

APPENDIX B

Project List

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1 List of Projects

Projects Defined as Strategies	
In developing the CPR, it is important to consider the effects of levees on the ability of wetland soils to accrete adequately and fish and wildlife habitat value.	Strategy
Create Oyster Reefs	Strategy
Restoration of barrier Isle Derniers using broken concrete fencing	Strategy
Source material from Ship Shoal and place on barrier islands.	Strategy
Source material from Ship Shoal and place on barrier islands.	Strategy
Place dredged material on the barrier islands.	Strategy
Place dredged material on the barrier islands.	Strategy
Stabilize barrier islands using hard structures.	Strategy
Stabilize barrier islands using hard structures.	Strategy
Stabilize barrier islands using debris from Hurricane Katrina.	Strategy
Planting programs on marshes; making use of nurseries to go and do the planting. This can be achieved at Parish level.	Strategy
Choke all channels from Leeville to Cocodrie	Strategy
Limit salt water introduction	Strategy
Triple GIWW flow towards Terrebonne Parish.	Strategy
Bury a ship in the Houma Canal.	Strategy
Mississippi and Atchafalaya Rivers Freshwater Introduction - Redistribute sediment from the Atchafalaya River to areas of marsh erosion via a pipeline. This could perhaps be implemented as a strategy, rather than a project.	Strategy
Implement 3rd Delta Project (also 5.1.6)	Strategy
Use drainage canals as conduits for freshwater - Improve flow through secondary conduits to the GIWW; it will however, be necessary to define the network through which the water will be moved from the GIWW across the marshes.	Strategy
Consider redistribution of Atchafalaya River water (30%-70%-something feasible)	Strategy
Optimize Davis Pond Diversion project to divert freshwater to Terrebonne marshes	Strategy
Pipeline sediment conveyance utilizing pipeline right-of-ways	Strategy
Pipeline sediment conveyance utilizing pipeline right-of-ways	Strategy
Pipeline conveyance of sediment from bays, lakes, and rivers	Strategy
Sediment diversion outside of Morganza	Strategy
Use spray dredging to increase sediment volume within the marsh.	Strategy
Plugging and Backfilling Oil and Gas Canals	Strategy
Hydrologic regime restoration in Terrebonne Parish	Strategy
Create marshes as mitigation for Morganza to the Gulf Project	Strategy

Projects Defined as Strategies	
Utilize offshore sediment source for restoration efforts - Introduce sediment into the marsh, using sediment dredged from offshore sources, such as Ship Shoal.	Strategy
Implement more projects for eastern Terrebonne Parish – this area is more vulnerable.	Strategy
Waste assimilation into wetlands	Strategy
Amend policy on permits for development; however, this may require ordinances to be passed by the Parish Council.	Strategy
Produce a foundation map for the Parish's development, with details of planned roads, levees etc. for use by developers and to reduce the want for development in the coastal zone.	Strategy
Educational tools, such as leaflets, information boards etc. should be released amongst the Parish, coastal agencies and the public to better educate the people on coastal issues, options for the coastline and the pro's and cons of those options.	Strategy
Waterway toll, based on tonnage of cargo could be initiated to pay for solutions, such as a lock	Strategy
Freshwater introduction to Bayou Lafourche	Strategy

Duplicated Projects, i.e. covered within other suggested Projects	Project Definition
Barrier Island fortification (breakwaters)	Concept
Rock (breakwaters) for Raccoon Island	Project
Restore reef adjoining Pointe Au Fer	Project
Choke all passes with rocks to reduce tidal prism	Concept
Implement HNC Lock	Project
Integrate operations of HNC and Morganza structures	Project
Saltwater barrier in front of HNC	Project
Three phases of HNC constrictions to reduce salinity	Project
HNC bank stabilization	Project
Construction of a tidal lock located along the Houma Canal to control west from the Atchafalaya River to Houma - (also 5.1.5).	Project
Construction of a flood gate along the Houma Canal.	Project
Penchant Basin Hydrologic Restoration	Project
Bayou Lafourche freshwater introduction	Project
Choking HNC at Dulac to improve freshwater conveyance	Project
Implement Lake Decade Project	Project
Wine Island - Eastern Flank	Project
Implement a small Third Delta	Concept
Convey Lake Palourde water to Terrebonne	Concept
Convey freshwater to Penchant Basin (South)- Dredge Bayou Penchant	Concept
Freshwater introduction near Terrebonne- Lafourche Parish line	Concept
Hydrologic introduction from Lake Salvador	Concept
3000 cfs. freshwater introduction to Pointe-Aux-Chenes	Concept
Bayou Lafourche- GIWW conveyance of freshwater -Build a conveyance channel across Lake Salvador to Bayou Lafourche via Bayou Terrebonne into Company Canal to Lake Boudreaux	Concept
Redirection of existing treated sanitary systems to marshes	Concept
Atchafalaya River Diversion	Concept
Create marshes inside the lake and bay rims	Concept
Freshwater introduction to Bayou Lafourche from western side	Project
Dredge Company Canal near Shriver to get freshwater	Project
Implement Grand Bayou project	Project
Lake Boudreaux Hydrologic Restoration	Project
Bank stabilization along Bayou Terrebonne	DNR Fiscal year 08
Convey Atchafalaya River Water to Northern Terrebonne Marshes	Ready for Construction
Implementation of Natural Resources Conservation Service Boudreaux Basin Watershed Plan	Ready for Construction

Duplicated Projects, i.e. covered within other suggested Projects	Project Definition
Improve drainage from the basin especially Southern and Eastern directions. Project: Upper Bayou Penchant Watershed Management	Ready for Construction
Lake Boudreaux Wetland Project	Project
Landbridge between Caillou Lake and the Gulf of Mexico	Ready for Construction

Projects Excluded from Analysis	Reason for exclusion
Add rocks to Grand Caillou and Ward 7 levees – flood protection project.	Flood protection project
Barrier rock constructed with rocks (Redundant)	Redundant
Bayou Lafourche freshwater reintroduction	Under Construction
Conveyance channel across Lake Salvador (Redundant)	Redundant
Lake Borne marsh creation	Mistake!
Feasibility of backfilling oil and gas canal and plugging (Redundant)	Redundant
Barrier Island Maintenance	LDNR Fiscal Year 08/09
Hazard Mitigation Grant Program (This money is currently used for drainage studies, individual homes lost to natural disasters, and other small projects within the Parish. The amount of funding available is currently not large enough to sustain and protect.	Ready for Construction
Morganza to the Gulf of Mexico	Ready for Construction
North Lake Mechant Landbridge Restoration (TE44)	Partially constructed
Raccoon Island Shoreline Protection/Marsh Creation (TE48 - construction complete, punch list unfinished)	Constructed

Initial List of Projects		
FINAL PLAN Project No.	Concept	Initial List of Projects
F1		Shoreline Protection Of The Houma Navigation Canal, Mile 12-31.4
F2		Houma Navigation Canal Lock (State And Parish Cost Shared) (TE62)
F3		Plug Leaks In GIWW (Bankline Protection For GIWW)
F4		GIWW Bank Restoration Of Critical Areas In Terrebonne (TE43)
F5		Central Terrebonne Freshwater Enhancement Project (Neck Down Grand Pass)
F6		Marsh Creation To The North Of Lost Lake
F7	Sediment Conveyance To Lake Decade Area	West Shore Lake Decade
F8		South-West Shore Lake Decade
F9		Lake Decade Marsh Creation And Nourishment (PPL18)
F10	Sediment Introductions At Lake Mechant	North Shore Lake Mechant
F11	Shoreline Protection Along The Northern Perimeter Of All Inland Lakes And Bays	Marsh Creation North Raccourci Bay
F12		Marsh Creation Bush Canal
F13		Lake Boudreaux-Lake Quitman Shoreline Protection And Marsh Creation
F14	Landbridge Across Terrebonne Bay	Marsh Creation North Shore Lake Chien
F15		Marsh Creation North Shore Lake Tambour
F16		Terrebonne Bay Shoreline Protection/Marsh Creation Comprehensive Plan Project (Was PPL18 Modified For PPL 19) PPL19
F17	Terracing Projects To Reduce Fetch	Dulac Bayou - Marsh Terracing
F18		South Montegut - Marsh Terracing
F19		Bay Raccourci Marsh Creation And Terracing Project

Initial List of Projects		
FINAL PLAN Project No.	Concept	Initial List of Projects
F20		Rebuild The East Bank Of Bayou Terrebonne - Integrity For Freshwater Conveyance
F21	Marsh Creation Projects Where Floatants Were Lost (North Western Terrebonne)	Marsh Creation North Stump Canal
F22		Marsh Creation School Board Property South Of Swing Bayou
F23		Marsh Creation Northeast Toilet Bowl Canal
F24		Marsh Creation Northeast Of Bayou Penchant
F25	Use Material From The Houma Navigation Channel To Increase Sediment Volume Within The Marsh	Marsh Creation North Deep Saline
F26		Marsh Creation West Of Four Point Bayou
F27		Marsh Creation East Of Felix Lake
F28	Create Marshes As Buffer For Parish Drainage Levees	Marsh Creation East Of Lake Boudreaux
F29		Madison Bay Marsh Creation And Terracing (TE51)
F30		North Lost Lake Marsh Creation/Enhancement Project-Phase 1 And Phase 2
F31		Lost Lake Shoreline Protection And Hydrologic Restoration (PPL 18 R3-TE-01) PPL19
F32		Chacahoula Basin Plan (Pump Stations Etc)
F33		Freshwater Introduction Via Blue Hammock Bayou
F34		Bayou Terrebonne Ridge Restoration - Below Bush Canal
F35		Bayou Dularge To Grand Pass Ridge Restoration
F36		Bayou Decade Ridge Restoration From Lake Decade To Raccourci Bay
F37	Sediment	Sediment Introductions At South Shore Sister Lake

Initial List of Projects		
FINAL PLAN Project No.	Concept	Initial List of Projects
	Introductions At Sister Lake	
F38		Rock (Breakwaters) For Whiskey Island
F39	Barrier Island Restoration In Terrebonne Parish	Raccoon Island
F40		Whiskey Island
F41		Trinity Island
F42		East Island Dune And Marsh Restoration
F43		Wine Island
F44		West Timbalier Island
F45		East Timbalier Island
F46		Wine Island Rookery
F47		
F48	Barrier Island Restoration With Rocks - Fix The Barrier Islands In Their Current Position Using Rock. Raccoon Island Has Proved To Be Successful.	West Raccoon Island Shoal Enhancement And Protection (PPL18)
F49		Whiskey Island Back Barrier Marsh Creation (TE50)
F50		Beach And Back Barrier Marsh Restoration, East And Trinity Islands (CIAP Tier 2)
F51		Enhancement Of Barrier Island Vegetation Demonstration (TE53)
F52		Raccoon Island Shoreline Protection/Marsh Creation (TE48b)
F53		Coastal Bay Sediment Trapping (PPL18)
F54		West Belle Pass Barrier Headland Restoration (TE52)

Initial List of Projects		
FINAL PLAN Project No.	Concept	Initial List of Projects
F55	Create Oyster Reefs	Create Oyster Reef As An Extension To Pointe Au Fer
F56		Barrier Shoreline Restoration Pointe Au Fer Island
F57	GIWW To Divert Freshwater Into Terrebonne Parish Using Siphons	Dredge Bayou Terrebonne From Company Canal To Humble Canal
F58		Dredge Minors Canal (GIWW To Lake Decade)
F59		Connect St. Louis Canal To Petit Caillou
F60		Remove Constrictions/Dredge GIWW From Bayou Black To Bayou Wallace
F61		Break In Avoca Guide Levee, North Of Horseshoe To Convey Freshwater To Terrebonne Marshes
F62		Dredge Company Canal To Convey Freshwater Flow To Terrebonne Marshes
F63		Marsh Restoration Southwest Of Four League Bay (Phased Implementation)
F64		Carencro Bayou Freshwater Introduction Project
F65		Large Pump Station At Bayou Terrebonne
F66		Pump Station At Bayou Petit Caillou For Freshwater Diversion To Ward 7
F67		Falgout Canal Freshwater Enhancement (Phase I)
F68		South Lake Decade Freshwater Enhancement And Shoreline Protection
F69		North Lake Boudreaux Basin Freshwater Introduction And Hydrologic Management (TE32a)
F70		Brady Canal Hydrological Restoration Project
F71		Ashland Freshwater Introduction And Wetland Assimilation Project (PPL18)
F72	Storm And Waste Water For Marsh Freshwater Enhancement	Lower Bayou Dularge Pump Station
F73		Upper Bayou Dularge
F74		Mayfield

Initial List of Projects		
FINAL PLAN Project No.	Concept	Initial List of Projects
F75	(Pump Stations)	Lower Grand Caillou
F76		Upper Grand Caillou
F77		Woodlawn Ranch Road
F78		Pointe-Aux-Chenes
F79		Bayou Terrebonne Freshwater Diversion Project (PPL19)
F80		Freshwater Diversion Using The Bayou Terrebonne Flood Gate
F81		Installation Of A Structure Containing A Large Boat Bay In Robinson Canal Near Highway 56.
F82		Installation Of Flap Gated Culverts Under Highway 57 Between Dulac And Highway 56.
F83		Avoca Island Diversion And Land Building (TE49)
F84		Bank Stabilization Along Bush Canal And Bayou Terrebonne
F85		Reconnect Grand Bayou To GIWW
F86		Implementation Of The Penchant Basin Plan (TE34)
F87		Lake Mechant South-West Shoreline Protection And Bayou Dularge Ridge Protection (PPL18)
F88		HNC Beneficial Use Of Dredge Material (Bay Tambour And Terrebonne Bay)
F89		Madison/Terrebonne Bays Marsh Creation (PPL19 Nominee)

2 Project Descriptions - Initial List

1. Shoreline Protection Of The Houma Navigation Canal, Mile 12-31.4 (CIAP Tier 2)

Project Title: Shoreline Protection of the Houma Navigation Canal, Mile 12 – 31.4

Entity/Individual Nominating the Project: Terrebonne Parish Consolidated Government

Contact Information:

Mr. Al Levron
Director of Public Works
Terrebonne Parish Consolidated Government
P.O. Box 2768
8026 Main Street
Houma, LA 70361
(985) 873-6407
(985)-873-6409 (fax)
allevron@tpcg.org

Total State CIAP Funds Proposed: \$5,932,575

Infrastructure Funds Proposed: \$0

Description and Location of Project: The Houma Navigation Canal (HNC) is located approximately 45 miles southwest of New Orleans, Louisiana, in the center/lower section of Terrebonne Parish, Region 3, in the Terrebonne Basin. Miles 12 to 31.4 have been selected for protection in this project.

Project Type: Authorized Use 1

Project Justification: The shoreline of the HNC is suffering from severe erosion due to tidal action as well as waves created by vessels navigating the channel. The shoreline erosion rate in the project area is approximately 5.4 feet annually and implementation of this project will halt the shoreline erosion. If this erosion is allowed to continue, the entire area will be devastated by saltwater intrusion. This will eventually lead to the destruction of the entire management area. This project proposes placing a rock dike along the most critical reaches of the east and west bank lines of the channel from Bayou Plat to Bayou Provost. The rock dike will be placed off the bank line to allow for marsh creation behind the dike.

This project proposes placing a rock dike along a major portion from Mile 28 to 23.5 of the west bank of the channel and Mile 24.3 to 23.7 on the east bank of the channel. These reaches were identified as most critically in need of bank stabilization. The proposed design is the same for all reaches and consists of a foreshore dike with an all rock section (36 inch gradation) placed on a geotextile reinforcement fabric. The dike extends 50 feet from bank to toe and is 5 feet NGVD at its highest elevation. Flotation dredging is required to access the worksite and will be allowed to elevation -8.0 MLG, beginning a minimum of 50 feet from the toe of the dike section proper. Approximately 25,000 yards of flotation dredging is required on the west bank and 60,000 yards on the east bank. The dredged material will be placed behind the rock dike.

Over 40,000 acres of adjacent marsh will be protected by the implementation of this project. Failure to implement this project will result in the continued erosion of the shoreline from tidal action and marine vessel activity. The entire area would eventually succumb to the effects of increasing salinities and would gradually convert to open water. In addition to the loss of critical habitat, the navigation channel itself could sustain impacts.

Project Cost Share: None

Duration: Four years

2. Houma Navigation Canal Lock (State And Parish Cost Shared) (CIAP, Tier 2)

Project Title: Houma Navigation Canal Lock

Entity/Individual Nominating the Project: Terrebonne Levee and Conservation District

Contact Information:

Mr. Jerome Zeringue, Executive Director
Terrebonne Levee and Conservation District
220 Clendenning Road
Houma, LA 70361
(985) 594-4104
jzee@tlcd.org

Total CIAP Funds Proposed: \$43,000,000

Parish CIAP Funds Proposed: \$10,000,000 (\$6,904,500 Authorized Use 1)
(\$3,095,500 Authorized Use 5)

State CIAP Funds Proposed: \$33,000,000 (Authorized Use 5)

Infrastructure Funds Proposed: \$36,095,500

Description and Location of Project: This project involves the use of CIAP funds to support and accelerate construction of the Houma Navigation Canal (HNC) Lock complex for hurricane protection, control of saltwater intrusion, and enhanced freshwater distribution for coastal restoration purposes. The proposed lock complex is a critically important component of the Morganza to the Gulf of Mexico (MTGOM) Hurricane Protection Project now awaiting Congressional authorization.

The HNC lock complex would be located at Dulac, Louisiana, near the confluence of the HNC and Bayou Grand Caillou. That complex will consist of a 200 foot wide floodgate, a 110 foot wide by 800 foot long lock chamber, and the associated needed improvements to the site, all built in a realigned HNC channel just west of the existing HNC. The project also includes a closure dam across the existing HNC channel once the new structure and channel are built. The new lock and floodgate will be built primarily on an existing maintenance dredging spoil disposal area on the 86 west bank of the existing HNC. The project will be built in this manner to allow for continued, uninterrupted navigation in support of Outer Continental Shelf (OCS) activities through the channel during construction period. The HNC Lock complex will tie in with the proposed MTGOM hurricane protection levees at their juncture with the HNC.

The HNC floodgate is designed to allow for continued use of the channel by the offshore fabrication industry located in Houma, 20 miles to the north. It allows for use of the channel by structures up to 250 feet wide through innovative design techniques.

The HNC lock chamber is a key component of the complex because it will allow for continued use of the waterway during periods of saltwater intrusion and freshwater management. During those periods, the floodgate will be closed, and smaller vessels will be routed through the lock chamber. Also during those periods, but much less frequently, the larger floodgate will have to be opened for a short period of time to allow for passage of larger vessels. These passages will usually only require a 12 hour opening of the large floodgate.

A portion of the CIAP funds requested would be spent on that project component consisting of an access road from Mayfield Road to the lock site and associated culverts at Bayou Platte. The 4,400 foot, two lane road will be constructed in two phases, with the first phase beginning in the spring of 2008 and the second phase in the summer of 2009. The total cost of the access road is \$10 million; the Terrebonne Levee and Conservation District will use that amount of CIAP

funding, consistent with executed agreements and MOAs, to construct that access road. The road will provide access for the construction of the lock and floodgate and for long-term operations and maintenance of the project.

The USACE is expected to complete design for the lock complex (lock and floodgate) in the fall of 2009. The USACE intend to bid the entire lock complex in a single construction contract, and construction could start in late 2009. The CIAP funds remaining at that time would be contributed to the USACE early in the construction contract schedule; it is not possible at this time to identify the specific components of the lock complex that will be funded with the remaining \$33 million of its CIAP funding.

Project Type: Authorized Use 5, with additional benefits to coastal wetlands, i.e., Authorized Use 1

Project Justification: The HNC has enabled Houma to serve as a major source of onshore support for offshore oil and gas oil and gas exploration and production. That waterway, however, along with canals excavated for pipelines transporting OCS oil and gas production, have significantly contributed to the degradation and loss of freshwater marshes and swamps. This extensive loss of low-salinity wetlands has made Houma and adjacent communities more vulnerable to storm surge from 87 hurricanes. HNC-related saltwater intrusion has also adversely affected municipal freshwater supplies in the Houma area and along portions of Bayou Lafourche.

