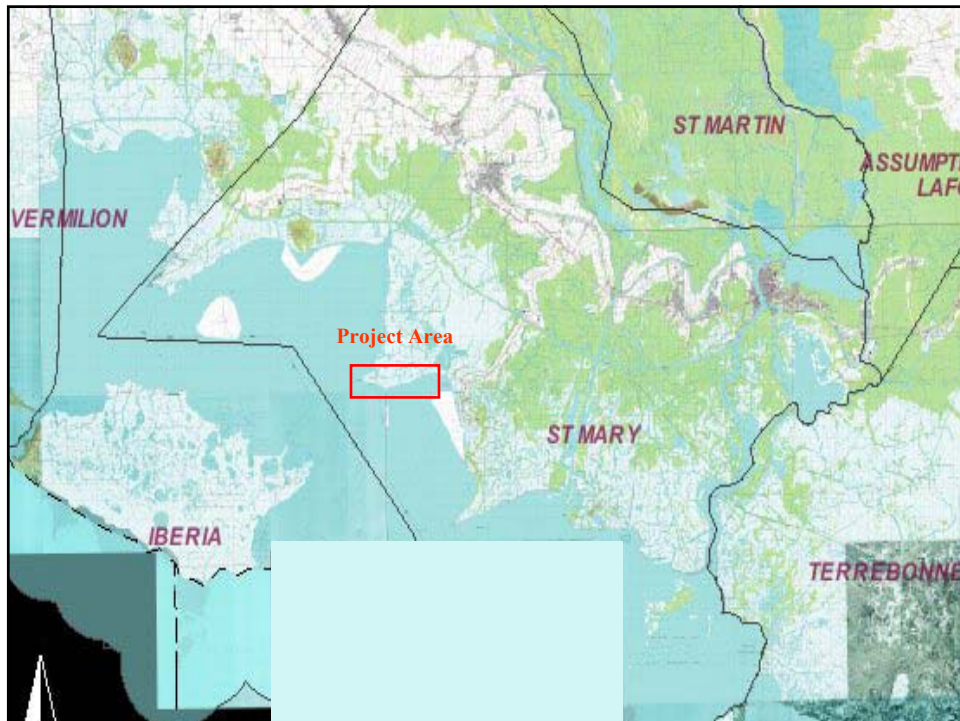
REGION III

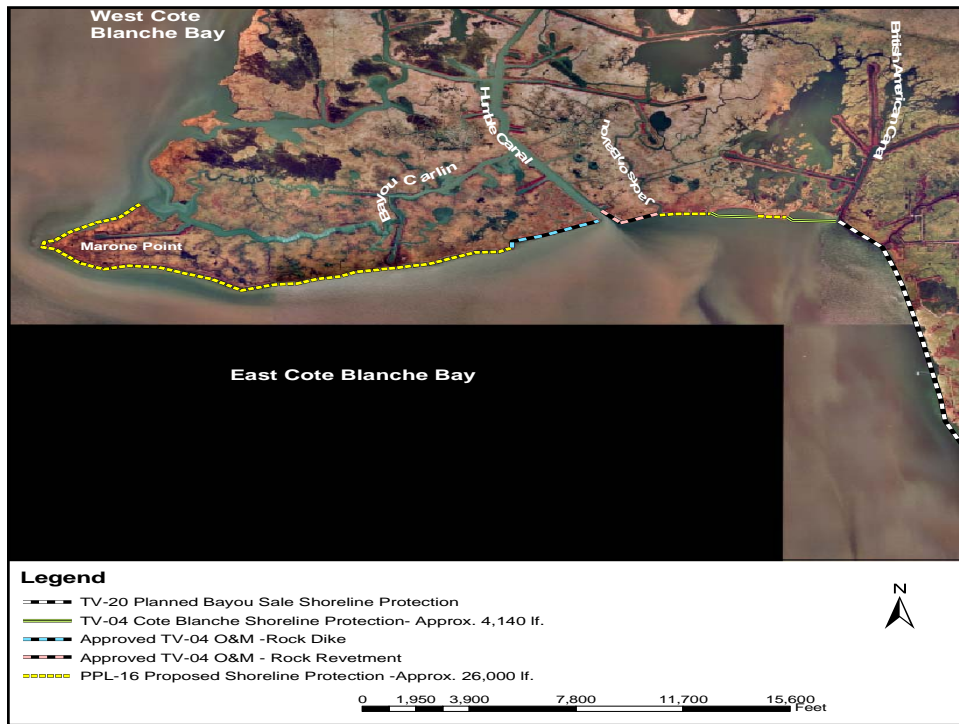
TECHE / VERMILION BASIN

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**MARONE POINT SHORELINE PROTECTION**

