CWPPRA PPL18 Nominees

Region	Basin	Project Nominees
1	Pontchatrain	Parish-Line Canal Freshwater and Sediment Delivery Project
1	Pontchatrain	Bayou Bienvenue Restoration Project
2	Mississippi River Delta	Pass a Loutre Restoration Project
2	Breton Sound	Bertrandville Siphon Project
2	Breton Sound	Breton Marsh Restoration Project
2	Breton Sound	Baptiste Collete Bayou Crevasses Project
2	Barataria	Elmer's Island Headland Restoration Project
2	Barataria	Bayou L'Ours Ridge Restoration and Marsh Creation Project
2	Barataria	Grand Liard marsh and Ridge Restoration Project
3	Terrebonne	Terrebonne Bay Shoreline Protection/Marsh Creation Project
3	Terrebonne	Lake Boudreaux-Lake Quitman Shoreline Protection and Marsh Creation Project
3	Terrebonne	Central Terrebonne Freshwater Enhancement Project
3	Atchafalaya	Point Chevreuil Shoreline Protection Project
3	Teche-Vermilion	Northwest Vermilion Bay Vegetative Planting and Maintenance Project
3	Teche-Vermilion	Marone Point Shoreline Protection Project
4	Calcasieu-Sabine	Cameron-Creole Freshwater Introduction Project
4	Calcasieu-Sabine	Black Bayou Terraces Project
4	Calcasieu-Sabine	East Cove Marsh Creation Project
4	Mermentau	Freshwater Bayou Marsh Creation Project
4	Mermentau	Terracing at Dyson's Ditch Project

Parish-line Canal Freshwater and Sediment Delivery
April 7, 2008
FINAL

Project Name: Parish-line Canal Freshwater and Sediment Delivery

Coast 2050 Strategy:

- Coastwide Strategies – 1) Dedicated Dredging, to Create, Restore, or Protect Wetlands; 2) Off-shore and riverine sand and sediment resources; 3) Management of pump and gravity-flow outfall for wetland benefits
- Region 1 Strategies – Restore/sustain marshes- #7 Small diversion of Jefferson Parish drainage into La Branch Wetlands

Project Location: Region 1, Pontchartrain Basin, St. Charles/Jefferson Parish, the LaBranch wetlands located between the Bonne Carre Spillway and the Parish-line canal between St. Charles and Jefferson parishes. The project area is bounded on the west by Bonne Carre Spillway, on the east by the Parish Line Canal, on the north by Lake Pontchartrain and on the south by Interstate 10.

Problem: The LaBranche wetlands were cut off from the historic overbank flooding of the Mississippi River since the early days of development in the New Orleans area. Portions of these wetlands were originally converted to open water due to the failure of agricultural impoundments. More recently, these wetlands have suffered from impoundment caused by highway (I10) and railroad construction. Saltwater intrusion is also a problem due to the lack of freshwater from the river, and the effects of MRGO on salinity in Lake Pontchartrain. Jefferson Parish discharges stormwater to Lake Pontchartrain via the Parish Line Canal. The discharge contains suspended solids, nitrogen and phosphorus, as well as less desirable pollutants. While these constituents deteriorate water quality of the lake, the solids, N, and P could benefit the wetlands. Similarly, the parish discharges treated municipal wastewater to the Mississippi River. While these pollutants contribute to hypoxia in the Gulf, they too could benefit the wetlands instead.

Goals: Increase the net acres of brackish marsh in the project area by about 400 ac over 20 yrs