The project will help to mitigate OCS impacts by reducing wetland losses through reductions in saltwater intrusion and enhanced potential for improved distribution of freshwater and nutrients and enhanced management of Atchafalaya River inflows via the Gulf Intracoastal Waterway. A 1998 USACE feasibility report indicated that the lock's salinity reduction alone would reduce wetland loss by about 1,260 acres over the 50-year project life (an average of approximately 25.2 acres per year); that estimate does not include beneficial operation of the lock and floodgate to enhance freshwater distribution into the adjacent wetlands. Measurable objectives for the proposed CIAP expenditures include accelerating the construction of the lock, floodgate and associated features of the HNC lock complex, thereby providing the capability to:

- 1) reduce saltwater intrusion into sensitive wetlands and area water supplies via lock and floodgate operation when target salinity thresholds (e.g., 7.5 parts per thousand) are exceeded at Dulac and/or Atchafalaya River flows fall below a designated flow level (e.g., 100,000 cubic feet per second);
- 2) increase freshwater inflows from the HNC into Terrebonne Basin wetlands;
- 3) reduce tidal surges up the HNC during hurricanes.

Project Cost Share: As outlined in the guidance for the application process as specified by LDNR, as well as the preliminary guidance provided by the U.S. Minerals Management Service, the nominating agencies have worked to find other complementary funding sources for the HNC Lock complex. The nominating agencies have identified four other sources that are available and applicable to the lock project. They are as follows:

Terrebonne Parish CIAP Funding \$ 10 Million

State CIAP Funding 33 Million*

State Capital Outlay 20 Million

Federal Appropriations 90 Million

Total \$170 Million

* Nominating entity requested \$49.3 million of state CIAP funding

Duration: Six years

3. Plugs Leaks In GIWW (Bankline Protection For GIWW)

This project entails shoreline protection on the south shoreline of the Gulf Intracoastal Waterway in order to close off the “leaks” which will facilitate freshwater conveyance to the eastern Terrebonne marshes as well as prevent unwanted deterioration of flotant marsh in northwestern Terrebonne. This shoreline protection project will begin at Bayou Wallace and follow the length of the GIWW to Bayou Copesaw.

4. GIWW Bank Restoration Of Critical Areas In Terrebonne (TE43)

Louisiana Coastal Wetlands Conservation and Restoration Task Force

October 2003



GIWW Bank Restoration of Critical Areas in Terrebonne (TE-43)

Project Status

Approved Date: 2001 **Project Area:** 3,324 acres
Approved Funds: \$2.2 M **Total Est. Cost:** \$19.7 M
Net Benefit After 20 Years: 366 acres
Status: Engineering and Design
Project Type: Shoreline Protection

Location

The project is located in the Terrebonne basin, in Terrebonne Parish, Louisiana.

Problems

In the past 20 years, as the efficiency of the Lower Atchafalaya River has decreased, Verrett subbasin flooding and Atchafalaya River flows via the Gulf Intracoastal Waterway (GIWW) have increased. Deterioration of fresh and intermediate wetlands, particularly of the floating marshes in the upper Penchant basin, has been attributed to sustained elevated water levels. In addition, floating marshes in some areas have become directly exposed to increased circulation through unnatural connections formed where channel banks deteriorated.

Conversely, losses in the central Terrebonne Parish marshes have been attributed to the elimination of riverine inflow coupled with subsidence and altered hydrology from canal dredging that facilitated saltwater intrusion. Increased flow of the GIWW and wave pulses from navigation traffic are causing additional breakup and loss of floating marshes in unprotected areas.

Restoration Strategy

This project will restore critical lengths of deteriorated channel banks and stabilize/armour selected critical lengths of deteriorated channel banks with hard shoreline stabilization materials.

Progress to Date

Geotechnical soils investigation report is complete. Soils in the area are very soft and fluid.

This project is on Priority Project List 10.



Large mats of floating freshwater marsh, such as this one, detach from their point of origin and enter the GIWW through large breaches in the existing shoreline.



Concrete "H" pile/panel structures, similar to this one, will be installed at locations within the project area where shoreline erosion is critical. Soils with high amounts of organic material, which have poor strength, necessitated the use of a structure such as this.

For more project information, please contact:



Federal Sponsor:
Natural Resources Conservation Service
Alexandria, LA
(318) 473-7756



Local Sponsor:
Louisiana Department of Natural Resources
Baton Rouge, LA
(225) 342-7308

www.LaCoast.gov

GIWW Bank Restoration of Critical Areas in Terrebonne (TE-43)

 Shoreline Protection

 Project Boundary



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

Background Imagery:
2002 Thematic Mapper Imagery

Map Date: August 27, 2003
Map ID: 2002-11-547
Data accurate as of: April 4, 2003



5. Central Terrebonne Freshwater Enhancement Project (Neck Down Grand Pass) (CWPPRA Nominee PPL18, R3-TE-12)

PPL18 PROJECT NOMINEE FACT SHEET
2/20/2008

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 the size of the opening to 150' wide and 15' deep. The project would reestablish the historic ridge function of Bayou Dularge 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 approximately 90%, which would have a significant effect on marine tidal transfer through Lake Mechant. The salinity reduction is expected to impact as much as 52,000 acres of wetland area. The hydrologic modifications to Liners and Minors canal are expected to increase freshwater conveyance to the region by 500-1000 cfs. The combined effect of reducing tidal flux and increasing freshwater in the area will reduce wetland loss.

Identification of Potential Issues

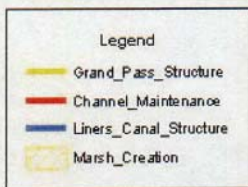
The proposed project has the following potential issues: Landrights and O&M.

Preliminary Construction Costs

\$8.5 million

Preparer of Fact Sheet

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



Central Terrebonne Enhancement

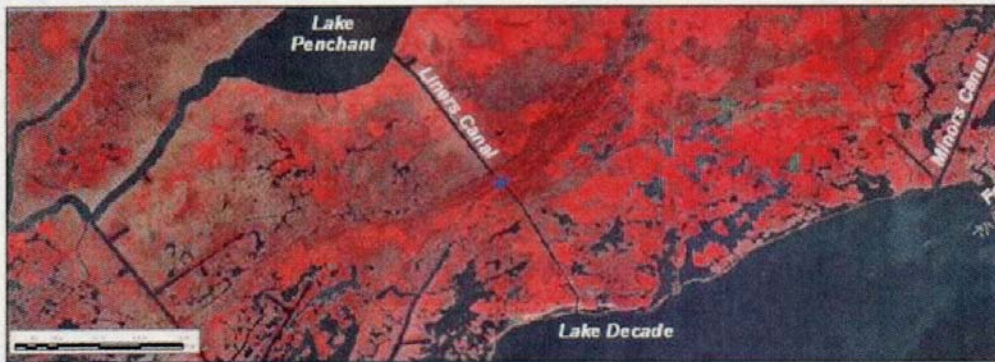
Terrebonne Parish, Louisiana

PPL-18

Grand Pass Structure



Liners Canal Structure



Minors Canal Outfall Maintenance/Marsh Creation



6. Marsh Creation To The North Of Lost Lake

Marsh creation to the north of Lost Lake, using dredged material.

7. Sediment Conveyance To Lake Decade Area- West Shore Lake Decade

Marsh creation will occur between Liners Canal, Turtle Bayou, Bayou Decade, and Lake Decade. The material for this marsh creation project will be sourced via dredge material from Lake Decade. This project will be completed in order to prevent further deterioration of the marsh surrounding the western side of Lake Decade. Also, the subsidence rate within this area is relatively high and input of dredge material will help to negate subsidence.

8. Sediment Conveyance To Lake Decade Area- South-West Shore Lake Decade

Marsh creation will occur between Lake Decade, Bayou Decade, Raccourci Bay, and Small Bayou La Pointe. The material for this marsh creation project will be sourced via dredge material from Lake Decade. This project will be completed in order to prevent further deterioration of the marsh surrounding the southwestern side of Lake Decade. Also, the subsidence rate within this area is relatively high and input of dredge material will help to negate subsidence.

9. Lake Decade Marsh Creation And Nourishment (CWPPRA Nominee PPL19)

PPL19 PROJECT NOMINEE FACT SHEET
January 28, 2009

Project Name:

South Lake Decade Marsh Creation and Nourishment

Coast 2050 Strategy:

Coastwide Strategy –Dedicated Dredging to Create, Restore, or Protect Wetlands

Regional Strategy – Dedicated delivery and/or beneficial use for marsh building by any means feasible means

Mapping Unit Strategy - Beneficial use of dredged material

Project Location:

Region 3, Terrebonne Basin, Mechant/Decade Mapping Unit, Terrebonne Parish, located along the shorelines of Lake Decade southwest of Theriot.

Problem:

The project would restore lake edge and interior wetlands that have been lost and fragmented. The marsh creation and nourishment areas would maintain delineation of the lake rim if the lake shoreline levees are no longer possible to be maintained. What problem will the project solve? Wetland loss rates are evidence for the nature and scope of the problem in the project area. The wetland loss rate for the mapping unit is -0.7 % per year during 1956 to 1974 and -0.4% per year during 1983 to 1990. For polygon B, the land loss rate was -2.29% per year from 1956 to 1974 and -0.26% per year during 1983 to 1990 (after the landowner initiated maintaining the lake shoreline in the 1980's). Section A of the shoreline breached during the summer of 2007, only eight months after the previous "lift". Generally, breaches develop in between the annual maintenance efforts to re-establish the integrity of the shoreline.

Goals:

The conceptual project goals are to accomplish approximately 350 acres of marsh creation and 150 acres of marsh nourishment in strategic locations to enhance and maintain the structural integrity of the lake shorelines.

Proposed Solutions:

Sediment would be dredged from Lake Decade and placed in a semi- to confined manner in strategic locations along the lake shoreline to create and nourish intertidal, intermediate, and fresh marsh. Approximately half of the created marsh acres would be planted with appropriate wetland vegetation. The borrow area in Lake Decade would be located and designed in a manner to avoid and minimize environmental impacts (e.g., to submerged aquatic vegetation and water quality) to the maximum extent practicable.

Preliminary Project Benefits:

The following questions should be addressed: 1) The total acreage benefited both directly and indirectly is 500 acres. 2) Approximately 389 net acres are expected at TY 20. *Note that this is a draft number subject to pro-rating revisions due to overlapping with the South Lake Decade TE-39.* 3) The anticipated loss rate reduction throughout the area of direct impacts is 50-74%. 4) The marsh creation would help maintain the structural limits of Lake Decade, especially if the existing levees can not be maintained. 5) The project would not have a significant impact on

critical or non-critical infrastructure. 6) The project would have direct synergy with the TE-39, South Lake Decade Freshwater Introduction Project.

Identification of Potential Issues:

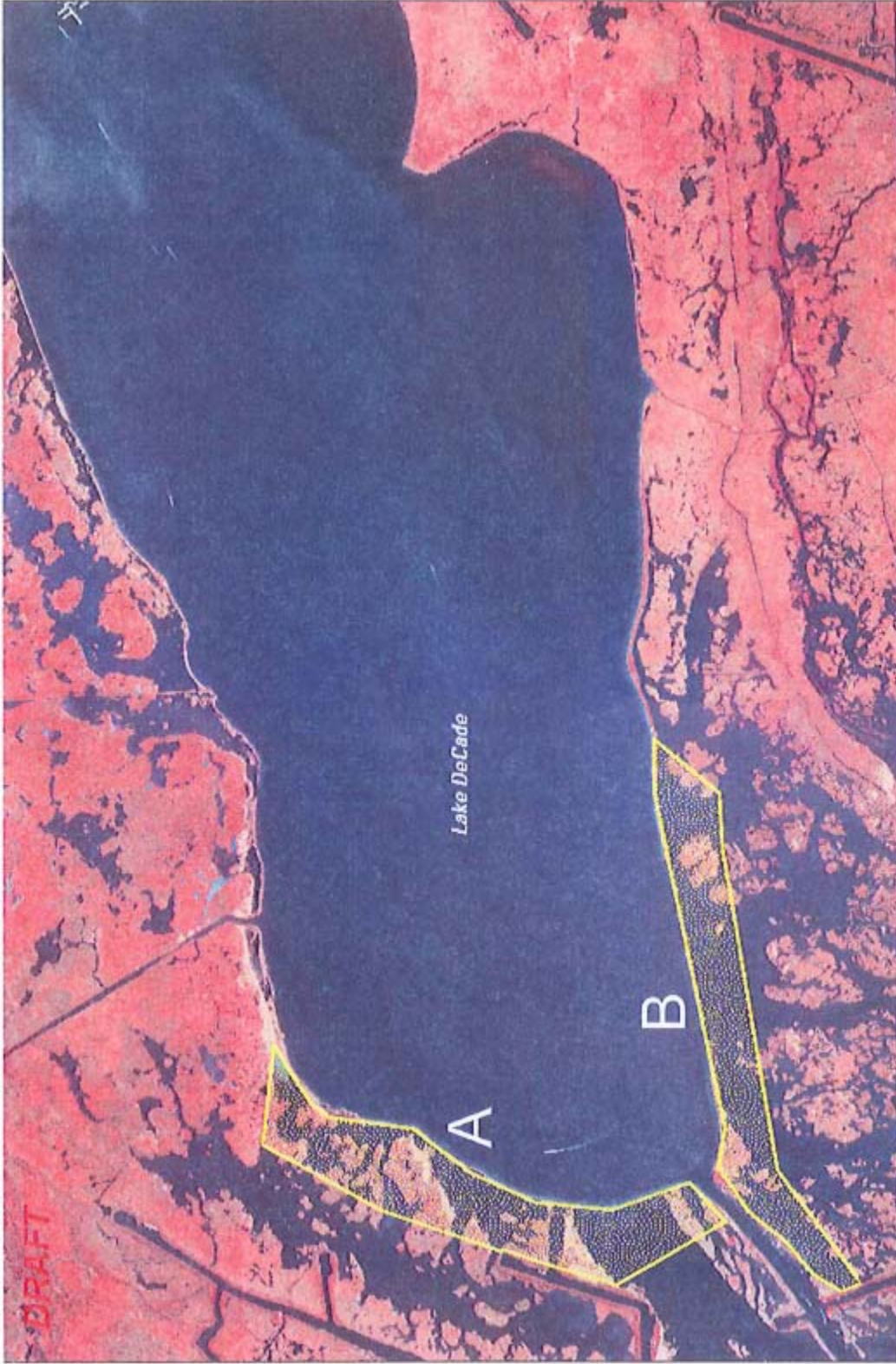
The proposed project has the following potential issues: utilities/pipelines, etc. The fill areas are located on Apache Corporation property and the conceptual features have been coordinated with them.

Preliminary Construction Costs:

The lump sum construction cost including 25% contingency is \$21,373,000.

Preparer(s) of Fact Sheet:

Patrick Williams, NOAA's National Marine Fisheries Service, (225)389-0508, ext 208,
patrick.williams@noaa.gov



Lake Decade Marsh Creation and Nourishment



 Marsh Creation/Nourishment



10. Sediment Introductions At Lake Mechant- North Shore Lake Mechant

Marsh creation will occur between Raccourci Bay, Bayou Decade, Lake Paige, and north of the oil field canals. The material for this marsh creation project will be sourced via dredge material from Lake Mechant. This project will be completed in order to prevent further deterioration of the marsh surrounding the north western portion of Lake Mechant. Also, the subsidence rate within this area is relatively high and input of dredge material to this area will help to negate subsidence

11. Shoreline Protection Along The Northern Perimeter Of All Inland Lakes And Bays- Marsh Creation North Raccourci Bay

This project is located north of Bayou Decade from Turtle Bayou to the western shore of Bay Long. Marsh will be created via dredged material in order to prevent further deterioration of the northern shoreline of Raccourci Bay.

12. Shoreline Protection Along The Northern Perimeter Of All Inland Lakes And Bays- Marsh Creation Bush Canal

This project is located in the area of open water directly south of Bush Canal between Bayou Petit Caillou and Bayou Terrebonne. Marsh will be created via dredge material. Lake Boudreaux is one potential source for dredge material to complete this project.

13. Lake Boudreaux- Lake Quitman Shoreline Protection And Marsh Creation (CWPPRA Nominee PPL19)

PPL19 PROJECT NOMINEE FACT SHEET
January 28, 2009

Project Name:

Lake Boudreaux-Lake Quitman Shoreline Restoration and Marsh Creation

Coast 2050 Strategy:

Regional Strategy #8; Dedicated Dredging for Wetland Creation; # 10 Maintenance of Bay and Lake Shoreline Integrity;

Project Location:

Region 3, Boudreaux Basin, Terrebonne Parish, South Shore of Lake Boudreaux and North Shore of Lake Quitman

Problem:

Interior marsh loss rates were calculated to be 2.8 %/year by USGS in this area as per PPL 17 Southeast Lake Boudreaux Marsh Creation and Terracing Project. Interior marshes and shorelines of Lake Boudreaux and Lake Quitman have experienced high marsh erosion rates due to wind driven waves, subsidence, a lack of new sediments, oil and gas activity, and stresses to the plant community due to increased salinity from Boudreaux and Robinson Canals. The loss of emergent marsh that separates Lake Boudreaux and Lake Quitman has contributed to an increase in the amount of high saline waters entering Lake Boudreaux from Robinson Canal. Marshes along the northern banks of Lake Boudreaux have converted from fresh/intermediate marshes to intermediate/brackish marshes and cypress swamps in the upper reaches of the basin have converted to more of an intermediate marsh. Lake Boudreaux and Lake Quitman are nearing coalescence which will increase the fetch associated with the wind induced waves thus increasing marsh erosion in a basin with some of the highest landloss rates along coastal Louisiana.

Goals:

The main goal of this project is to stop the coalescence of Lake Boudreaux and Lake Quitman by restoring the southern shoreline of Lake Boudreaux and the northern shoreline of Lake Quitman. A second goal is to protect and/or restore fragile shorelines along several reaches of Lake Boudreaux. *Specific Project Goals:* 1) Stop the coalescence of Lake Boudreaux and Lake Quitman into one large lake which would significantly increase the lakes north-south fetch. 2) Halt shoreline erosion along 10,500 ft of the southern shoreline of Lake Boudreaux. 3) Extend the rock dike constructed as part of the TE-46 CWPPRA project so as to stop shoreline erosion along the western shoreline of Lake Boudreaux. 4) Extend a rock dike 1,300 ft. from an existing State project to Boudreaux Canal (this would complete that project). 5) Restore 1,200 ft of shoreline along the northern shoreline of Lake Boudreaux which would reestablish the functionality of a component within a recently completed CWPPRA project (West Lake Boudreaux Project TE-46), which was lost during Hurricane Gustav. 6) Create 115 acres of marsh and nourish 130 acres of marsh along the southern shoreline of Lake Boudreaux and north shore of Lake Quitman.

Proposed Solutions:

1) Place 10,600 LF of rock as hard shoreline protection along the southern shoreline of Lake Boudreaux and northern shoreline of Lake Quitman. Extend the rock dike from the TE-46 project by placing 2,500 ft of rock in front of a section of marsh along the western shoreline of

Lake Boudreaux. Extend an existing rock dike 1,300 ft. to tie into the Boudreaux Canal levee along the northeastern shoreline of Lake Boudreaux. This would thereby complete a previously constructed project that was halted due to lack of funds. All rock dikes would be built to a height of +3.5 NAVD 88 on the -2 ft contour. There would be a 1:3 side slope and geofabric would be placed under the rock.

2) Create 115 acres and nourish 130 acres of emergent marsh behind the 10,600 ft. of rock shoreline protection. All marsh would be created with a hydraulic dredge and material would be placed to a height of +1.5 to +2.0 ft NAVD 88. All material would be contained with earthen containment dikes which would be adequately gaped or degraded within 3 years post construction to allow for fisheries access. The borrow site for this material would be in Lake Boudreaux.

3) Restore a 1,200 ft. section of shoreline along the northwestern shoreline of Lake Boudreaux which would restore a functionality of a component of the TE-46 project that was lost due to Hurricane Gustav. Shoreline restoration would consist of an earthen berm constructed to a height of +2.0 and planted with *Spartina alterniflora* reduce initial erosion.

Preliminary Project Benefits:

1) *What is the total acreage benefited both directly and indirectly?* The total acreage directly benefited would be the creation of 115 acres of marsh and the nourishment of 130 acres of marsh. Halting shoreline erosion would protect those 245 acres of emergent marsh. Also direct benefits would be realized along the western shoreline where the rock dike constructed as part of the TE-46 project would be extended for 2,500 ft. thereby protecting that emergent marsh along the western shoreline. The marsh and shallow open water behind the 1,200 ft of shoreline restoration would be protected also some benefits could be realized from the completion of the 1,300 ft of rock dike along the eastern shoreline of Lake Boudreaux.

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

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%).* Loss rates in the area of direct benefits would be reduced by 50-74% throughout the project life.

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.* The project would restore and maintain a portion of the Lake Boudreaux and Lake Quitman shoreline.