**ST MARY PARISH**





## *MARONE POINT SHORELINE PROTECTION*

### *ST MARY PARISH*

#### **Problems:**

- Shoreline erosion rates of 15 – 20 feet per year
- Circumvention & disruption of interior drainage patterns
- Increasing interior marsh loss rates

#### **Project Features:**

- 26,000 LF of armored protection parallel to existing shoreline

#### **Project Benefits:**

- Directly protect ~ 179 ac of fresh/intermediate marsh
- Reduce interior marsh loss rates
- Synergistic effect with 2 CWPPRA Projects (TV-4 & TV-20)

**R3- TV 5 Coastal Wetland Restoration by  
Backfilling Oil & Gas Canals in St. Mary Parish  
Project**

BE3 TV-5

## DRAFT PPL17 PROJECT NOMINEE FACT SHEET

December 14, 2006

### Project Name

Coastal Wetland Restoration by Backfilling Oil & Gas Canals in St. Mary Parish

### Coast 2050 Strategy

Coastwide Strategy: Restore/sustain marshes

### Project Location:

Region 3, ~~Atchafalaya~~ Basin, St Mary Parish, Marone Point area, west of Highway 317  
*Teche-Vermilion*

### Problem

Canal dredging is known to have contributed significantly to land loss in Louisiana, yet little has been done to effectively reverse the damage caused by canals and spoil banks. Directly, canals have turned marsh to open water, and spoil banks have replaced marsh with an upland environment. Indirectly, spoil banks restrict water flow above and below the marsh surface and cause both increased periods of flooding and drying of the marsh behind them. Increased flooding can lead to stress and mortality of marsh vegetation, while drying the soil increases subsidence through the oxidation of organic matter. These hydrologic alterations also limit sediment deposition in the adjacent marshes.

### Proposed Project Features

This project will backfill canals in strategic landscape positions to maximize the restoration of natural hydrologic conditions. Backfilling has been successful in the past at restoring single canals in a variety of locations, but it has never been attempted as a strategy to restore open water areas surrounding the canal. Removing the spoil banks in a strategic manner will allow the natural marsh drainage networks to reemerge, and allow for higher marsh sedimentation through a more natural flooding cycle.

### Goals

- Create 200 acres of emergent marsh over the project life
- Reduce the rate of loss of emergent wetlands surrounding the canals by >75%
- Increase SAV cover in open water
- Increase the area of shallow water habitat in the project area.

### Preliminary Project Benefits:

- Net creation of 200 ac of emergent marsh in 20 years
- Protect another 100 ac of emergent marsh from loss over 20 years
- Increase SAV and shallow water habitat

### Identification of Potential Issues

There may be landrights issues and oil/gas canal/pipeline issues.

### Preliminary Construction Costs

The estimated construction cost including 25% contingency is \$600,000

### Preparer of Fact Sheet

Kenneth Teague, EPA, (214) 665-6687; [Teague.Kenneth@epa.gov](mailto:Teague.Kenneth@epa.gov)