5) *What is the net impact of the project on critical and non-critical infrastructure?* This project would help protect some oil and gas infrastructure along the eastern shoreline of Lake Boudreaux.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* Project features would work synergistically with the West Lake Boudreaux (TE-46), North Lake Boudreaux (TE-32), and several shoreline protection projects by DNR on the northeast shore of Lake Boudreaux.

Identification of Potential Issues:

There are two oyster leases within the project boundary, but impacts should be minimal.

Preliminary Construction Costs:

Lump sum construction costs are estimated to be \$12.4 million, \$15.5 with a 25% contingency.

Preparer(s) of Fact Sheet:

Robert Dubois; U.S. Fish and Wildlife Service; 337-291-3127; robert_dubois@fws.gov

14. Landbridge Across Terrebonne Bay- Marsh Creation North Shore Lake Chien

Marsh will be created between Bayou St. Jean Charles and Bayou Point au Chien on the north shore of Lake Chien in order to re-establish the landbridge that once existed in this area. Lake Chien and Lake Felicity are potential sources of dredge material for this project

15. Landbridge Across Terrebonne Bay- Marsh Creation North Shore Lake Tambour

Marsh will be created between Bayou Barre and Bayou St. Jean Charles on the north shore of Lake Tambour in order to re-establish the landbridge that once existed in this area. Lake Chien, Lake Tambour and Lake Felicity are potential sources of dredge material for this project

16. Terrebonne Bay Shoreline Protection/Marsh Creation Comprehensive Plan Project
(Was A PPL 18 CWPPRA Nominee And Was Modified For PPL 19, R3-TE-05)

PPL19 PROJECT NOMINEE FACT SHEET
January 28, 2009

Project Name:

Terrebonne Bay Shoreline Restoration and Marsh Creation

Coast 2050 Strategy:

Coastwide Strategy: Maintenance of Bay and Lake Shoreline Integrity

Region 3 Strategy #8; Dedicated Dredging for Wetland Creation, #11- Maintain shoreline integrity of marshes adjacent to Caillou, Terrebonne, and Timbalier Bays

Project Location:

Region 3, Terrebonne Basin, Terrebonne Parish. Beginning on the southern most contiguous point along the east bank of Bayou Terrebonne, continuing east along the northern shoreline of Terrebonne Bay and ending at Bayou Chitique.

Problem:

Emergent marshes north of Terrebonne Bay have been eroding as fast or faster than almost any other marshes along coastal Louisiana with extremely high interior landloss rates calculated to be 2% per year and moderate shoreline erosion rates calculated to be between 2 and 8 ft per year by USGS. Reasons for this include a lack of sediment input and a limited supply of freshwater coupled with past dredging of oil and gas canals. This rapid loss of land has dramatically increased the tidal prism north of Terrebonne Bay and directly contributes to the ongoing flooding problems of many communities along Bayou Terrebonne including the town of Montegut. This rapidly increasing tidal prism is also accelerating the interior marsh loss rates for those marshes directly north of Terrebonne Bay. These marshes also serve to slow the progress of high saline waters that threaten the lower saline marshes north and west of Madison Bay.

Goals:

The goal of this project would be to start reducing the tidal prism that has been increasing for many years. This overall goal would be realized by strengthening the northern shoreline of Terrebonne Bay, creating and nourishing the emergent marshes just north of Terrebonne Bay and reducing the cross section of two major bayous and the closing of one bayou. All these components of the project would work together synergistically to reduce water exchange between Terrebonne Bay and interior lakes during normal tidal events and small storm events

Specific goals: 1) Reduce shoreline erosion along 31,000 ft of the northern shoreline of Terrebonne Bay. 2) Create 235 ac of emergent marsh and nourish an additional 300 ac of emergent marsh. 3) Reduce the channel cross sectional on two major bayous to further reduce tidal exchange between the bay and interior marshes.

Proposed Solutions:

This project would propose to strengthen or restore approximately 31,000 ft of shoreline along the northern bank of Terrebonne Bay by creating a +2 ft high earthen berm that with a 50 ft crown which would be planted with *Spartina alterniflora*. Directly behind the earthen berm/shoreline 235 acres of emergent marsh would be created and 300 acres of emergent marsh would be nourished with the use of a hydraulic dredge. Dredge material would be placed to a height of between +1.5 to +2.0 NAVD 88. All constructed containment dikes would be sufficiently gapped or degraded no later than 3 years post construction to allow for fisheries access. This project would also propose to reduce the channel cross section of two of the major

bayous that convey high saline waters directly from Terrebonne Bay into Madison Bay and Bayou Terrebonne. This would be done with sheet piles and would not reduce the depth of the bayou where the cross section is reduced. This could be one part of a phased comprehensive plan to protect the northern shoreline of Terrebonne Bay from further erosion. This would also work synergistically with the constructed CWPPRA Terrebonne Bay Demonstration Project TE-45.

Preliminary Project Benefits:

1) *What is the total acreage benefited both directly and indirectly?* Project area shoreline erosion rates have been calculated to be between 2 and 8 feet per year by USGS. This project would reduce those rates by 50% with the shoreline restoration efforts. The shoreline restoration would also initially create 50 acres of marsh. This project would also create/nourish 535 acres of emergent marsh and reduce the interior land loss of those marshes by 50% from 2% to 1% per year. Additional indirect benefits would be realized through the reduction of wind induced waves in the interior marsh ponds and a reduction of the tidal prism which would also reduce interior land loss rates on other surrounding marshes.

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

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life?* This project would create/nourish 535 acres of marsh and the interior loss rate of 2% per year would be reduced by 50% to 1% per year. If the proposed project were to be constructed interior loss rates of 2% per year would be the loss rate would be expected to be reduced by 50% to 74% throughout the area of direct benefits over the project life.

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 rime, Cheniers, etc?* This project would restore and help maintain the Terrebonne Bay shoreline as well as many other small lakes and marsh ponds.

5) *What is the net impact of the project on critical and non-critical infrastructure?* This project would help protect several camps and some oil and gas infrastructure.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration project?* This project would work with the recently constructed CWPPRA Terrebonne Bay Demonstration Project TE-45.

Identification of Potential Issues:

Pipeline and oyster leases are potential issues with this project.

Preliminary Construction Costs:

Lump sum construction cost are estimated to be \$15.7 million, \$19.6 million with a 25% contingency added

Preparer(s) of Fact Sheet:

Robert Dubois, USFWS, (337) 291-3127, robert_dubois@fws.gov



U.S. Fish & Wildlife Service

Louisiana Ecological Services Field Office

Terrebonne Bay Shoreline Restoration and Marsh Creation Project



17. Terracing Projects To Reduce Fetch- Dulac Bayou Marsh Terracing

Terracing is to be placed to the east of Dulac in Lake Boudreaux. These terraces will reduce fetch as well as potentially build marsh within this area.

18. Terracing Projects To Reduce Fetch- South Montegut Marsh Terracing

Terracing is to be placed to the south of Montegut and north of Wonder Lake. These terraces will reduce fetch as well as potentially build marsh within this area.

19. Bay Raccourci Marsh Creation And Terracing Project (CWPPRA Nominee PPL19)

PPL19 PROJECT NOMINEE FACT SHEET

January 28, 2009

Project Name:

Bay Raccourci Shoreline Restoration and Marsh Creation Project

Coast 2050 Strategy:

Region 3 Strategy #8- Dedicated delivery of sediment for marsh building by any feasible means
Coastwide Strategy: Maintain bay and shoreline integrity; Vegetative plantings; #2: Maintain estuarine gradient to achieve diversity

Project Location:

Region 3, Mechant/de Cade Basin, Terrebonne Parish. This project is located north of Lake Mechant.

Problem:

High saline waters (during the summer and fall months) from Lake Mechant have directly contributed to the loss and/or conversion of much of the historically intermediate marshes to low salinity brackish marshes north of Lake Mechant. Much of the emergent marshes have converted to open water and as these marshes converted to open water increased fetch is now also accelerating interior marsh loss. The zone of intermediate marsh in this area is very narrow and is located directly north of Lake Mechant. This transition zone between brackish marsh and the very productive fresh marshes is a very unique zone that is becoming increasingly scarce along coastal Louisiana. The CWPPRA North Lake Mechant Project TE-44, which is currently under construction, will help retain that transition zone by strengthen critical marshes directly north of the Lake. It will also close some key water exchange points to further slow the movement of high saline waters north. One of the largest exchange points between Lake Mechant and the lower saline marshes north of the lake is Bayou Raccourci. Currently, water from the Lake enters Bayou Raccourci continuing north until it empties into Bay Raccourci, which is just a short distance from the lake. When the high saline water enters Bay Raccourci from Bayou Raccourci it effectively short circuits the TE-44 project and can flow unimpeded into the lower saline marshes in any direction. This project will help reduce the effects of that water exchange point which could not be addressed by the TE-44 project, by restoring the integrity of the Bay Raccourci shoreline through shoreline restoration and marsh creation.

Goals :

The goal of this project is to slow the northern movement of high saline water that enter the low brackish and intermediate marsh directly north of Bay Raccourci and try to retain that zone of intermediate marsh that historically ran south of Lake Decade and north of Bay Raccourci.

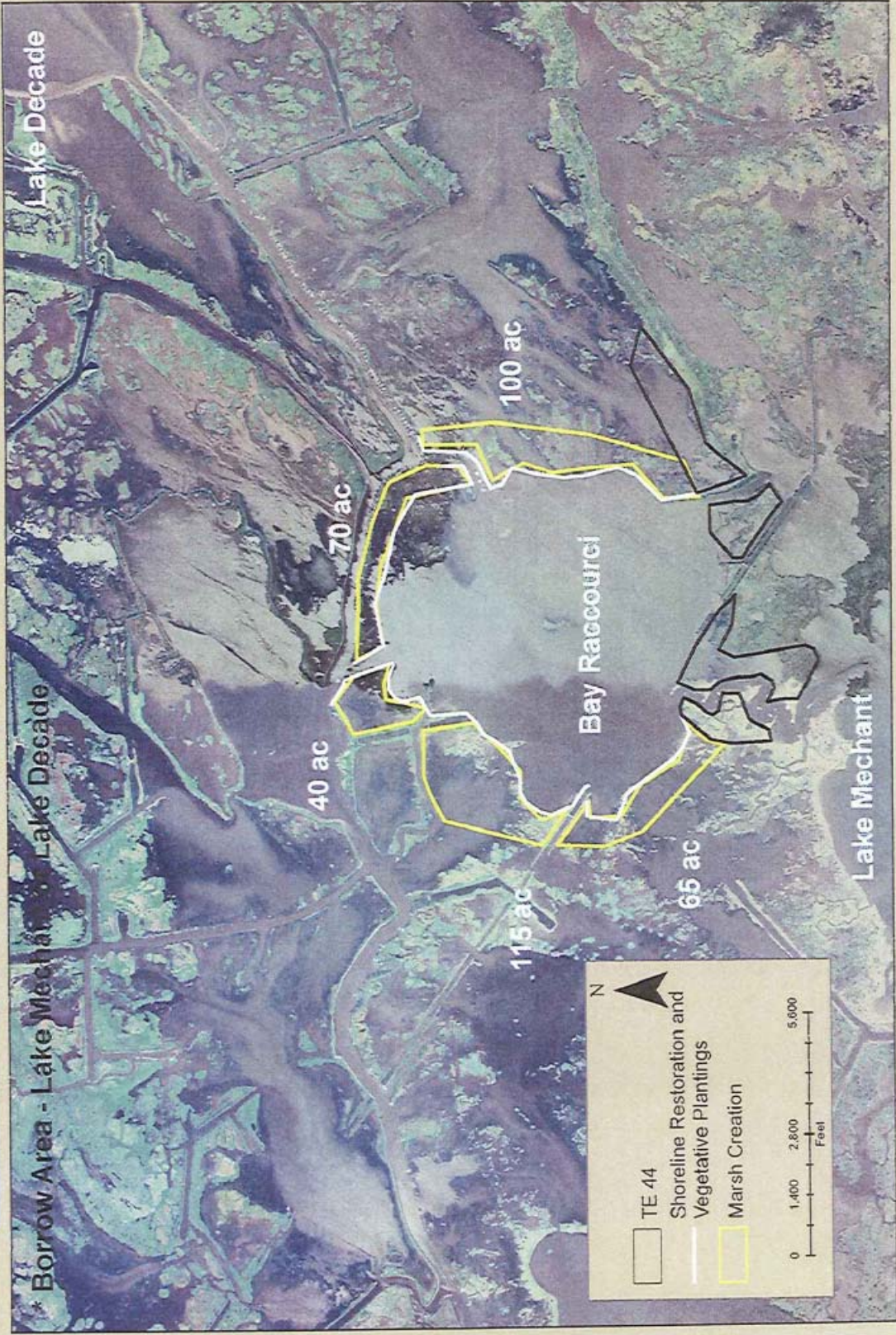
Specific goals: 1) Create approximately 390 acres of intermediate/low brackish marsh around the perimeter of Bay Raccourci. 2) Restore approximately 25,500 linear feet of Bay Raccourci shoreline. 3) Plant the 25,500 ft of the newly restored Bay Raccourci shoreline.

Proposed Solutions:

This project would restore approximately 25,500 linear feet of Bay Raccourci shoreline which would effectively complete the restoration of that shoreline. Shoreline restoration would be accomplished by creating an earthen berm that would be built to a height of +2 ft NAVD 88 and have a 50 crown width. The bay side face of that berm would be planted with *Spartina alterniflora* to quickly establish marsh to minimize the initial erosion. Directly behind the



U.S. Fish & Wildlife Service - Louisiana Ecological Services Field Office
Bay Raccourci Shoreline Restoration and Marsh Creation Project



20. Rebuild The East Bank Of Bayou Terrebonne - Integrity For Freshwater Conveyance

Marsh creation on the east bank of Bayou Terrebonne from Madison Canal to Grand Bayou to improve the integrity of the channel to convey freshwater.

21. Marsh Creation Projects Where Flotants Were Lost (North Western Terrebonne) - Marsh Creation North Stump Canal

Marsh creation will occur directly north of Stump Canal where flotant once existed, but has been degraded and lost.

22. Marsh Creation Projects Where Flotants Were Lost (North Western Terrebonne) - Marsh Creation School Board Property South Of Swing Bayou

Marsh creation will occur on School Board property south of Swing Bayou where flotant once existed, but has been degraded and lost.

23. Marsh Creation Projects Where Flotants Were Lost (North Western Terrebonne) - Marsh Creation Northeast Toilet Bowl Canal

Marsh creation will occur northeast of Toilet Bowl Canal where flotant once existed, but has been degraded and lost.

24. Marsh Creation Projects Where Flotants Were Lost (North Western Terrebonne) - Marsh Creation Northeast Of Bayou Penchant

Marsh creation will occur northeast of Bayou Penchant where flotant once existed, but has been degraded and lost.

25. Use Material From The Houma Navigation Channel To Increase Sediment Volume Within The Marsh- Marsh Creation North Deep Saline

Dredge material from the Houma Navigation Canal will be used to increase the sediment volume within the marshes of North Deep Saline.

26. Use Material From The Houma Navigation Channel To Increase Sediment Volume Within The Marsh- Marsh Creation West Of Four Point Bayou

Dredge material from the Houma Navigation Canal will be used to increase the sediment volume within the marsh west of Four Point Bayou.

27. Use Material From The Houma Navigation Channel To Increase Sediment Volume Within The Marsh- Marsh Creation East Of Felix Lake

Dredge material from the Houma Navigation Canal will be used to increase the sediment volume within the marsh east of Felix Lake.

28. East Lake Boudreaux Marsh Creation As Buffer For Parish Drainage Levee

Use of sediment dredged from Lake Boudreaux to create marsh to the west of Petit Caillou and north of Bush Canal.

29. Madison Bay Marsh Creation And Terracing (TE51)

Louisiana Coastal Wetlands Conservation and Restoration Task Force
Jan. 2008



Madison Bay Marsh Creation and Terracing (TE-51)

Project Status

Approved Date: 2006 **Cost:** \$3,002,171
Project Area: 1,019 acres **Status:** Engineering
Net Benefit After 20 Years: 372 acres
Project Type: Marsh Creation

Location


The 1,019-acre project area is located in Terrebonne Parish, Louisiana, north of Madison Canal between Bayou Terrebonne and Humble Canal.

Problems

This area has experienced tremendous wetland 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 areas north less suitable for various wildlife and fish species.

Restoration Strategy

Project goals include creating and nourishing marsh and associated edge habitat, and promoting conditions conducive to the growth of submerged aquatic vegetation (SAV). Secondly, proposed terraces will reduce the wave erosion of created and existing marshes along the fringes of Madison Bay. Specific phase 0 goals include creating 417 acres and nourishing 258 acres of brackish marsh and constructing about 24,600 linear feet (LF) of terraces. Approximately one-half of the marsh creation area will be planted with smooth cord-grass or marsh hay cord-grass. Reducing shoreline erosion would protect about 6 acres of existing marsh (from existing marsh in terrace field only), and the percent cover of SAV is projected to increase in the project area.



This dredge pipe is rebuilding marsh by depositing sediment dredged from a nearby borrow area. The placed sediment will reach an elevation conducive for growing and sustaining marsh vegetation.



The above terraces are an example for the proposed project. These terraces would help protect the created and existing marshes from wave erosion.

Progress to Date

Phase 1 project design meetings have begun, and the preliminary bathymetry and geotechnical borings are currently being planned.


The estimated total fully funded project cost is \$32,353,377.

This project is on Priority Project List 16.

For more project information, please contact:



Federal Sponsor:
National Marine Fisheries Service
Baton Rouge, LA
(225) 389-0508

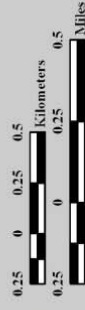


Local Sponsor:
Louisiana Department of Natural Resources
Baton Rouge, LA
(225) 342-7308

www.LaCoast.gov

Madison Bay Marsh Creation and Terracing (TE-51)

-  Terracing *
 -  Marsh Creation *
 -  Project Boundary
- *denotes proposed features



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

Background Imagery:
2005 Digital Orthophoto Quarter Quadrangle

Map Date: November 14, 2006
Map ID: USGS-NWRC 2007-11-0077
Data accurate as of: November 14, 2006



30. North Lost Lake Marsh Creation/Enhancement Project-Phase 1 And Phase 2

Project Title: North Lost Lake Marsh Creation/Enhancement Project – Phase 1 and 2

Entity/Individual Nominating the Project: Terrebonne Parish Consolidated Government

Contact Information:

Mr. Al Levron
Director of Public Works
Terrebonne Parish Consolidated Government
P.O. Box 2768
8026 Main Street
Houma, LA 70361
(985) 873-6407
(985)-873-6409
allevron@tpcg.org

Total State CIAP Funds Requested:

Phase 1 \$2,059,680
Phase 2 \$1,570,800
Total: \$3,830,480

Infrastructure Funds Proposed: \$0

Description and Location of Project: Phase 1 of the North Lost Lake Marsh Creation/Enhancement Project consists of the construction of approximately 100 acres of new marsh in open water and the enhancement of approximately 96 acres of highly degraded marsh. Phase 1 is located in Region 3, Terrebonne Basin, Terrebonne Parish, Louisiana. Phase 1 is approximately 21,300 feet in length and is situated in Section 1, Township 20 South, Range 13 East and Sections 4, 5, 6, 9 and 10, Township 20 South, Range 14 East.

Phase 2 of the North Lost Lake Marsh Creation/Enhancement Project consists of the construction of approximately 60 acres of new marsh in open water and the enhancement of approximately 53 acres of highly degraded marsh. Phase 2 is also located in Region 3, Terrebonne Basin, Terrebonne Parish, Louisiana, and has two sites. The first site is approximately 3,700 feet in length and is located in Section 1, Township 20 South, Range 13 East. The second site is approximately 12,800 feet in length and is located in Sections 2, 3 and 10, Township 20 South, Range 14 East.

Project Type: Authorized Use 1

Project Justification: The continued deterioration of broken marshes west of Brady Canal, from Lake Paige and Lost Lake northward to Carencro Bayou, will expose fragile (organic and floating) Penchant Basin freshwater marshes to catastrophic storm-related damage and/or increase tidal exchange and saltwater intrusion problems during the salty season. The proposed project will create marshes in open water areas occurring within existing marshes. This will reduce the wave fetch and decrease wave related erosion of the marshes located on the margins of these interior open water areas. The created marshes, along with proposed vegetative plantings, will also reduce storm surges and reduce the potential for storm-related marsh breaching.

Additionally, the proposed marsh creation will restore the hydrological regime to its original condition, thereby allowing "brown" river water to be introduced into an area of intermediate marshes north of Carencro Bayou. This will stimulate organic production and reduce the very rapid and recent loss of marsh in that area.

Phase 1 of the project consists of approximately 100 acres of new marsh creation in open water with 96 acres of marsh nourishment along the north shore of Lost Lake (21,300 feet in length by 300 feet wide). Marsh creation will be conducted along the submerged Bayou Mauvais Bois ridge west of Voss Canal, along the north shore of Lost Lake to the mouth of Bayou Decade. Vegetation will be initially planted on the marshes constructed in open water, but it will not be artificially maintained. Vegetative plantings may be replaced if initially unsuccessful and if recommended by planting experts. Smooth cordgrass (*Spartina alterniflora*) plantings are anticipated. Planting in marsh enhancement areas will not be required.

Phase 2 of the project consists of the construction of approximately 60 acres of new marsh in open water with approximately 53 acres of marsh nourishment along Crochet Canal (3,700 feet in length by 300 feet wide) and the west bank of Bayou Decade (12,800 feet wide by 300 feet wide). Vegetation will be initially planted on the marshes constructed in open water, but it will not be artificially maintained. Vegetative plantings may be replaced if initially unsuccessful and if recommended by the planting experts. Smooth cordgrass (*Spartina alterniflora*) plantings are anticipated. Planting in marsh enhancement areas will not be required.

Project goals include reducing shoreline retreat on the north shore of Lost Lake, preventing shoreline breaching and thereby restoring the hydrological regime to its original condition. By creating marsh in interior open water areas, wave generation, fetch, and associated wave-wind-induced marsh erosion will also be reduced. The project will also spur the introduction of "brown" water into an intermediate marsh area that has experienced substantial recent losses will be facilitated.

Project Cost Share: Burlington Resources, LLC, the landowner in the project area, has indicated a willingness to share 4% of the estimated project cost.

Duration: Three years

31. Lost Lake Shoreline Protection And Hydrologic Restoration (CWPPRA Nominee PPL19)

PPL19 PROJECT NOMINEE FACT SHEET
January 28, 2009

Project Name

Lost Lake Marsh Creation 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

Project Location

Region 3, Terrebonne Parish, southwestern Terrebonne Basin near Lost Lake

Problem

Significant marsh loss has occurred between Lake Pagie and Bayou DeCade to the point that little structural framework remains separating those two waterbodies. Northeast of Lost Lake, interior marsh breakup has resulted in large, interior ponds where wind/wave energy continues to result in marsh loss. 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) Prevent the coalescence of Bayou DeCade and Lake Pagie and extend the landbridge function of the North Lake Mechant Landbridge Project.
- 2) Address interior marsh loss with terraces and marsh creation.
- 3) Increase fresh water and sediment delivery to marshes north and 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 to the south. Features include:

- 1) 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 currently being built under the North Lake Mechant Landbridge Project. In addition, 150 acres of marsh will be created north of Bayou DeCade.
- 2) Terracing (approximately 30,000 linear feet or 16 acres) to reduce fetch in deteriorated marsh northeast of Lost Lake.
- 3) 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 structures with bays/gates.
- 4) The Penchant Basin Natural Resources Plan Project will provide an additional 500 cfs of freshwater flow into Brady Canal which will increase flows into Carencro Bayou north of Lost

Lake. An opportunity exists to increase freshwater and sediment delivery south of Carencro Bayou and to take advantage of excess fresh water north of Carencro Bayou by removing some of the plugs and fixed-crest weirs and installing structures with bays/gates.

Preliminary Project Benefits

- 1) The total acreage benefited directly would be 466 acres (450 acres of marsh creation/nourishment and 16 acres of terraces). Indirect benefits would occur over approximately 9,000 additional acres of marsh as a result of increased fresh water and sediment delivery.
- 2) The total net acres protected/created over the project life would be between 400-500 acres.
- 3) Background loss rates would be reduced by 50% in the marsh creation and marsh nourishment areas. Increased fresh water and nutrients would reduce marsh loss in the areas west and north of Lost Lake. The assumed reduction in marsh loss in those areas 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 Lake Pagie shoreline and the southern bank of Bayou DeCade.
- 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 westward. 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 estimated construction cost with a 25% contingency is approximately \$25,725,000.

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

Lost Lake Marsh Creation and Hydrologic Restoration



32. Chacahoula Basin Plan (Master Plan Measure, 3a-10)

This measure will implement the Chacahoula Basin Plan, developed by the Terrebonne Levee and Conservation District, to alleviate inundation issues in the Verret sub-basin. The Chacahoula Basin comprises approximately 107,200 acres bounded to the north by Louisiana Highway 1, to the south by Highway 182, to the west by Highway 662 and Highway 398, and to the east by Highway 311.

33. Freshwater Introduction Via Blue Hammock Bayou (Master Plan Measure, 3a-11)

This measure will increase the Atchafalaya River influence in lower Terrebonne Parish wetlands by increasing the hydraulic cross-section of Blue Hammock Bayou. The project will enhance and sustain marsh in an area between Four League Bay and Bayou Dularge, including the areas encompassing Lake Mechant and marshes north to Bayou Decade. Approximately 230 acres of marsh will also be created using dredged material from the channel during project implementation.

34. Bayou Terrebonne Ridge Restoration - Below Bush Canal

The ridge located along the eastern shoreline of Bayou Terrebonne below Bush canal will be restored using dredge material.

35. Bayou Dularge To Grand Pass Ridge Restoration

The ridge located along the southern bank of Bayou Dularge is to be restored from the area south of Mud Lake to Grand Pass.

36. Bayou Decade Ridge Restoration From Lake Decade To Raccourci Bay

The southern bank of Bayou Decade is to be restored from Lake Decade to Raccourci Bay.

37. Sediment Introduction At South Shore Of Sister Lake

Sediment is to be introduced for marsh creation on the south bank of Bayou Grand Caillou within Sister Lake and on the western shoreline of Hackberry Lake.

38. Rock (Breakwaters) For Whiskey Island

Rock breakwaters are to be constructed along the western third of Whiskey Island. This project will be planned and designed to function with CWPPRA project TE-47

39. Barrier Island Restoration- Raccoon Island

Barrier island restoration, including beach, dune and back-marsh platform restoration on Raccoon Island will include placement of 180 cubic yards of sand per linear foot of island per LCA.

40. Barrier Island Restoration- Whiskey Island

Barrier island restoration, including beach, dune and back-marsh platform restoration on Whiskey Island will include placement of 158 cubic yards of sand per linear foot of island per LCA.

41. Barrier Island Restoration- Trinity Island

Barrier island restoration, including beach, dune and back-marsh platform restoration on Trinity Island will include placement of 158 cubic yards of sand per linear foot of island per LCA.

42. East Island Dune And Marsh Restoration (CWPPRA Nominee PPL19)

PPL19 PROJECT NOMINEE FACT SHEET

January 28, 2009

Project Name: East Island Dune and Marsh Restoration

Coast 2050 Strategy: Coastwide Common Strategies-Dedicated Dredging to Create, Restore, or Protect Wetlands; Vegetative Planting; Utilize Offshore Sand and Sediment Resources.
Regional Ecosystem Strategies- Restore and sustain marshes- #8. Dedicated delivery and/or beneficial use of sediment for marsh building by any feasible means; Restore barrier islands and Gulf shorelines-#14. Restore and maintain the barrier islands and gulf shoreline such as Isles Dernieres, Timbalier barrier island chains, Marsh Island, Point au Fer and Cheniere Au Tigre. Isles Dernieres Shorelines Mapping Unit Strategies- #33. Protect bay/gulf shorelines.

Project Location: Coast 2050 Region 3, Terrebonne Basin, Terrebonne Parish, Terrebonne mapping unit, 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. They ensure the estuaries behind them are low energy environments capable of supporting wetlands and emerging deltas. East/Trinity Island is part of the Isles Dernieres barrier island chain, one of the most rapidly deteriorating barrier shorelines in the U.S. Previous restorations did not provide for extensive beach and back barrier marsh platforms inhibiting a sustainable landward migration. This easternmost project area encounters considerable wave action and material movement not only on the Gulf shore, but also on the backside of the island.

Goals:

- 1) provide a backbarrier platform to enable sustainable and successful island migration
- 2) extend the life of this barrier island by increasing its width
- 3) create about 272 acres of intertidal marsh using new dredged material and vegetative plantings
- 4) fortify/protect the platform and marsh by creating 20 acres of dune, 10 acres of supratidal habitat
- 5) protect Terrebonne estuary and vegetated wetlands against direct exposure to the Gulf of Mexico
- 6) add sand to this sand-starved barrier island system

Proposed Solution: Dredged material will be placed on the backside of the island creating additional backbarrier marsh and a dune will be created along the Gulf shoreline. The former will provide a stable backbarrier platform onto which the island can migrate landward, while the latter will provide additional sand for redistribution by currents and waves along the entire island's Gulf shore.

Preliminary Project Benefits: This project directly and indirectly benefits about 302 acres of barrier island habitat. Approximately 180 acres of barrier island habitat would be created/protected over the 20-year project life. The anticipated loss rate reduction throughout the area of direct benefits over the project life is estimated to be 25-49%. The project will maintain and restore structural components of the coastal ecosystem (barrier island). This project will provide a synergistic effect on previously constructed CWPPRA projects (TE-20, TE-24, and TE-37) and other restoration projects on the Isles Dernieres.

Identification of Potential Issues: Endangered species coordination.

Preliminary Construction Costs: (including + 25% contingency) \$ 19 million

Preparers of Fact Sheet:

Brad Crawford, EPA Region 6, (214) 665-7255, crawford.brad@epa.gov
Ken Teague, EPA Region 6, (214) 665-6687, teague.Kenneth@epa.gov

East Island Dune and Marsh Restoration

Marsh Creation = 234 acres
Sand Volume = 946,000 CY

Toe to Fill = 94 acres
Sand Volume = 380,000 CY

750 ft marsh platform *TO RISE ABOVE*

Dune Fill = 30 net acres
Sand Vol = 260,000 CY



0 2056ft

Louisiana Department of Natural Resources

43. Barrier Island Restoration- Wine Island

Barrier island restoration, including beach, dune and back-marsh platform restoration on Wine Island. NOTE: The USACE currently views this project as outside the authorized scope of LCA.

44. Barrier Island Restoration- West Timbalier

Barrier island restoration to West Timbalier Island will include placement of 190 cubic yards of sand per linear foot of island per LCA.

45. Barrier Island Restoration- East Timbalier

Barrier island restoration to East Timbalier Island will include placement of 195 cubic yards of sand per linear foot of island per LCA.

46. Wine Island Rookery

Wine Island is the second largest brown pelican nesting ground within the barrier island system. Barrier island restoration of Wine Island will include installation of a rock dock around the perimeter of the original island to armor the shoreline. Dredge material from the HNC will then be placed within the structure to increase the area of the island. Vegetation will be planted throughout the island and the island will be used as a rookery.

47. Ship Shoal: Whiskey West Flank Restoration (TE47)

Louisiana Coastal Wetlands Conservation and Restoration Task Force
January 2002



Ship Shoal: Whiskey West Flank Restoration (TE-47)

Project Status

Approved Date: 2002
Project Area: 398 acres
Net Benefit After 20 Years: 182 acres
Project Type: Barrier Island Restoration

Cost: \$39 million
Status: Engineering and Design

Location

The project is located on Whiskey Island, a barrier island in the Isles Dernieres chain in south Terrebonne Parish, Louisiana. The Whiskey West Flank project will extend Whiskey Island westward.

Problems

The Isles Dernieres barrier island chain, which is considered one of the most rapidly deteriorating barrier shorelines in the United States, is losing its structural functions for the coastal/estuarine ecosystem. Chief among these is the chain's storm buffering capacity and the protection it provides human populations, oil and gas infrastructure, inland bays, estuaries, and wetlands. Chain breakup has resulted from both major storm actions and, due to human alterations, the loss of nourishing sediment from the natural system. Whiskey Island changes from 1978 to 1988 include the average loss of 31.1 acres per year.



This project will restore approximately 387 acres of barrier island habitat into the island's western flank pictured above.

For more project information, please contact:

Restoration Strategy

The project's objectives include: 1) restoring the integrity of the west flank of Whiskey Island to retain its structural function; 2) adding new offshore sediment into the west flank; and 3) restoring roughly 387 acres of barrier island habitat into the island's western flank.

One approach to the problem includes mining and importing offshore Ship Shoal sediment into the Louisiana coastal ecosystem to increase the sediment supply and strengthen island formation. Other approaches involve rebuilding the natural structural framework within the coastal ecosystem to provide for separation of the gulf and the estuary, and creating a continuous protective barrier for back bays and inland marshes to reduce wave energies, thereby helping to reduce land loss and restore the longshore transport system. One final approach towards meeting these goals is to provide a unique and sustainable barrier island habitat for numerous biological species, several of which are endangered, in areas that are presently open water.

Ship Shoal sand would be mined by a cutterhead hydraulic dredge and/or hopper dredge. It would then be transported approximately 8 miles to Whiskey Island. Restored areas will include: 1) 52 acres of 7-foot high, 150-foot wide dunes; 2) 114 acres of above-tide habitat at an elevation of 4 feet; 3) 208 acres of intertidal habitat at an elevation of 2 feet; 4) 8 acres of subtidal habitat. All areas will be planted and have sand fencing placed in order to trap wind-blown sediment.

Details for pipes and booster pumps or additional equipment for hopper dredge operations will be analyzed during engineering and design. Conventional equipment is expected to be used for earth moving to obtain island design elevations, widths, and slopes. Approximate design features for the west flank restoration include beach platform, dune, and marsh platform.

Maintenance is not proposed for this project. If a disastrous storm event should cause significant damage, a restoration project would be proposed.

Progress to Date

This project was selected for Phase I (engineering and design) funding at the January 2002 Breaux Act Task Force meeting. It is included as part of Priority Project List 11.



Federal Sponsor:
U.S. Environmental Protection Agency
Baton Rouge, LA
(214) 665-6722



Local Sponsor:
Louisiana Department of Natural Resources
Baton Rouge, LA
(225) 342-7308

www.LaCoast.gov

Ship Shoal: Whiskey West Flank Restoration (TE-47)

Project Boundary



USGS
science for a changing world



Project Location



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

Background Imagery:
Thematic Mapper Satellite Imagery 2000

Map Date: March 10, 2002
Map ID: 2002-11-223



48. West Raccoon Island Shoal Enhancement And Protection (CWPPRA Nominee PPL19)

PPL19 PROJECT NOMINEE FACT SHEET
January 28, 2009

Project Name:

West Raccoon Island Shoal Enhancement & Protection

Coast 2050 Strategy:

Regional: [14.] Restore and maintain barrier islands and gulf shorelines

Mapping Unit: [33.] Isles Dernieres - Protect Bay/Gulf Shorelines

Project Location:

Region III, Terrebonne Basin, Terrebonne Parish, Isle Dernieres Barrier Islands

Problem:

The Isles Dernieres barrier island chain is experiencing some of the highest rates of erosion of any coastal region in the world. The western half of Raccoon Island is currently an emergent sand shoal which, for the last several years, has become ephemeral in nature. The shoal is either completely denuded of sand (completely submerged) or severely reduced in size each time a tropical event impacts the island. This lack of sustainability prevents the establishment of woody and herbaceous vegetation from colonizing and providing protection for that part of the island. Lack of vegetation also severely limits the habitat usage of critical avian and waterfowl species which have successfully adapted to the eastern half of the island.

Goals:

The goals of the project are to provide protection, encourage the growth, and stabilize conditions on the sand shoal area of Raccoon Island.

Proposed Solutions:

Project features will include the construction of offshore, segmented rock breakwaters extending from existing breakwater #15 westward to the end of the sand shoal and the building of a terminal groin at the end of the last proposed breakwater. Vegetative plantings, both herbaceous and woody, will follow the construction of the breakwaters.

Preliminary Project Benefits:

It is anticipated that approximately 98 acres of the sand shoal will be protected and directly benefit from this project. Of that acreage, approximately 75 % (74 ac) will revert to supratidal vegetative habitat over the life of the project. An additional 31 acres of tidal and supratidal shoal area are expected to accrue between the proposed breakwaters and existing shoreline as a direct result of the segmented breakwaters. Thereby the rate of shoreline loss on the gulf side of the shoal is expected to cease along 50% of its length and reverse on the remaining 50%. The proposed project will have a significant synergistic effect on the existing Raccoon Island Shore Protection/Marsh Creation (TE-48) and Raccoon Island Demonstration (TE-29) Projects.

Identification of Potential Issues:

There are no potential issues anticipated with this proposed project.

Preliminary Construction Costs:

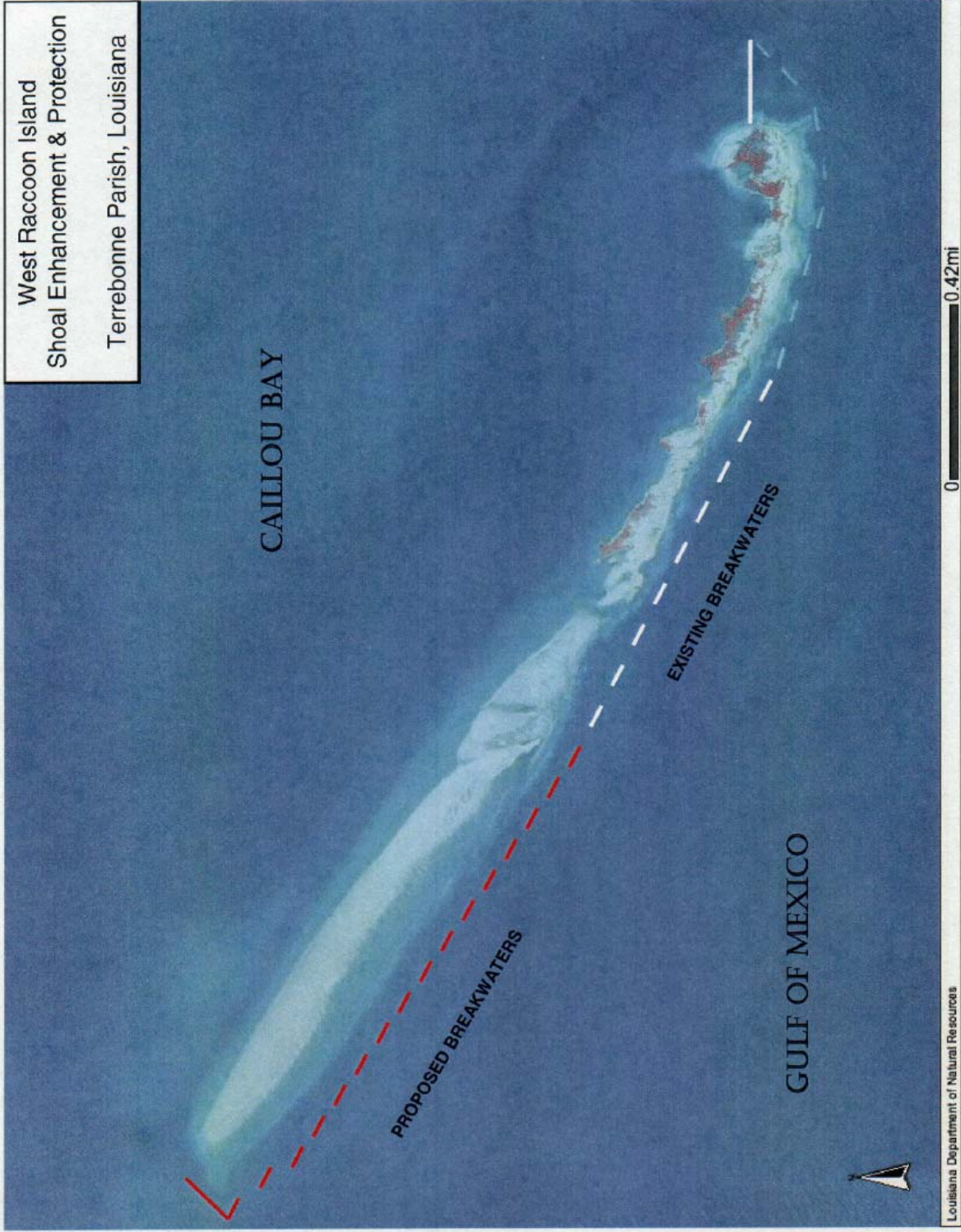
The anticipated construction cost, with contingency, is \$9,700,000.