Louisiana Department of Natural Resources

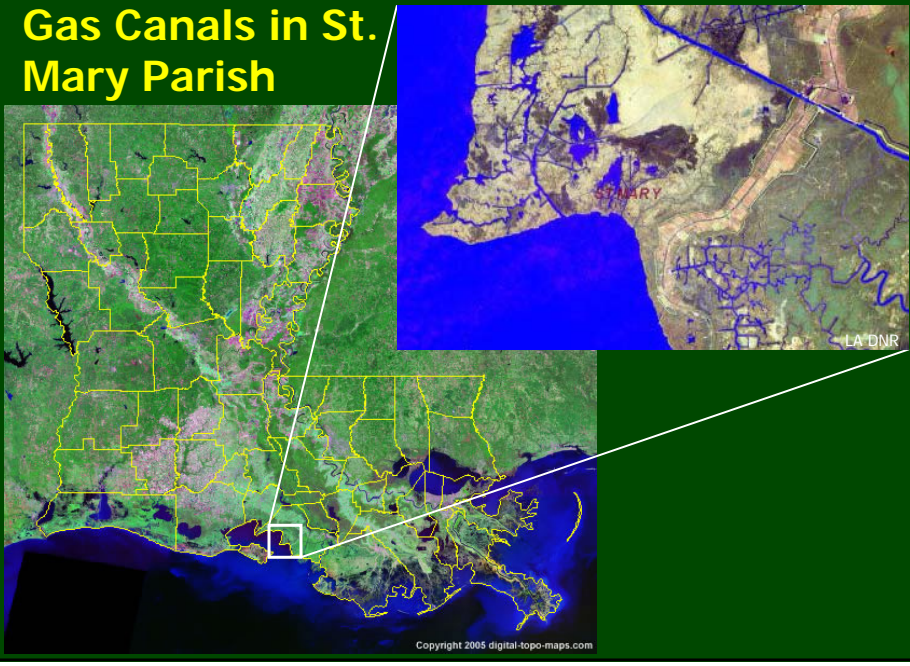
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PPL 17 Proposed  
Backfilling Oil & Gas  
Canals in St. Mary Parish

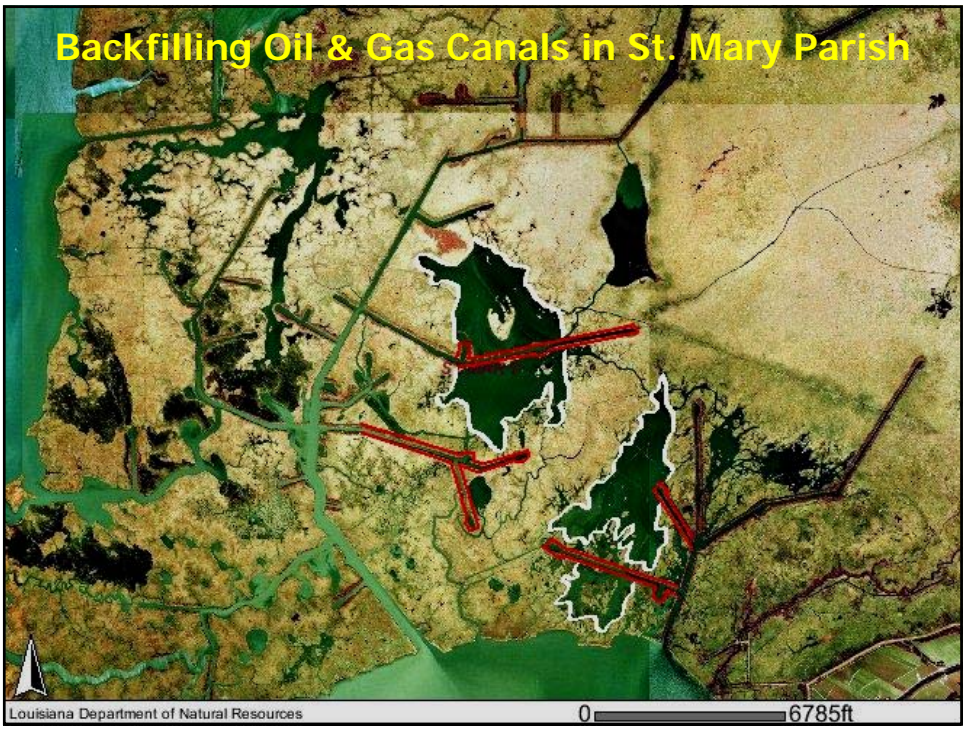
Data Source:  
LA Department of Natural Resources  
Map Date: December 2006



# Backfilling Oil & Gas Canals in St. Mary Parish



# Backfilling Oil & Gas Canals in St. Mary Parish



## Backfilling Oil & Gas Canals in St. Mary Parish

### Goals:

- Create emergent marsh habitat
- Reduce rate of wetland habitat loss surrounding the canals by 75%
- Increase SAV cover in open water
- Increase area of shallow water habitat

### Cost/Benefits:

- ~200 acres of emergent marsh created over 20 years
- Protect ~100 acres of marsh from loss over 20 years
- Est. Cost + contingency: ~ \$600K

## Backfilling Oil & Gas Canals in St. Mary Parish

Questions?

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EPA Region 6  
(214) 665-6687

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