Preparer(s) of Fact Sheet:

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Mike Carlross, (337) 373-0032, mcarrloss@wlf.louisiana.gov

West Raccoon Island
Shoal Enhancement & Protection
Terrebonne Parish, Louisiana




0 0.42mi

Louisiana Department of Natural Resources

49. Whiskey Island Back Barrier Marsh Creation (CWPPRA TE50)

Louisiana Coastal Wetlands Conservation and Restoration Task Force
June 2004



Whiskey Island Back Barrier Marsh Creation (TE-50)

Project Status

Approved Date: 2004 **Project Area:** 1,038 acres
Approved Funds: \$2.8 M **Total Est. Cost:** \$21.8 M
Net Benefit After 20 Years: 272 acres
Status: Engineering and Design
Project Type: Barrier Island Restoration/Marsh Creation

Location

Whiskey Island, which is one of five islands that make up the Isles Dernieres barrier island chain, is located 18 miles southwest of Cocodrie in Terrebonne Parish, Louisiana. The island is surrounded by Coupe Colin to the west, Whiskey Pass to the east, Lake Pelto, Caillou Boca, and Caillou Bay to the north, and the Gulf of Mexico to the south.

Problems

Gulfside and bayside erosion has resulted in the narrowing of Whiskey Island (and the entire Isles Dernieres chain) as the two shorelines migrate toward each other, resulting in a 68% decrease in average width for the Isles Dernieres. Within 100 years, the entire subaerial portion of the Isles Dernieres barrier island system is expected to disappear except for small land fragments associated with the western end of Whiskey Island and the eastern end of East Island; however, with some estimates, the Isles Dernieres are projected to disappear much earlier, in 2017. Other predictions suggest that, without restoration, the island will become subaqueous sand shoals between 2007 and 2019.

Another CWPPRA restoration project, Whiskey Island Restoration (TE-27) - which included dredging and placement of dredge material, vegetative planting, and sand fencing - was completed there in June 2000.

Restoration Strategy


The goal of this project is to increase the longevity of the previously restored and natural portions of the island by increasing the island's width. Increasing the island's width will help to retain sand volume and elevation. Approximately 300 acres of intertidal, back barrier marsh will be created by semiconfined disposal and placement of dredged material. The dredged material is expected to come from a sediment source near the island. A minimum of six 1-acre tidal ponds and 10,000 feet of tidal creeks will be constructed. The area will be planted with smooth cordgrass (*Spartina alterniflora*), a native marsh plant valued for its ability to colonize and protect fragile marsh soil.

Progress to Date


The Louisiana Coastal Wetlands Conservation and Restoration Task Force approved funding for engineering and design at the January 2004 Task Force meeting.

This project is on Priority Project List 13.

For more project information, please contact:



Federal Sponsor:
U.S. Environmental Protection Agency
Dallas, TX
(214) 665-6722





Local Sponsor:
Louisiana Department of Natural Resources
Baton Rouge, LA
(225) 342-7308

www.LaCoast.gov



In this aerial view of Whiskey Island facing north, the island's Gulf of Mexico shoreline, as well as its back barrier marsh, is visible.

Whiskey Island Back Barrier Marsh Creation (TE-50)

-  Marsh Creation*
-  Project Boundary

*denotes proposed features



Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Background Imagery:
1998 Digital Orthophoto Quarter Quadrangle
Map Date: January 30, 2004
Map ID: USGS-NWRC 2004-11-01-40
Data accurate as of: July 20, 2004



50. Beach And Back Barrier Marsh Restoration, East And Trinity Islands (CIAP Tier 2)

Entity/Individual Nominating the Project: Terrebonne Parish Consolidated Government

Contact Information:

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Director of Public Works
Terrebonne Parish Consolidated Government
P.O. Box 2768
8026 Main Street
Houma, LA 70361
(985) 873-6405 (985) 873-6409 (fax)
allevron@tpcg.org

Total CIAP Funds Proposed: \$20,000,000

Parish CIAP Funds Proposed: \$0

State CIAP Funds Proposed: \$20,000,000

Infrastructure Funds Proposed: \$0

Description and Location of Project: The proposed Beach and Back Barrier Marsh Restoration, East and Trinity Islands would restore a total of 146 acres of beach and dune habitat and 533 acres of back barrier marsh. East and Trinity Islands are two of five islands that make up the Isles Dernieres barrier island chain. The proposed project is in the Terrebonne Basin of CWPPRA Region 3, Terrebonne Parish, approximately 38 miles south of Houma, Louisiana. The Gulf of Mexico lies to the south.

Project Type: Authorized Use 1

Project Justification: 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, and Trinity Island lost 38.4 feet per year. It is anticipated that implementation of this project will result in a reduction in the current land loss rate of 25%. 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. Although the New Cut restoration (TE-37) CWPPRA project will begin construction this year, partial filling 276 of the breach on the eastern end of East Island is a contracting additive alternate, and will be accomplished only if sufficient project funds are available. This is highly unlikely given the recent spikes in constructions costs. Additionally, the TE-37 project does not provide for extensive beach and back barrier marsh restoration on the eastern end behind the breach, or for back barrier marsh and beach 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 due to Wine Island Pass.

The overall project goals are to fortify and extend the lives of these two barrier islands and capitalize on the success of previous CWPPRA barrier island restoration projects. Specific project goals include the introduction of new sediment into this sediment starved environment; extension of the lives of the barrier islands by increasing their widths; providing a back barrier platform to enable successful island migration; and protecting the Terrebonne estuary and vegetated wetlands against the direct exposure to the Gulf of Mexico. This project was presented at the CWPPRA Task Force Meeting in January 2006, during discussions for Priority Project List 16 proposals, but was not selected for continued investigation. No engineering and design funds have been spent on this project.

Project Cost Share: None

Duration: Three years

51. Enhancement Of Barrier Island Vegetation Demonstration (CWPPRA TE53)

Louisiana Coastal Wetlands Conservation and Restoration Task Force

January 2008



Enhancement of Barrier Island Vegetation Demonstration (TE-53)

Project Status

Approved Date: 2006 **Project Area:** TBD
Total Est. Cost: \$919,599 **Status:** Planning
Net Benefit After 20 Years:
Project Type: Demonstration project

Location

Two possible projects sites in Region 3 are the Timbalier Island Dune and Marsh Restoration project (TE-40) that installed nearly 110,000 plants, eight different species in 2005 and an additional 40,000 plants in 2006, and the New Cut Dune and Marsh Restoration (TE-37) which installed approximately 40,000 plants, 9 different species in the summer of 2007. Additional project locations are available in Regions 2 and 3.

Problems

Barrier Islands provide critical habitat and are the first line of defense to not only day-to-day coastal erosion but also to the destructive forces of major storm events. There remains a critical need to develop cost-effective improvements to existing restoration methodologies that will enhance the successful establishment and spread of vegetation in these important restoration projects. Developing methodologies to enhance vegetation establishment and growth in barrier island restoration projects is important in this very stressful environment because healthy vegetative cover traps, binds, and stabilizes sand and sediment, thereby improving island integrity during storm and overwash events.

Progress to Date

The project plan is under development. This project is on Priority Project List 16.

For more project information, please contact:

 <p>Federal Sponsor: Environmental Protection Agency Dallas, TX (214) 665-6608</p>	 <p>Local Sponsor: Louisiana Department of Natural Resources Baton Rouge, LA (225) 342-7308</p>
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Timbalier Island vegetative plantings.


Restoration Strategy

The purpose of this demonstration project is to test several technologies and/or products to enhance the cost-effective establishment and growth of key barrier island and salt marsh vegetation. Humic acid and broadcast fertilization regimes will be applied. The humic acid amendment and broadcast fertilization regime techniques are intended to “jump start” and facilitate the rapid establishment and expansion of vegetation. Humic acid benefits will be demonstrated in both intertidal and supratidal plantings, whereas broadcast fertilization benefits will only be demonstrated in supratidal plantings. Each product (humic acid and fertilizer) will be commercially available and off-the-shelf. Enhancing the establishment of woody vegetation (black mangrove and groundsel bush) will be achieved via high-density dispersal techniques of propagules and seeds, a cost-saving alternative to planting container-grown transplants. All treatment test sections and reference planting areas will be visually inspected and sampled quarterly (plant and soil variables) and compared to the reference area in order to develop recommendations for future planting projects.

52. Raccoon Island Shoreline Protection/Marsh Creation (CWPPRA TE48b)

Louisiana Coastal Wetlands Conservation and Restoration Task Force

October 2007 (rev.)




Raccoon Island Shoreline Protection/ Marsh Creation (TE-48)

Project Status


Approved Date: 2002 **Cost:** \$10.6 million
Project Area: 502 acres **Status:** Construction
Net Benefit After 20 Years: 167 acres
Project Type: Shoreline Protection and Marsh Creation

Location

The project is located in the Terrebonne Basin on the western-most island of the Isles Dernieres barrier island chain in Terrebonne Parish, Louisiana.



Rock breakwater construction for the prior demonstration phase of this project was completed on the east end of the island in June 1997. Taken immediately after construction was complete, this 1997 photograph shows no sand behind the breakwaters.



Sand deposits or "tombolos" have developed behind the breakwaters that protect and enhance the island. A less dramatic, however still positive effect, is expected to occur behind the 8 additional breakwaters being constructed to the west of the existing breakwaters.

Problems

The Isles Dernieres barrier island chain is experiencing some of the highest erosion rates of any coastal region in the world. Raccoon Island is experiencing shoreline retreat both gulfward and bayward, threatening one of the most productive wading bird nesting areas and shorebird habitats along the gulf coast.

Restoration Strategy


An existing demonstration project on the eastern end of the island, Raccoon Island Breakwaters Demonstration project (TE-29), has proven that segmented breakwaters can significantly reduce, and perhaps even reverse, shoreline erosion rates. The primary goal of this project is to protect the Raccoon Island rookery and seabird colonies from the encroaching shoreline by: 1) reducing the rate of shoreline erosion along the western, gulfward side and 2) extending the longevity of northern backbay areas by creating 60 acres of intertidal wetlands that will serve as bird habitat.

This project has been separated into two construction phases, Phase A and Phase B. Phase A includes the construction of eight additional segmented breakwaters gulfward of the island and immediately west of the existing breakwaters demonstration project and an eastern groin that will connect existing Breakwater No. 0 to the island. Phase B involves the construction of a retention dike along the northern shore to create a back bay enclosure that will be filled with sediments dredged from the bay and/or gulf, followed by vegetative plantings.


Progress to Date

This project was selected for engineering and design funding at the January 2002 Breaux Act Task Force meeting. Construction funding for Phase A was approved in October 2004. Request for Phase B construction funding is anticipated to occur in January 2008. This project is on Priority Project List 11.

For more project information, please contact:



Federal Sponsor:
Natural Resources Conservation Service
Alexandria, LA
(318) 473-7756

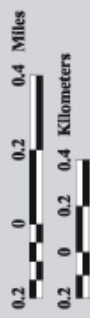


Local Sponsor:
Louisiana Department of Natural Resources
Baton Rouge, LA
(225) 342-7308

www.LaCoast.gov

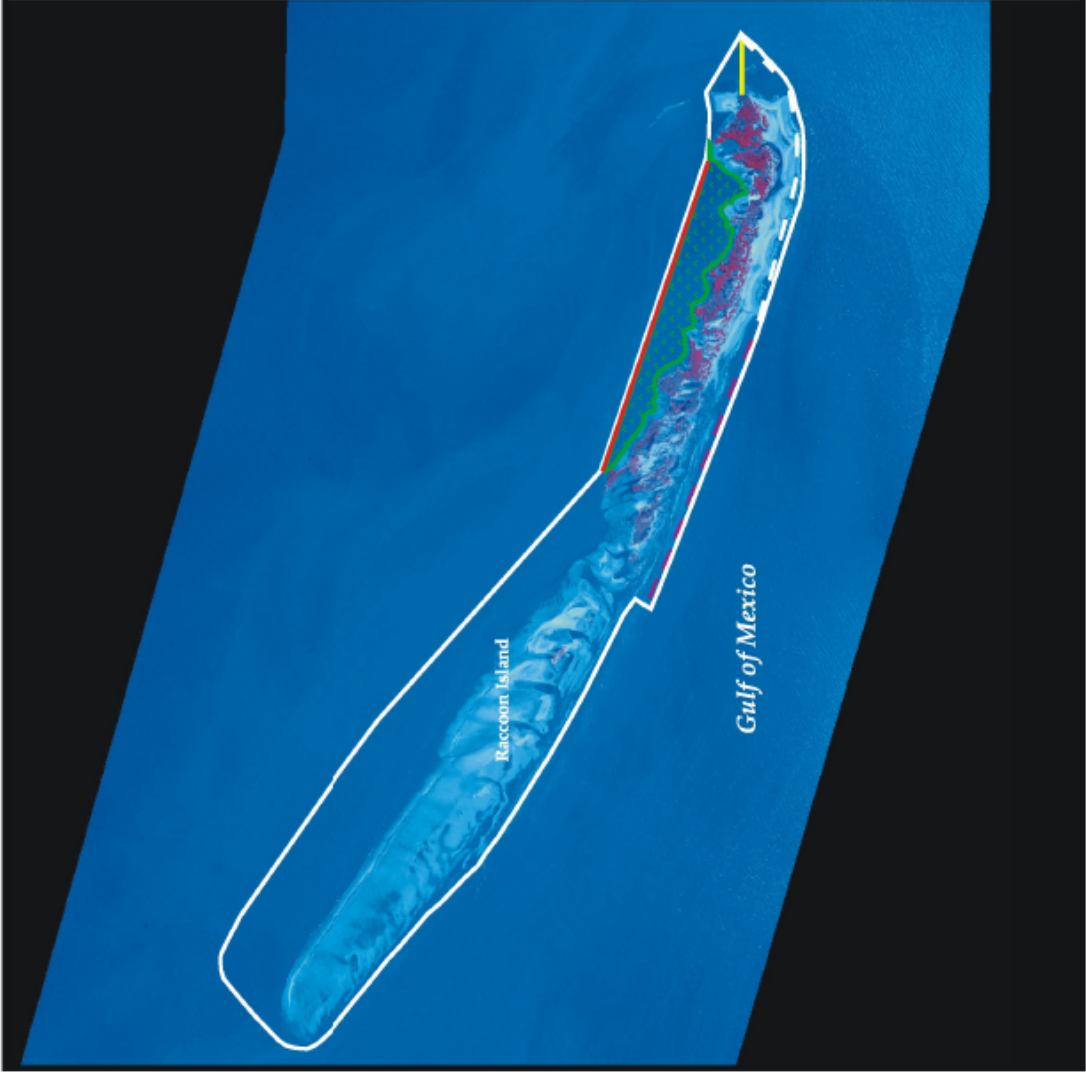
Raccoon Island Shoreline Protection/ Marsh Creation (TE-48)

- Existing Breakwater
 - Project Boundary
 - Phase A**
 - Breakwater *
 - Groin *
 - Phase B**
 - Retention Dike *
 - Vegetative Plantings and Dredged Backfill *
- * denotes proposed features



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

Background Imagery:
 2002 Aerial Photography
 Map Date: January 5, 2005
 Map ID: USGS-NWRC 2005-11-0089
 Data accurate as of: January 3, 2005



53. Coastal Bay Sediment Trapping (CWPPRA Nominee PPL18, R3-TE-09)

R3-TE-09

PPL 18 PROJECT NOMINEE FACT SHEET
2/20/2008

Project Name

Coastal Bay Sediment Trapping

Coast 2050 Strategy

Region 3. Strategy 12. Restore and maintain the Isle Dernieres and Timbalier barrier island chains

Project Location

Region 3, Terrebonne Basin, Lafourche Parish

Problem

The Isles Dernieres and Timbalier barrier island chains have severely eroded. While efforts have been underway to restore what remains of the islands, the gaps between the islands continue to enlarge whereby reducing the effectiveness of the islands to provide storm protection. For example, the gaps between the Isles Dernieres and Bayou Lafourche total 14.5 miles wide, with individual island gaps as much as 6 miles wide.

Proposed Project Features

The project will construct an array of rock segments designed to trap loose sands at the gulf/bay interface.

Goals

The purpose of the project is to promote sediment trapping and retention of material in the coastal bays along the gaps of the existing barrier islands, to increase the gulf-front barrier storm protection, reduce the cross-section of the barrier island gaps, reduce the tidal prism within coastal bays, and create additional barrier island habitat.

Preliminary Project Benefits

The project will increase the cross-section of coastal barrier protection and eventually create up to 155 acres of new barrier island habitat.

Identification of Potential Issues

None identified

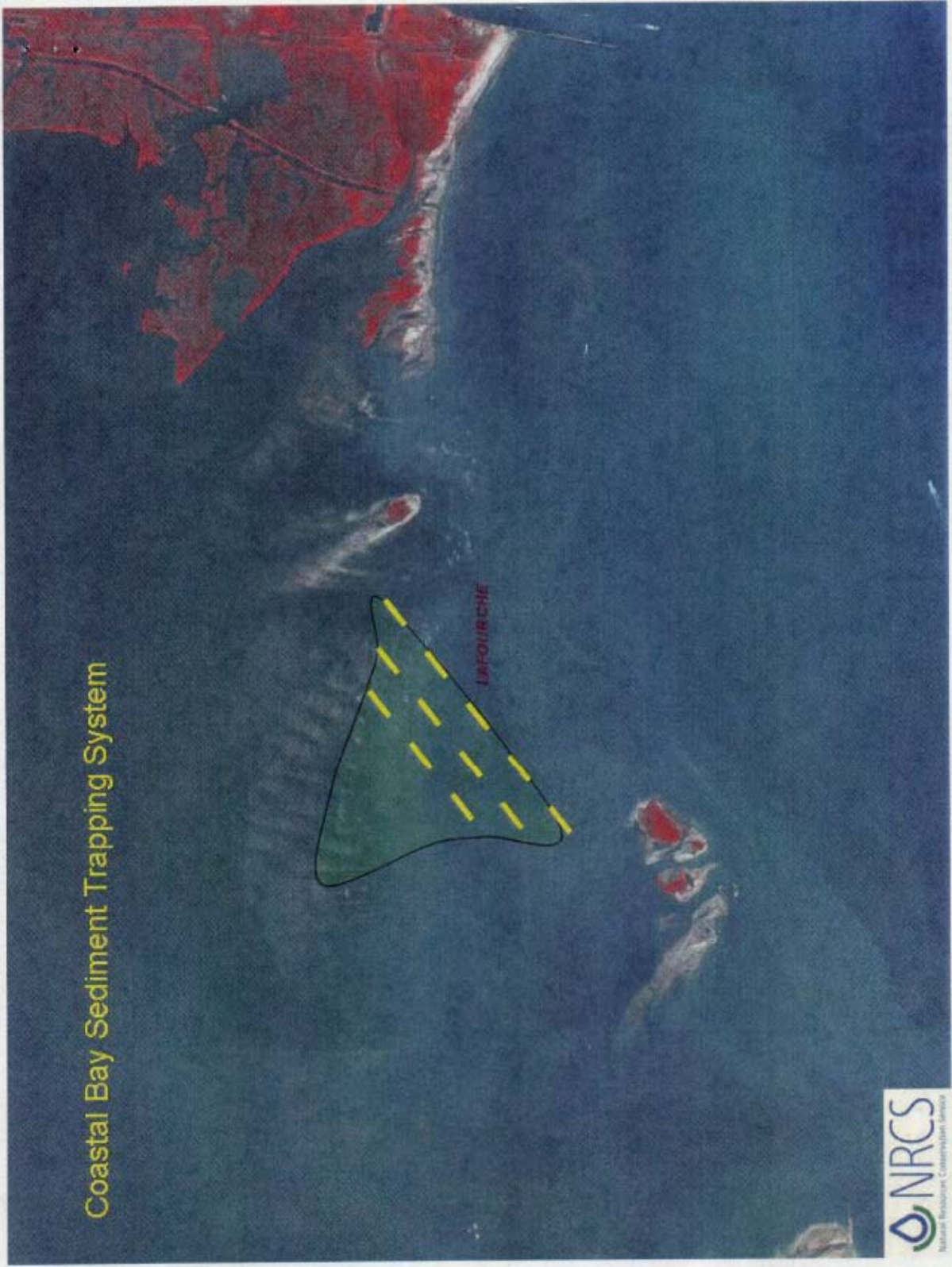
Preliminary Construction Costs

\$3 million

Preparer of Fact Sheet


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

Coastal Bay Sediment Trapping System



54. West Belle Pass Barrier Headland Restoration (CWPPRA TE52)

Louisiana Coastal Wetlands Conservation and Restoration Task Force
January 2008



West Belle Pass Barrier Headland Restoration (TE-52)

Project Status

Approved Date: 2006 **Project Area:** 542 acres
Total Est. Cost: \$2,694,363
Net Benefit After 20 Years: 299 acres
Status: Engineering and Design
Project Type: Barrier headland and Marsh creation

Location


The project is located along the Chenier Caminada headland to the west of West Belle Pass, at the southeastern edge of Timbalier Bay in Lafourche Parish, Louisiana.

Problems

This headland experiences some of the highest shoreline retreat rates in the nation, measuring over 100 feet a year in some locations. As the gulf encroaches upon the shoreline, sand is removed and the headland erodes. What was once a continuous shoreline spanning several miles has been reduced to less than half its original length. Furthermore, Hurricanes Katrina and Rita removed most of the emergent headland and dunes west of the pass. This headland helps provide protection to interior marshes and the Port Fourchon area; however, its continued degradation threatens the fragile bay habitat and infrastructure it once protected.

Restoration Strategy

This project will reestablish the West Belle headland by rebuilding a large portion of the beach, dune, and back barrier marsh that once existed. Approximately 9,300 feet of beach and dune will be rebuilt using nearly 2 million cubic yards of dredged sand, and 150 acres of marsh habitat will be rebuilt using nearly 1 million cubic yards of dredged material. Native vegetation will be planted upon construction to help stabilize the rebuilt marsh and dune habitat.




This is a picture of the vulnerable western Caminada headland.

Progress to Date


This project was approved for engineering and design in October 2006, which is anticipated to be completed in 2009.

This project is on Priority Project List 16.

For more project information, please contact:

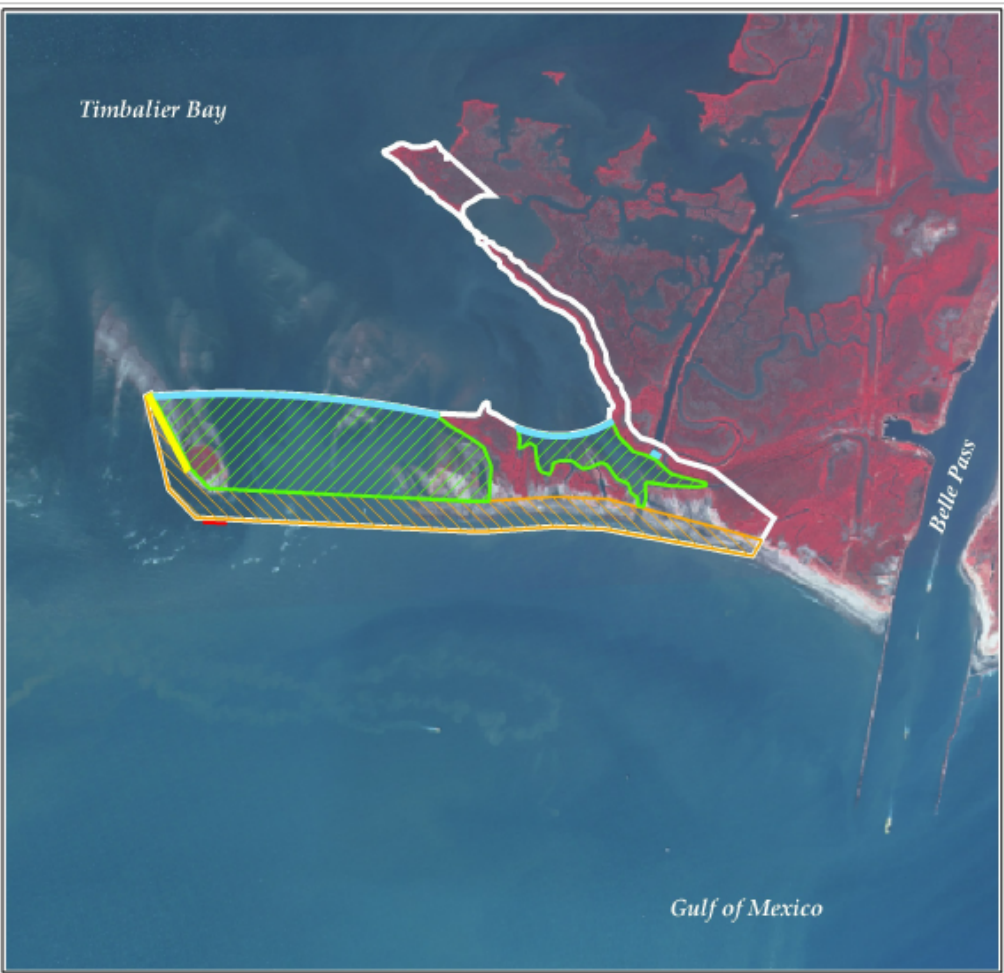


Federal Sponsor:
National Marine Fisheries Service
Baton Rouge, LA
(225) 389-0508



Federal Sponsor:
U.S. Army Corps of Engineers
New Orleans, LA
(504) 862-1597

www.LaCoast.gov

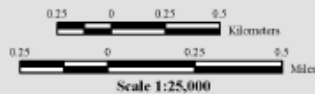


West Belle Pass Barrier Headland Restoration Project



-  Crested Dune *
-  Containment *
-  Breakwater *
-  Marsh Creation *
-  Dune/Beach Fill *
-  Project Boundary *

* denotes proposed features



Map ID: USGS-NWRC 2006-11-0485
Map Date: July 19, 2006



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

Image Source:
2005 Digital Orthophoto Quarter Quadangle

55. Create Oyster Reef As An Extension To Pointe Au Fer

Construction of an artificial habitat on which oysters can attach themselves and create an erosion resistant structure.

56. Barrier Shoreline Restoration Pointe Au Fer Island

Placement of sand on western Point Au Fer Island encompassing CWPRA's TE22 Project: "Point Au Fer Canal Plugs". The large-scale of this project means that the placement of sand will need to be completed in several phases.

57. Dredge Bayou Terrebonne From Company Canal To Humble Canal

Dredging Bayou Terrebonne will result in an increase in the amount of freshwater available to eastern Terrebonne Parish marshes. The road bridge that crosses Company Canal/Bayou Terrebonne is due to be replaced by the LADOTD. Replacement of the bridge should account for an increased flow of water in the channel below that would result from this project. Environmental structures placed as part of the Morganza to the Gulf Hurricane Protection Project should minimize flooding and excess marine influence in these fragile areas.

58. Dredge Minors Canal (GIWW To Lake Decade)

Dredge Minors Canal to increase the volume of freshwater conveyed along the GIWW from the Atchafalaya River. This will allow a greater volume of freshwater to flow through the GIWW to be supplied to the Terrebonne wetlands. Dredged material will be placed north of Falgout Canal; between Bayou De Large and the GIWW, east of Lake Hatch for the purpose of marsh creation.

59. Connect St. Louis Canal To Bayou Petit Caillou

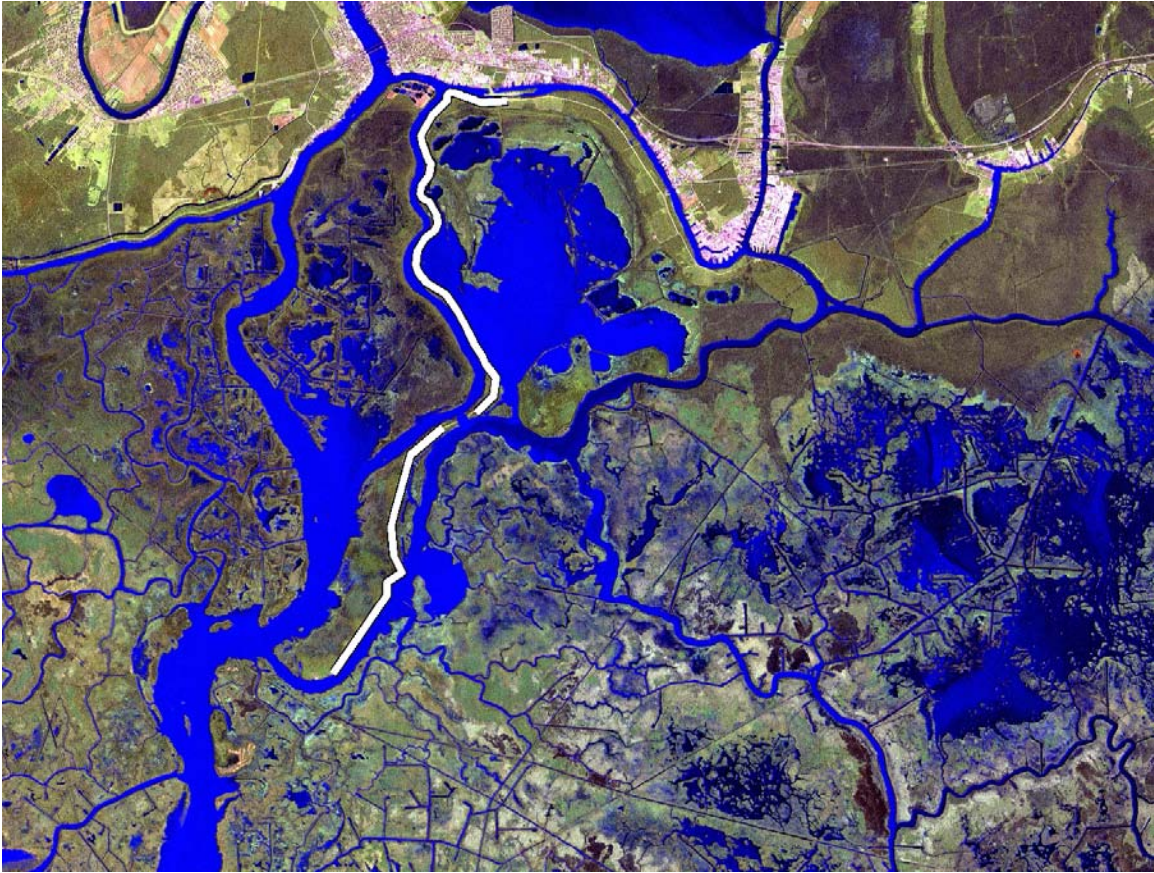
The integrity of St. Louis Canal will be restored and conveyance of freshwater will be increased to the Terrebonne Wetlands. The capacity of the existing water control structure will be increased to allow a greater volume of water to pass from Bayou Petit Caillou to St. Louis Canal.

60. Remove Constrictions/Dredge GIWW From Bayou Black To Bayou Wallace

A number of constrictions will be removed from the GIWW to increase the volume of freshwater conveyed along the GIWW from the Atchafalaya River. Dredge the GIWW from Bayou Black to Bayou Wallace to increase the volume of freshwater conveyed along the GIWW from the Atchafalaya River. This will allow a greater volume of freshwater to flow through the GIWW to be supplied to the Terrebonne wetlands.

61. Break In Avoca Guide Levee, North Of Horse Shoe To Convey Freshwater To Terrebonne Marshes

This project proposes to make a break along Avoca Island Levee, where the levee intersects Bayou Chene/Bayou Penchant. This break in the levee would facilitate more freshwater to move eastward through Bayou Penchant in addition to convey freshwater through GIWW (refer to map). Currently, approximately 10,000CFS flows through Avoca Island Cutoff Channel to Bayou Chene when Atchafalaya River is approximately 500,000CFS at Simmesport. This is the most inefficient way of moving freshwater eastward. The proposed break along the levee would provide more freshwater to the eastern Terrebonne Marshes.



62. **Dredge Company Canal To Convey Freshwater Flow To Terrebonne Marshes**
Dredging Company Canal between the GIWW and Bayou Terrebonne will result in an increase in the amount of freshwater available for eastern Terrebonne Parish marsh sustainability.

63. **Marsh Restoration Southwest Of Four League Bay (Phased Implementation)**
Use of material dredged from the Atchafalaya River to create marsh on Point Au Fer Island.

64. Carencro Bayou Freshwater Introduction (CWPPRA Nominee PPL18, R3-TE-06)

R3-TE-06

Carencro Bayou Freshwater Introduction Project

Coast 2050 Strategies

- Increase transfer of Atchafalaya Water to lower Penchant Basin tidal marshes
- Lower water levels in upper Penchant Basin marshes

Project Location:

Region 3, Terrebonne Basin, Terrebonne Parish, Penchant Basin

Problem:

The continued subsidence and loss of tidal marshes and ridges which form the southern boundary of the upper Penchant Basin freshwater floating marshes will result in a substantial risk to survival of those floating marshes due to increased tidal action, saltwater intrusion and storm damage. Increasing the seasonal supply of freshwater to invigorate those marshes is part of the strategy for maintaining that critically important ecosystem feature (in combination with the North Lake Mechant Landbridge Project, Brady Canal Project, and the Penchant Basin Project).

Goals:

1. Reduce loss of rapidly deteriorating tidal marshes in area between Lost Lake and Lake Mechant.

Proposed Solution:

Discharge additional freshwater into Little Carencro Bayou from oil-field canal system extending southward from Bayou Penchant. This could be achieved by construction of the following features.

1. Bucket dredge dead-end canal 1,450 feet southward to connect to dead-end section of Little Carencro Bayou.
2. Install a gated water control at the north end of the Little Carencro Bayou dead end to preclude saltwater intrusion into oil-field canal system to the north.
3. Clean-out mud and debris in dead-end section of Little Carencro Bayou .
4. Repair spoil bank breaches along oil-field canals and Little Carencro Bayou to improve delivery of freshwater to intended tidal marshes and to prevent floating marsh "blow-outs."

This project is a conceptual project, and further field work is needed to assess the number and nature of project features, and to more fully coordinate among all involved landowners.

Preliminary Project Benefits:

- 1) *What is the total acreage benefited both directly and indirectly?* - Undetermined
- 2) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (<25%, 25-49%, 50-74%, and >75%)?* Undetermined
- 3) *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, chenieres, etc?* This project would conserve rapidly deteriorating marsh

which has replaced the hydrologic barrier function once provided by the subsided Mauvois Bois Ridge (which once separated the floating freshwater marshes from the tidal marshes to the south).

- 4) *What is the net impact of the project on critical and non-critical infrastructure?*
The project would help to protect mineral exploration facilities in the area.
- 5) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* The proposed project would have a synergistic benefit with the authorized North Lake Mechant Landbridge Project, the Penchant Basin Plan Project, and the constructed Brady Canal Project.

Identification of Potential Issues

- Maintenance of canal spoil banks.
- Feasibility of water control structure installation due to soil conditions.
- Addressing all landowner issues

Preliminary Construction Costs

Undetermined

Preparer of Fact Sheet

Ronny Paille USFWS

Phone: (337) 291-3117

Email: Ronald_Paille@FWS.GOV

Carencro Bayou Freshwater Introduction Project



Dredge channel to connect canals and install gated water control structure

Brady Canal

Bayou Ponchartraine

Clean out storm debris in canal



Carencro Bayou Freshwater Introduction Project



65. Large Pump Station At Bayou Terrebonne

Stormwater drainage will be used to introduce freshwater to an area of marsh west of Bayou Terrebonne currently experiencing a high rate of subsidence to enhance soil building and enhance freshwater flows to support a dynamic estuarine salinity regime.

66. Pump Station At Petit Caillou For Freshwater Diversion To Ward 7

This measure proposes to integrate storm drainage network with a pump station to divert freshwater into Ward 7 wetlands. The primary objective of the project is to redistribute freshwater run-off from the watershed to the marshes. This redistribution is expected to replace lost overland flow, reduce ponding in coastal wetlands, and work against intruding salinity in Terrebonne Parish.

67. Falgout Canal Freshwater Enhancement (Phase I) (CIAP Tier 1)

Entity/Individual Nominating the Project: Terrebonne Parish Consolidated Government

Contact Information:

Mr. Al Levron
Director of Public Works
Terrebonne Parish Consolidated Government
P.O. Box 2768
Houma, LA 70361
985-873-6407, 985-873- 6409 Fax
allevron@tpcg.org,

Total CIAP Funds Proposed: \$3,458,700
Parish CIAP Funds Proposed: \$3,458,700
State CIAP Funds Proposed: \$0
Infrastructure Funds Proposed: \$0

Description and Location of Project: The proposed project area is located in the Terrebonne Basin of CWPPRA Region 3, Terrebonne Parish, in the marshes adjacent to Falgout Canal, between Bayou Dularge and the Houma Navigation Canal. This project would include construction/modification of an inlet structure at a site located on the HNC north of Falgout Canal, modeling of the basin, along with channel improvements, as necessary, to improve efficiency of freshwater flow within the basin area. In addition, existing structures along Falgout Canal would be improved and/or replaced to facilitate operation and maintenance concerns, and the possible placement of shoreline protection along unprotected areas of the HNC. If sufficient funding exists, the project could be expanded to facilitate movement of freshwater, nutrients, and sediment to the hydrologic unit south of Falgout Canal. Project benefits include freshwater flow enhancements to approximately 5,000 acres of existing marsh.

Project Type: Authorized Use 1

Project Justification: 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. By reestablishing the historical north south flow, the project will expand the zone of beneficial Atchafalaya influence. This will be done by modifying water flow patterns to include those marsh areas that have suffered catastrophic loss due to hydrologic isolation and salinity intrusion. The marshes are expected to benefit from reduced salinity and increased nutrients and sediment. This project meets the Coast 2050, Region 3, Strategy 4 to enhance Atchafalaya River influence to Terrebonne marshes, excluding the upper Penchant Basin. The project meets the restoration goals identified by the Strategic Plan for Coastal Restoration adopted by the Terrebonne Parish Coastal Zone Management and Restoration Advisory Committee and supported by the Terrebonne Parish Council, as well as the goals and objectives of the specified action plans of the Barataria- Terrebonne National Estuary Program. This project concept was developed as part of a project for the CWPPRA Priority Planning List 16, but was not selected for continued investigation. No engineering or design funds have been spent on this project.

Project Cost Share: None
Duration: Six years

Status: This project is in engineering and design phase. Modeling has shown that salinity is greater to the north than the south. A design modification is being completed to determine the discharge location.

68. South Lake Decade Freshwater Enhancement And Shoreline Protection (CWPPRA Nominee PPL19)

Louisiana Coastal Wetlands Conservation and Restoration Task Force

October 2003



South Lake De Cade Freshwater Introduction (TE-39)

Project Status
Approved Date: 2000 Project Area: 7,343 acres
Approved Funds: \$495,611 Total Est. Cost: \$5.8 M
Net Benefit After 20 Years: 201 acres
Status: Engineering and Design
Project Type: Freshwater Diversion and Shoreline Protection

Location
The project is located in Terrebonne Parish, approximately 15 miles southwest of Houma, Louisiana.

Problems
The project area is experiencing marsh deterioration due to subsidence, rapid tidal exchange, and human-induced hydrologic changes that result in increased salinities. Saltwater intrusion has caused a shift in marsh type and a conversion of over 30 percent of emergent vegetation to open water habitat. Shoreline erosion along the south embankment of Lake De Cade threatens to breach the hydrologic barrier between the lake and interior marshes.

Restoration Strategy
Proposed project components include installing three control structures along the south rim of the lake and enlarging Lapeyrouse Canal to allow the controlled diversion of Atchafalaya River water, nutrients, and sediments south into project area marshes. Outfall management structures are planned in the marsh interior to provide better distribution of river water. In addition, approximately 1.6 miles of foreshore rock dike is planned to protect the critical areas of the south lake shoreline from breaching.



Lapeyrouse Canal will function as one of three freshwater introduction sites along the south rim of Lake De Cade after obstructions are removed and the canal reinforced.

Progress to Date
After initial engineer investigation the project was divided into two construction units. Construction unit one will consist of the shoreline protection components. The other will be freshwater introduction components. Engineering and design has begun on the shoreline protection components of the project. Data gathering and analysis is being conducted on the freshwater diversion aspects of the project.

This project is on Priority Project List 9.

For more project information, please contact:











Federal Sponsor:
Natural Resources Conservation Service
Alexandria, LA
(318) 473-7758

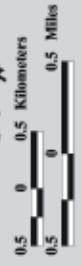


Local Sponsor:
Louisiana Department of Natural Resources
Baton Rouge, LA
(225) 342-7308

www.LaCoast.gov

South Lake De Cade Freshwater Introduction (TE-39)

-  Construction Unit 1
 -  Shoreline Protection *
 -  Construction Unit 2
 -  Freshwater Introduction *
 -  Plug *
 -  Weir *
 -  Containment Dike *
 -  Dredge Channel *
 -  Project Boundary
- * denotes proposed features



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


Background Imagery:
 1998 Digital Orthophoto Quarter Quadrangle
 Map Date: October 1, 2003
 Map ID: USGS-NWRC-2003-11-467
 Data accurate as of: October 1, 2003



69. North Lake Boudreaux Basin Freshwater Introduction And Hydrologic Management (CWPPRA TE32a)

Louisiana Coastal Wetlands Conservation and Restoration Task Force

October 2003



North Lake Boudreaux Basin Freshwater Introduction and Hydrologic Management (TE-32a)

Project Status

Approved Date: 1997	Cost: \$10.5 million
Project Area: 7,222 acres	Status: Engineering and Design
Net Benefit After 20 Years: 619 acres	
Project Type: Water Diversion	

Location

The project is located in Terrebonne Parish, approximately 5 miles southwest of Chauvin, Louisiana.

Problems

The area is suffering from a lack of fresh water, increasing the negative effects of saltwater intrusion into the north Lake Boudreaux basin marshes.

Restoration Strategy



The purpose of the project is to reduce deterioration and loss of area marshes by seasonally introducing fresh water from the Houma Navigation Canal. This project includes the construction of a freshwater conveyance channel with water management gates and the installation of several outfall management structures to allow drainage and reduce ponding of water.

Progress to Date


The contracted Feasibility Study report has indicated that the project, as proposed, can introduce the originally projected volumes of fresh water. Prior to beginning engineering and design work, a landrights assessment is being conducted to better determine where the project's conveyance channel can be located.

This project is on Priority Project List 6.


For more project information, please contact:

	Federal Sponsor: U.S. Fish and Wildlife Service Lafayette, LA (337) 291-3100		Local Sponsor: Louisiana Department of Natural Resources Baton Rouge, LA (225) 342-7308
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www.LaCoast.gov











Dead cypress swamps in the northern part of the project area.



Aerial view of dead cypress swamps in the northern part of the project area.

**North Lake Boudreaux Basin
Freshwater Introduction
and
Hydrologic Management
(TE-32a)**

Culvert*
 **Plug***
 **Water Control Structure***
 **Bridge***
 **Levee**
 **Freshwater Diversion***
 **Marsh Creation Area***
 **Project Boundary**
 * denotes proposed feature



Map Produced By:
 U.S. Department of the Interior
 U.S. Geological Survey
 National Wetlands Research Center
 Coastal Resources Field Station

Background Imagery:
 1998 Digital Orthophoto Quarter Quad
 Map Date: October 17, 2003
 Map ID: USGS-NWRC 2003-11-044
 Data accurate as of: October 17, 2003



70. Brady Canal Hydrological Restoration Project

The plug was suggested as part of CWPPRA Project TE-34- Penchant Basin Natural Resource Plan. Among other many project components, it is recommended to install 10, 48 inch corrugated metal pipes with flap gates in superior canal at the Mauvais Bois Ridge. This entails restoring the ridge function and thereby reducing saline water intrusion through Superior Canal. This feature works well with the existing Brady Canal Project.

71. Ashland Freshwater Introduction And Wetland Assimilation Project (CWPPRA Nominee PPL18, R3-TE-13)

R3-TE-13

PPL18 PROJECT NOMINEE FACT SHEET
2/20/2008

Project Name

Ashland Freshwater Introduction and Wetland Assimilation 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, East of the Houma Navigation Canal to North Lake Boudreaux.

Problem

The marshes north of Lake Boudreaux are experiencing very high rates of loss due to subsidence and saltwater intrusion. The area is isolated from riverine influence and therefore lacks import of nutrients and sediment to maintain elevation. As the marshes to the south deteriorate, saltwater intrusion is impacting the intermediate and freshwater marshes of the upper basin. The loss of marsh in this area is not only of consequence to fish and wildlife resources but to Central Terrebonne Parish communities.

Proposed Project Features

The project will divert freshwater from the Houma Navigation Canal via the St. Louis Canal to marshes north of Lake Boudreaux and incorporate the wastewater treatment system effluent into the stream flow as a wetland assimilation component employing tertiary treatment and nutrient enhancement to marsh vegetation. The project takes advantage of preexisting canals linked to the HNC by dredging them out to improve the efficiency of freshwater flow to the marshes. Other considerations on the project are to modify force drainage pumps to increase flow from the north into the project area.

Goals

The project will reestablish riverine hydrologic connection to the North Lake Boudreaux marsh complex. The introduction of freshwater, nutrients and sediment will offset land loss in the area by stimulating plant growth and increasing mineral and organic accretion.

Preliminary Project Benefits

The project will reduce land loss in the area by reducing salinity, adding nutrients to stimulate emergent vegetation and submersed vegetation growth, and provide sediments to promote accretions/elevation maintenance. With an increase in freshwater flow to the area, it is expected the reduction in land loss will net at least 200 acres over 20 years.

Identification of Potential Issues

The proposed project has the following potential issues: Landrights

Preliminary Construction Costs

\$5 million

Preparer of Fact Sheet

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

PPL 18

Ashland FWI and Wetland
Assimilation Project

HNC FWI

Forced Drainage

TRT

30



0 1.2mi

Louisiana Department of Natural Resources

72. Lower Bayou Dularge Pump Station

Pump station D19 will divert approximately 200 cfs. of freshwater east of Bayou Dularge into an area of marsh currently experiencing high rates of land loss.

73. Upper Bayou Dularge Pump Station

Pump station D18 will be used to introduce approximately 200 cfs. of freshwater to the marshes north of Falgout Canal, which will benefit adjacent marshes.

74. Mayfield Pump Station

Use of pump station D10 to divert approximately 138 cfs. of freshwater to the east into the Lake Boudreaux Basin.

75. Lower Grand Caillou Pump Station

Use of pump station Pump station D11 to divert approximately 138 cfs. of freshwater to the west between Grand Caillou and the HNC.

76. Upper Grand Caillou Pump Station

Use of pump station Pump station D8 to divert approximately 138 cfs. of freshwater to the east into Lake Boudreaux.

77. Woodlawn Ranch Road Pump Station

This pump station project is the largest among those considered at 1350 cfs. Utilizing storm water drainage from the Houma area, freshwater will be introduced to the marshes north of Lake Boudreaux to enhance freshwater flows and support a dynamic estuarine salinity regime. This project works in conjunction with Ashland Freshwater Introduction and Wetland Assimilation.

78. Pointe-Aux-Chenes Pump Station

Use of pump station Pump station D1 to divert approximately 207cfs. of freshwater to the north east of Point Aux Chene.

79. Bayou Terrebonne Freshwater Diversion Project (CWPPRA Nominee PPL19)

PPL19 PROJECT NOMINEE FACT SHEET

January 28, 2009

Project Name

Bayou Terrebonne Freshwater Diversion

Coast 2050 Strategy

Coastwide Strategy – Management of Pump Outfall for Wetland Benefits; Terracing

Project Location:

Region 3, Terrebonne Basin, Terrebonne Parish, Pointe aux Chenes Wildlife Management Area (WMA)

Problem:

The marshes of Terrebonne Parish are rapidly deteriorating due to subsidence, lack of sediment, lack of fresh water, and saltwater intrusion. This has led to a significant reduction in the quality of fish and wildlife habitat. This loss has also made oil and gas infrastructure and the cities of Montegut, Pointe aux Chenes, and Houma more susceptible to storm events.

Goals:

1. Increase the delivery of fresh water, sediments, and nutrients to approximately 9,050 acres of brackish and intermediate marsh.
2. Create approximately 30 acres of habitat via terracing (56,000 feet).
3. Increase emergent marsh diversity.
4. Increase abundance and diversity of submerged aquatic vegetation.

Proposed Solution:

There is currently a large drainage ditch that originates at a pump station on Bayou Terrebonne and runs south to pump stations located at Montegut and Pointe aux Chenes. These three pump stations remove rainwater from the communities of Montegut and Pointe aux Chenes.

With minor modifications, this drainage ditch could connect all three pump stations and allow fresh water to be diverted from Bayou Terrebonne and pumped into the Pointe aux Chenes and Montegut management units on Pointe aux Chenes WMA. This plan would need to provide four elements to achieve the above mentioned goals.

1. Install a water bypass structure around the pump station located at Bayou Terrebonne.
2. Remove an earthen plug between the Montegut and Pointe aux Chenes drainage systems.
3. Install a screw-gate water control structure near the location of the removed plug.
4. Provide Terrebonne Parish with funding to operate and maintain the three pump stations for freshwater delivery to the targeted wetlands.

Once constructed, the pumps located at Pointe aux Chenes and Montegut would pump water out of the drainage system into the impoundments. The drainage system would be provided with fresh water from Bayou Terrebonne via the bypass structure. Once the desired salinity levels were reached in the impoundments the bypass station at Bayou Terrebonne would be closed, water levels within the drainage system would be pumped down to manageable levels, and the entire system would return to flood control operation.

Preliminary Project Benefits:

- 1) *What is the total acreage benefited both directly and indirectly?* 9,050 acres of marsh and shallow water habitat would be benefited. Within this 9,050 acres up to 30 acres of new marsh will be created via terracing.
- 2) *How many acres of wetland will be protected/created over the project life?*
Approximately 150-200 acres
- 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%)?* <25%
- 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, chenieres, etc?* Terraces will help protect ridges within the management units.
- 5) *What is the net impact of the project on critical and non-critical infrastructure?*
Several oil and gas companies have wells and lines in the project area. By reducing marsh loss rates and created marsh, those interests will be better protected and less likely to be exposed.
- 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 goals of the Montegut Wetland Project (State Project TE-01) and the Pointe aux Chenes Hydrologic Restoration Project (State Project TE-06).

Identification of Potential Issues

There are a few pipelines located near the terrace fields which will have to be avoided.

An operation plan will have to be developed between Terrebonne Parish and the Louisiana Department of Wildlife and Fisheries (LDWF).

Preliminary Construction Costs

Unknown at this time

Preparer of Fact Sheet

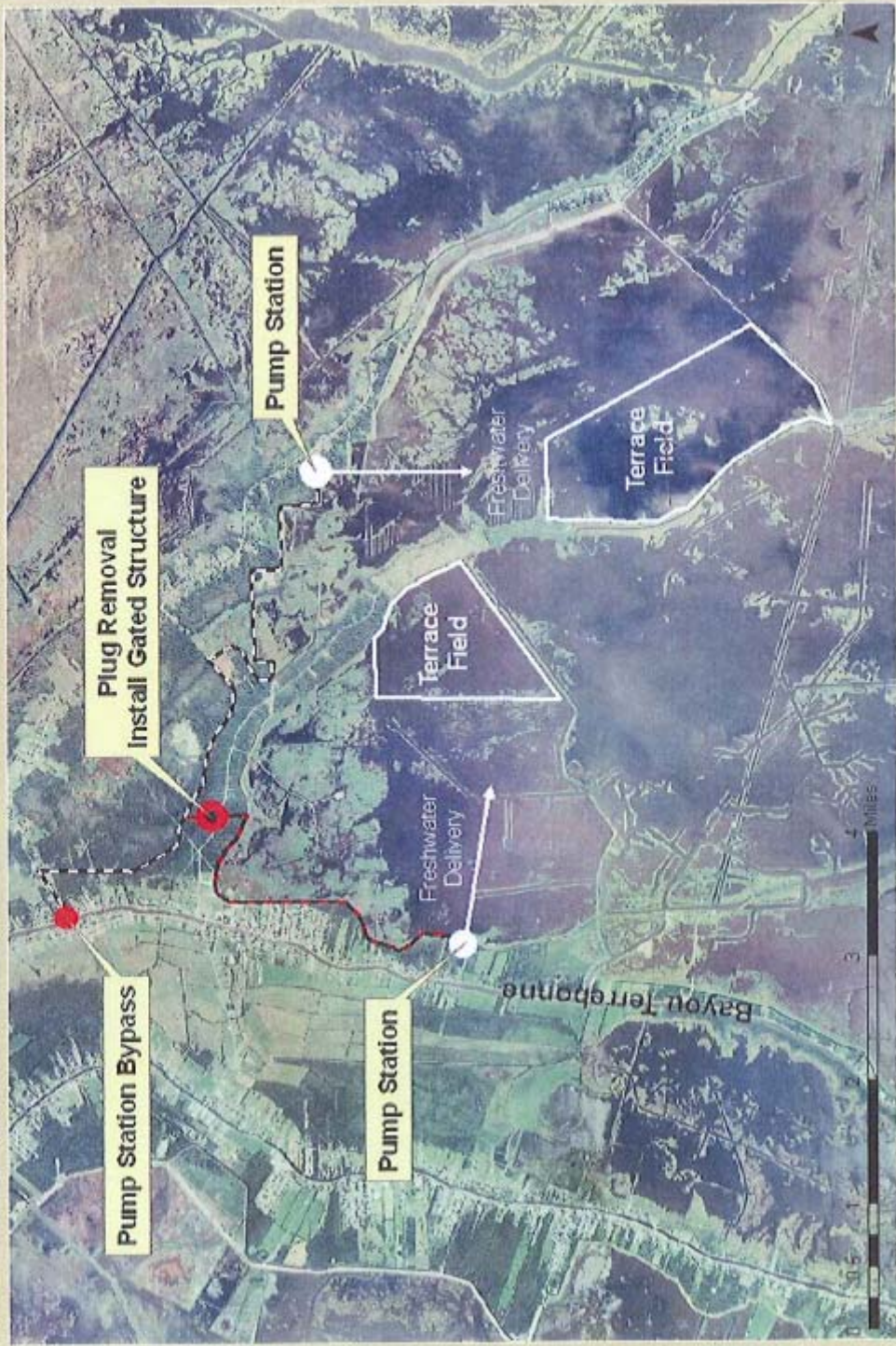
Todd Baker, LDWF, (337) 373-0032, tbaker@wlf.louisiana.gov

Kevin Roy, USFWS, (337) 291-3120, kevin_roy@fws.gov



U.S. Fish & Wildlife Service

Louisiana Ecological Services Field Office
Bayou Terrebonne Freshwater Diversion



80. Freshwater Diversion Using The Bayou Terrebonne Flood Gate

Use the Bayou Terrebonne flood gate, which is located north of Bush Canal and at junction of Madison Canal, to divert freshwater. This will allow a greater volume of freshwater to flow through the GIWW to be supplied to the Terrebonne wetlands.

81. Installation Of A Structure Containing A Large Boat Bay In Robinson Canal Near Highway 56

One of the biggest problems in the Penchant Sub-Basin is high water levels caused by excessive flooding from the Atchafalaya River and the Lake Verret area, and insufficient drainage. The primary strategy to improve marsh conditions in this basin is to improve drainage from the basin, especially in the southern and eastern directions. Therefore projects similar to the Upper bayou Penchant Watershed management as described in the CWPPRA Plan are critical to improving this area. This improved drainage should also help the marshes outside of this sub-basin.

In the Lake Boudreaux area of the Timbalier Sub-Basin, projects of secondary importance include the installation of Flap-gated culverts under Louisiana Highway 57 between Dulac and Louisiana Highway 56, and the installation of a structure having a large boat bay in the Robinson Canal near Highway 56. The importance of culverts under Highway 57 is to allow for the flow of water north-to-south under the highway and to relieve ponding in this portion of the basin. The structure in Robinson Canal will reduce the tidal fluctuations and saltwater penetration in the Lake Boudreaux area (The Barataria-Terrebonne national Estuary Program, CCMP Technical Supplement, Part 3 of 4, June 1996).

Status: ready for construction.

82. Installation Of Flap Gated Culverts Under Highway 57 Between Dulac And Highway 56


One of the biggest problems in the Penchant Sub-Basin is high water levels caused by excessive flooding from the Atchafalaya River and the Lake Verret area, and insufficient drainage. The primary strategy to improve marsh conditions in this basin is to improve drainage from the basin, especially in the southern and eastern directions. Therefore projects similar to the Upper bayou Penchant Watershed management as described in the CWPPRA Plan are critical to improving this area. This improved drainage should also help the marshes outside of this sub-basin.

In the Lake Boudreaux area of the Timbalier Sub-Basin, projects of secondary importance include the installation of flap-gated culverts under Louisiana Highway 57 between Dulac and Louisiana Highway 56, and the installation of a structure having a large boat bay in the Robinson Canal near Highway 56. The importance of culverts under Highway 57 is to allow for the flow of water north-to-south under the highway and to relieve ponding in this portion of the basin. The structure in Robinson Canal will reduce the tidal fluctuations and saltwater penetration in the Lake Boudreaux area (The Barataria-Terrebonne national Estuary Program, CCMP Technical Supplement, Part 3 of 4, June 1996).

Status: ready for construction.

83. Avoca Island Diversion And Land Building (CWPR TE49)

Louisiana Coastal Wetlands Conservation and Restoration Task Force
June 2004



Avoca Island Diversion and Land Building (TE-49)

Project Status

Approved Date: 2003	Project Area: 7,233 acres
Approved Funds: \$2.2 M	Total Est. Cost: \$19.2 M
Net Benefit After 20 Years: 143 acres	
Status: Engineering and Design	
Project Type: Water Diversion	

Location

The project is located in the Avoca Island area in St. Mary Parish, Louisiana.

Problems

The Avoca Island area lost approximately 5,000 acres of marsh between 1932 and 1990. Natural overbank flooding into the area has been eliminated by channelization and construction of flood protection levees, thereby preventing the input of fresh water, sediment, and nutrients.

Restoration Strategy

The goal of this project is to rebuild eroded wetlands in the area through the diversion of fresh water, sediment, and nutrients. A diversion structure will be installed through the Avoca levee to allow water from Bayou Shaffer to enter Avoca Lake at a rate of 1,000 cubic feet per second. A natural bayou will be used as the primary outfall channel for the diversion. Outfall management measures will be evaluated and incorporated to increase benefits to aquatic habitats in the island system.

Progress to Date

The Louisiana Coastal Wetlands Conservation and Restoration Task Force approved funding for engineering and design at the January 2003 Task Force meeting. The project work plan for the engineering and design phase was submitted for program review in May 2003. Engineering data collection, including site surveys and a geotechnical boring, is ongoing.

This project is on Priority Project List 12.


For more project information, please contact:



**US Army Corps
of Engineers**
New Orleans District

Federal Sponsor:
U.S. Army Corps of Engineers
New Orleans, LA
(504) 862-1597

Local Sponsor:
Louisiana Department of Natural Resources
Baton Rouge, LA
(225) 342-7308



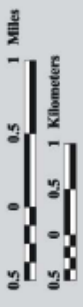
In this aerial view facing southwest, Avoca Island surrounds Avoca Lake in the center of the photograph. Bayou Boeuf is seen in the foreground with Bayou Shaffer in the background.

www.LaCoast.gov

Avoca Island Diversion and Land Building (TE-49)

Diversion Structure*
 **Sediment Diversion ***
 **Marsh Creation***
 **Project Boundary**


*denotes proposed feature



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

Background Imagery:
1998 Digital Orthophoto Quarter Quadrangle
Map Date: December 17, 2002
Map ID: USGS-NWRC 2002-11-092
Data accurate as of: December 17, 2002



84. Bank Stabilization Along Bush Canal And Bayou Terrebonne

The project consists of dredging material from Bush Canal and using the material to rebuild the eroded bank line which will then serve to diminish storm surge as well as reduce saltwater intrusion. Approximately 1.5 miles of bankline stabilization will be completed. The project will provide protection to the wetlands in the area, the Bush Canal Hurricane Protection Levee, and the 4,300 acre La Cache Marsh Management Area.

State Total FY08: \$1,000,000

85. Reconnect GIWW To Grand Bayou

Dredging as needed of Grand Bayou will be added in order to increase the amount of water available and optimize flow to this region of Terrebonne Parish. Increased supply of freshwater and nutrients will assist in vegetation enhancement and accretion in an area of marsh that is rapidly deteriorating. Installation of a water control structure between the GIWW and Grand Bayou will be evaluated if the potential to increase flooding in residential areas is projected.

86. Implementation Of The Pentchant Basin Plan (CWPR TE34)

Louisiana Coastal Wetlands Conservation and Restoration Task Force
October 2003



Pentchant Basin Natural Resources Plan, Increment 1 (TE-34)

Project Status

Approved Date: 1997 **Cost:** \$14.1 million
Project Area: 142,000 acres **Status:** Engineering and Design
Net Benefit After 20 Years: 1,155 acres
Project Type: Hydrologic Restoration

Location

The project is bounded on the north by the Gulf Intracoastal Waterway (GIWW), the east by a north/south line from Lake De Cade to the GIWW, the south by Lake Mechant and Lost Lake, and to the west by a north/south line from Lost Lake to Avoca Island in Terrebonne Parish, Louisiana.

Problems

Area problems include major hydrologic alterations, interior marsh erosion, subsidence, saltwater intrusion, herbivory, and hurricane damage.



The project will reduce water levels in upper Pentchant Basin during the growing season and protect interior wetlands from erosive, tidally induced water exchange, which is causing conversion of marshes to open water and loss of productive fish and wildlife habitat.

Restoration Strategy

This project will combine the long-term realignment of Pentchant Basin hydrology with restoration and protection measures aimed at maintaining the physical integrity of the area during the transition toward greater riverine influence.

Proposed project components may include: a rock weir with a barge bay in the northern end of Big Carencro Bayou at its intersection with Bayou Pentchant; a steel sheet-pile weir with variable crest sections and flapgates in the Bayou Mauvais Bois at its intersection with the Superior Canal; rock bank stabilization; dredging and marsh creation at the mouth of Bayou Pentchant; a rock weir with a barge bay at the southern shoreline of Raccourci Bay; maintenance of existing weirs along Bayou De Cade; shell plugs with rock rip-rap cover along Bayou De Cade; three steel sheet-pile variable crest weirs along Bayou De Cade; two steel sheet-pile variable crest weirs with boat bays along Bayou De Cade; a rock liner in Little Deuce Bayou at its intersection with Bayou De Cade; a rock weir with barge bay in Bayou la Loutre at its intersection with the Superior Canal; a steel sheet-pile weir with boat bay and variable crest sections in Brady Canal at its intersection with Bayou Pentchant; an earthen bank stabilization along Bayou De Cade; and bank maintenance.

The project is expected to divert water and potentially reduce water levels in the northwestern portion of the project and divert that fresh water southeastward to where it is needed. This is expected to increase marsh, fisheries, and wildlife production.

Progress to Date

The Louisiana Coastal Wetlands Conservation and Restoration Task Force approved this project on April 24, 1997. Priority Project List (PPL) 6 authorized funding of \$7,051,550, while PPL 8 authorized an additional \$7,051,550. This project is currently in the planning and design phase.

This project is on Priority Project List 6.

For more project information, please contact:



Federal Sponsor:
Natural Resources Conservation Service
Alexandria, LA
(318) 473-7756



Local Sponsor:
Louisiana Department of Natural Resources
Baton Rouge, LA
(225) 342-7308

www.LaCoast.gov

Penchant Basin Natural Resources Plan, Increment 1 (TE-34)

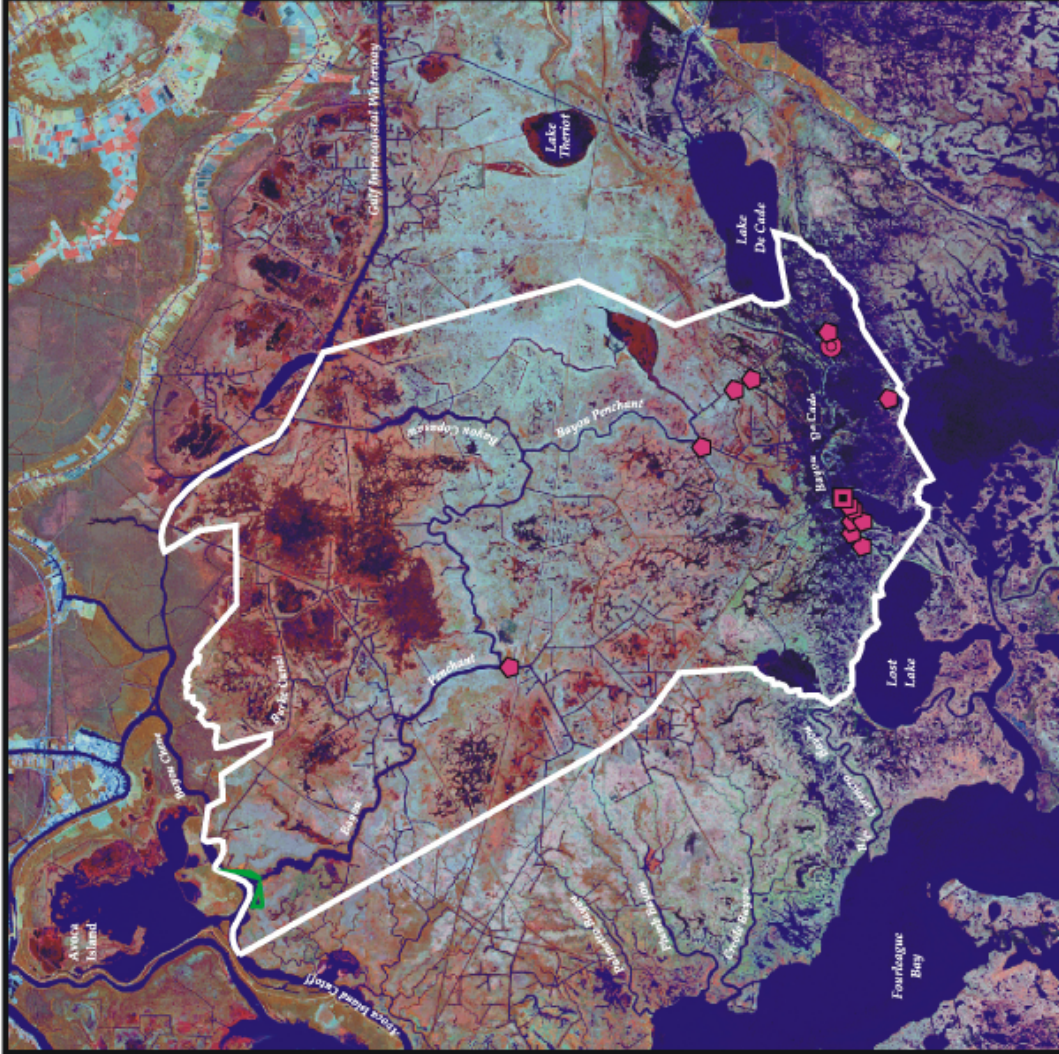
-  Weir *
 -  Plug *
 -  Shoreline Protection *
 -  Shoreline Stabilization with Marsh Creation *
 -  Project Boundary
- * denotes proposed features



Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Resources Field Station

Background Imagery:
Thematic Mapper Satellite Imagery 2000

Map Date: August 27, 2003
Map ID: USGS-NWRC 2003-11-090
Data accurate as of: May 15, 2003



87. Lake Mechant Southwest Shoreline Protection And Bayou Dularge Ridge Protection (CWPPRA Nominee PPL18, R3-TE-18)

PPL18 PROJECT NOMINEE FACT SHEET
February 15, 2008

Project Name:

Lake Mechant Southwest Shoreline Protection and Bayou du Large Ridge Protection

Coast 2050 Strategy:

Coast wide Strategy:

Maintenance of Gulf, Bay and Lake Shoreline Integrity

Maintain, Protect, or Restore Ridge Functions

Region 3 Strategy:

11. Protect, Restore and Maintain Ridge Functions

Project Location:

Region 3, Terrebonne Basin, Terrebonne Parish, Southwest Shoreline Lake Mechant

Problem:

High wave action in Lake Mechant has caused the existing shoreline to erode into the remain Bayou du Large Ridge.

Goals:

Maintain the southwest shoreline Lake Mechant

Restore and Maintain the Bayou du Large Ridge.

Proposed Solutions:

Construction of a 16,500 LF foreshore rock dike for shoreline protection that would reduce area loss rates over 75%. This project would also create 87 acres of marsh in shallow open water sites behind the rock shoreline protection. The rock dike and marsh creation would protect and restore a portion of the Bayou du Large Ridge.

Preliminary Project Benefits:

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

~ 100 acres benefited directly due to the marsh creation

~ 400 acres benefited indirectly by protecting the Bayou du Large Ridge

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

~ 87 acres created

3) What is the anticipated loss rate reduction throughout the area of direct benefits over the project life?

>75%

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, chemiers, etc.?

The project protects the Bayou du Large Ridge and maintains the Lake Mechant lake rim.

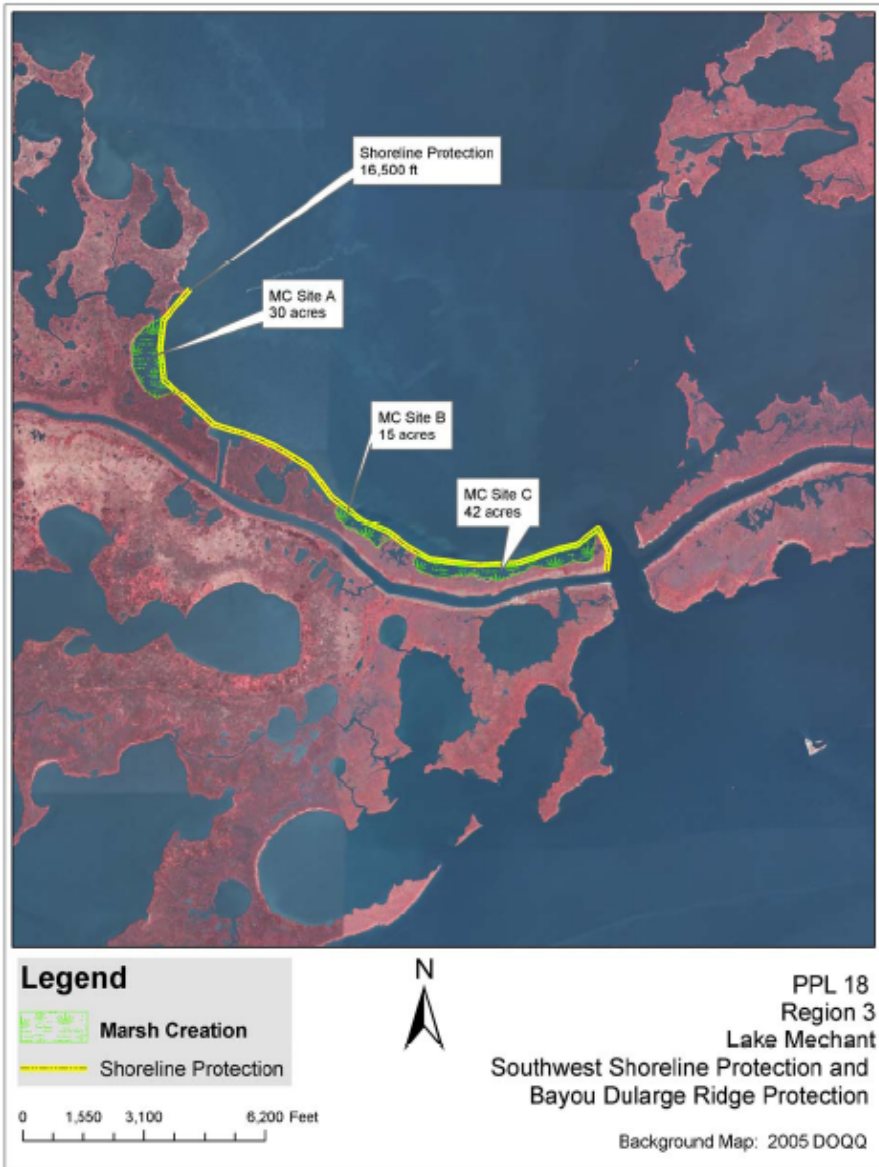
Preliminary Construction Costs:

~ \$8 million.

Preparer(s) of Fact Sheet:

Travis Creel, USACE, 504 862 1071; Travis.J.Creel@usace.army.mil

Project Map:



88. HNC Beneficial Use Of Dredge Material (Bay Tambour And Terrebonne Bay)

The Finding of No Significant Impact for EA #412 (Houma Navigation Canal, Additional Disposal Areas Between Miles 11.0 and 8.0) was signed on 3 February 2009. The next step for Terrebonne Parish is to be able to place dredged material at either of these 2 sites (aka "the Lungs") for marsh restoration purposes is the acquisition and extinguishment of existing oyster leases within these sites. Because of on-going coordination with Conoco-Phillips regarding use of the west side Tambour Bay Disposal Site, Terrebonne Parish intend to concentrate their disposal efforts at the east side Bay Welsh Disposal Site until all issues with use of the west side disposal site have been resolved. Therefore, oyster lease acquisition efforts should be focused on the Bay Welsh Disposal Site first. Terrebonne Parish anticipates that a contract to perform maintenance dredging of the Terrebonne Bay segment of the Houma Navigation Canal will be put out for bids in mid-April 2009. This can include the use of the Bay Welsh Disposal Site only if the pertinent oyster leases have been acquired/extinguished prior to our bid opening for this contract.

89. Madison/Terrebonne Bays Marsh Creation (CWPPRA Nominee PPL19)

**PPL19 Nominee
Madison / Terrebonne Bays Marsh Creation
29 February 2009**

Coast 2050 Strategy:

Regional Ecosystem Strategy 8 – dedicated delivery and/or beneficial use of sediments for marsh building. Terrebonne Marshes mapping unit strategies 15 (protect bay/lake shorelines) and 16 (beneficial use of dredged material)

Project Location:

Region 3, Terrebonne Parish, west of Bayou Terrebonne/south of Madison Bay.

Problem:

The remaining land barrier between Madison Bay and Terrebonne Bay is undergoing rapid deterioration from both interior wetlands loss and shoreline erosion. This marsh rim forms the last barrier between Terrebonne Bay and interior marshes and infrastructure south of Montegut.

Goals:

The project goal is to maintain a continuous wetland mass between Madison and Terrebonne Bays to prevent coalescence of the bays.

Proposed Solutions:

Dedicated dredging from either Lake Barre or Madison Bay to create and restore about 430 acres of saline marsh directly west of Bayou de Mangue. Containment dikes will be constructed to management fill deposition. As conceptualized, Bayou Chitgue will remain open, although cell configuration may be adjusted as needed to accommodate local hydrology, user access, etc. Vegetative plantings will be used.

Preliminary Project Benefits:

The project will benefit about 430 acres of saline marsh.

Identification of Potential Issues:

The proposed project has the following potential issues: borrow material source.

Preliminary Construction Costs:

Construction costs are estimated at \$24,000,000 with 25% contingency.

Preparer(s) of Fact Sheet:

Rachel Sweeney, NOAA, 225.389.0508 ext 206, rachel.sweeney@noaa.gov

Madison Bay – Terrebonne Bay Marsh Creation



47		Ship Shoal: Whiskey West Flank Restoration (TE47)	+	+	+	+	+	+	0	0	+	0		0		5	4	3	4	5	5	5	2	3	36
48	Barrier Island Restoration with Rocks - Fix the barrier islands in their current position using rock. Racoon Island has proved to be successful.	West Racoon Island Shoal Enhancement and Protection (PPL16)	+	0	+	0	0					0		0		5	3	2	3	4	2	2	2	3	26
49		Whiskey Island Back Barrier Marsh Creation (TE50)	+	+	+	+	0					0		0		5	4	4	4	5	3	5	2	3	35
50		Beach and Back Barrier Marsh Restoration, East and Trinity Islands (CIAP Tier 2)	+	+	+	+	0					0		0		5	4	3	4	5	5	5	2	3	36
51		Enhancement of Barrier Island Vegetation Demonstration (TE53)	+	0	+	0	0					0		0		3	3	5	4	3	2	2	2	3	27
52		Racoon Island Shoreline Protection/Marsh Creation (TE46b)	+	+	+	0										4	4	3	4	5	3	5	2	3	33
53		Coastal Bay Sediment Trapping (PPL10)	0									0		0		0	0	0	0	0	0	0	0	0	0
54		Wind Mills Pass Barrier Headland Restoration (TE52)	+	+	+	+	0					0		0		5	4	3	4	5	5	5	2	3	36
55	Create Oyster Reefs	Create oyster reef as an extension to Folke Au Far	0									0		0		0	0	0	0	0	0	0	0	0	0
56		Barrier shoreline restoration Pointe Au Far Island	+	+	0	0	0					0		0		5	4	3	4	5	5	5	2	3	36
57		Dredge Bayou Terrebonne from Company Canal to Jumble Canal	0				+	0	0	+	+	+	+	0		5	5	3	4	5	1	5	4	3	35
58		Dredge Miravos Canal (GNWW to Lake Decade)	0				+	0	0	+	+	+	+	0		5	5	3	4	5	1	5	4	3	35
59	GNWW to divert freshwater into Terrebonne Parish using siphons	Connect St. Louis Canal to Petit Calhou	0									0		0		5	5	4	4	5	1	3	4	3	34
60		Remove conditional dredge GNWW from Bayou Back to Bayou Whizzo	0				+	0	0	+	+	+	+	0		3	4	3	2	3	1	5	5	3	29
61		Break in Avoca Guide levee, north of Horse Shoe to convey freshwater to Terrebonne marshes	0									+	+	0		3	4	3	2	3	1	3	5	3	27
62		Dredge Company Canal to convey freshwater flow to Terrebonne marshes	0				+	0	0	+	0	+	+	0		5	5	3	4	5	1	5	4	3	35
63		Marsh restoration south-west of Four League Bay (phased implementation)	0				+	0	0	+	0	+	+	0		5	4	3	4	4	1	5	2	3	31
64		Caneiro Bayou Freshwater Introduction Project	0				+	0	+	+	0	+	+	0		1	3	3	4	3	1	4	4	3	26
65		Large pump station at Bayou Terrebonne	0									+	+	0		5	5	4	5	5	1	2	4	3	34
66		Pump station at Bayou Petit Calhou for freshwater diversion to Ward 7	0				+	0	+	0	0	+	+	0		5	5	4	5	5	1	2	4	3	34
67		Falgout Canal Freshwater Enhancement (Phase I)	0									+	+	0		4	4	3	4	4	1	4	4	3	31
68		South Lake Decade Freshwater Enhancement and Shoreline Protection	0									+	+	0		4	4	3	4	4	1	5	4	3	32
69		North Lake Bourgeois Basin Freshwater Introduction and Hydrologic Management (TE30a)	0				+	0	+	0	0	+	0	0		4	4	4	4	3	1	4	4	3	31
70		Grady Canal Hydrological Restoration Project	0									+	+	0		3	3	3	3	3	1	2	3	3	24
71		Abbeville Freshwater Introduction and Wetland Assisted Project (PPL16)	0									+	+	0		5	4	4	4	4	1	2	5	3	32
72		Lower Bayou Outage Pump Station	0									+	+	0		4	4	4	5	3	1	2	4	3	30
73		Upper Bayou Outage	0									+	+	0		4	4	4	5	3	1	2	4	3	30
74		Mayfield	0									+	+	0		4	4	4	5	3	1	2	4	3	30
75	Storm and waste water for marsh freshwater enhancement (pump stations)	Lower Grand Calhou	0									+	+	0		4	4	4	5	3	1	2	4	3	30
76		Upper Grand Calhou	0									+	+	0		4	4	4	5	3	1	2	4	3	30
77		Woodlawn Ranch Road	0									+	+	0		4	4	4	5	4	1	2	5	3	32
78		Pointe-Aux-Oives	0									+	+	0		4	4	4	5	3	1	2	4	3	30
79		Bayou Terrebonne Freshwater Diversion Project (PPL16)	0									+	+	0		5	4	3	4	4	1	5	4	3	33
80		Freshwater Diversion Using the Bayou Terrebonne Flood Gate	0									+	+	0		4	4	4	4	4	1	3	4	3	31
81		Installation of a structure containing a large boat bay in Robinson Canal near Highway 56.	0				+	0	-	0	0	0		0		0	0	0	0	0	0	0	0	0	0
82		Installation of flap gated culverts under Highway 57 between Dulac and Highway 56.	0				+	0	0	0	0	+	+	0		5	4	3	3	4	1	2	4	3	29
83		Avoca Island Diversion and Land Building (TE44)	0				+	+	+	+	+	+	+	0		5	4	4	4	3	1	4	5	3	33
84		Bank stabilization along Bush Canal and Bayou Terrebonne	0									+	+	0		5	5	4	3	5	1	2	3	3	31
85		Reconnect Grand Bayou to GNWW	0									+	+	0		4	4	4	4	4	1	3	5	3	32
86		Implementation of the Paschant Basin Plan (TE34)	0				+	0	+	0	0	+	+	0		4	4	3	3	3	1	3	4	3	28
87		Lake Metcham South-West Shoreline Protection and Bayou Outage Edge Protection (PPL16)	0				+	0	+	0	0	0		0		4	3	4	4	5	1	5	3	3	32
88		BNV Beneficial Use of Dredge Material (Bay Tamboeur and Terrebonne Bay)	0				+	+	0	0	+	0		0		5	4	4	3	5	1	5	2	3	32
89		Madison/Terrebonne Bay Marsh Creation (PPL19 Nonvial) TOP 3	0				+	0	+	0	0	+	+	0		3	3	4	5	5	1	5	3	3	32