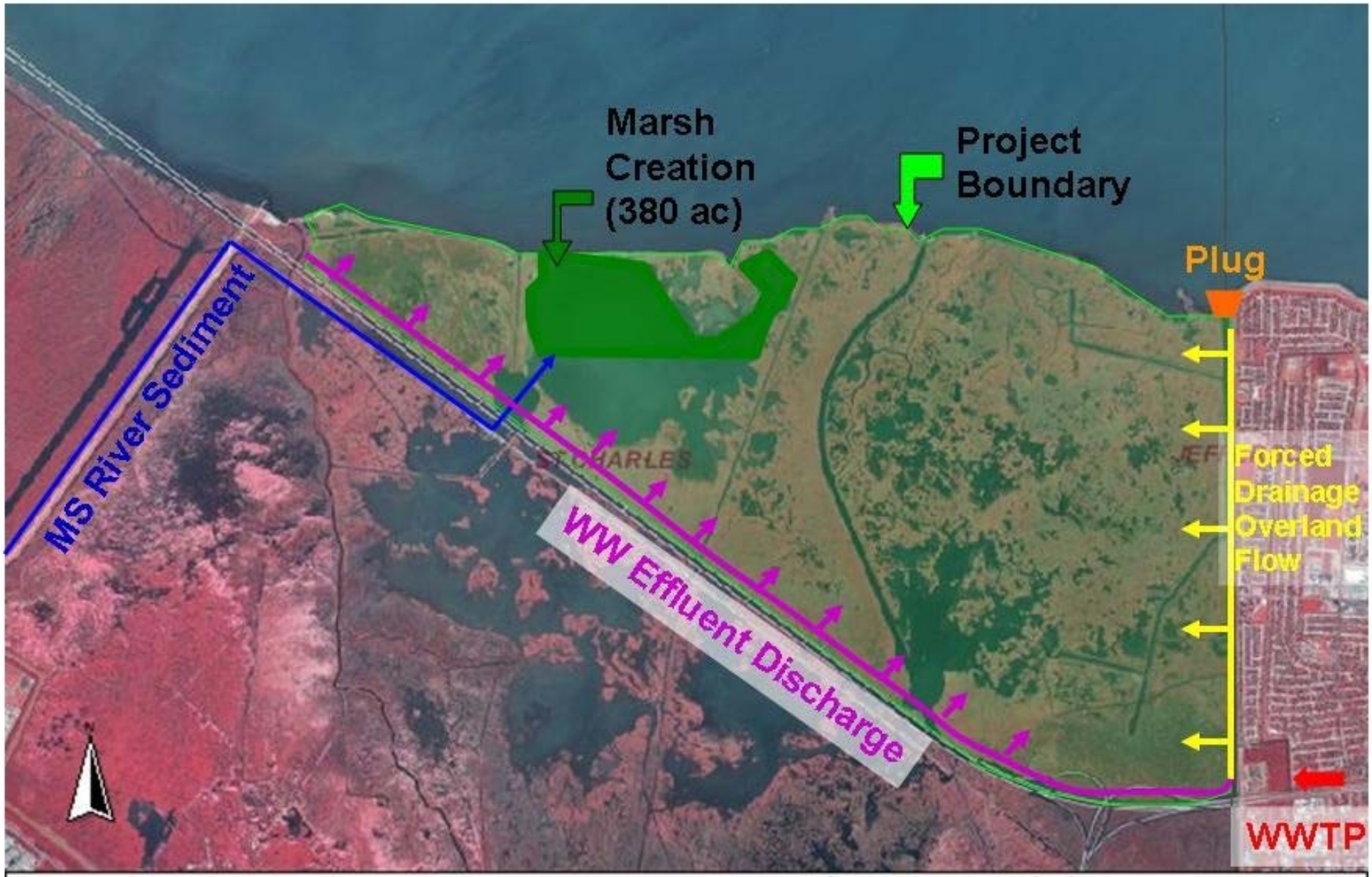
Proposed Solution: The proposed project includes 3 components: 1) Marsh creation via Mississippi River sediment delivery into the LaBranche wetlands (380 ac); 2) Re-routing of stormwater from Lake Pontchartrain by closing the Parish line canal at Lake Pontchartrain and gapping the western spoil bank in the canal; 3) Re-routing treated wastewater (17 mgd) from the Mississippi River to the wetlands west of Parish Line Canal. The proposed project would revise the pump stations discharge structures to pump down gradient directly into the LaBranche Wetlands at the most hydrologically upstream point feasible. Rock rip-rap or an earthen plug would be used to close the Parish Line Canal at its entrance to Lake Pontchartrain. Additional nourishment to wetlands in the area would be provided through the use of treated sewerage outfall from the Kenner treatment facility.

Preliminary Project Benefits: The total acreage benefited both directly and indirectly is 3680 ac. This project will protect/create 436 ac of marsh throughout the life of the project (372 ac from marsh creation, 64 ac from wetland assimilation of treated wastewater + stormwater). The anticipated loss rate reduction throughout the area of direct benefits over the project life is 50-74% (52%; 50% for marsh creation, 48% for other features). No project features maintain or restore structural components of the coastal ecosystem. The project may have a significant positive net impact on I10, which is critical infrastructure. The project will complement the PO-17 project. Borrowing sediment from the Mississippi River for marsh creation, would eliminate any negative environmental effects of borrowing from Lake Pontchartrain. Re-routing stormwater from Lake Pontchartrain will improve water quality in Lake Pontchartrain. Re-routing of treated wastewater from the Mississippi River will reduce nutrient loading to the Gulf, thus providing a small contribution to the effort to reduce Gulf hypoxia.

Identification of Potential Issues: Landrights, regulatory water quality issues, pipelines/utilities, not UEA

Project Construction Costs: Construction + 25% = $21,596,000; FFC factor = 1.45; FFC estimate = $31,314,200; FFC range = $30M - $35M

Preparers of Fact Sheet: Brad Crawford, EPA (214)665-7255; Ken Teague, EPA (214)665- 6687



Data Source: LA Department of Natural Resources
Map Date: March 20, 2008
Image Data: 2005 Coastal Photographs

PPL 18 Nominee
Parish-Line Canal Freshwater and Sediment Delivery

PPL18 PROJECT NOMINEE FACT SHEET
April 2008

Project Name
Bayou Bienvenue Restoration Project

Coast 2050 Strategy
- Management of pump outfall for wetland benefits and hurricane protection
- Dedicated Dredging, to Create, Restore, or Protect Wetlands;
- Off-shore and Riverine Sand and Sediment Resources;
- Dedicated delivery of sediment for building baldcypress – water tupelo swamp.

Project Location
Region 1, Pontchartrain Basin, Orleans Parish, just east of the Industrial Canal.

Problem
Over the past years the wetlands in the area has eroded due to altered hydrology/impoundment, substance, and saltwater intrusion. The majority of the area is very shallow open water littered with ghost cypress logs and stumps.

Goals:
The goal of this project is to create and maintain wetlands in the triangular area adjacent to the headwaters of Bayou Bienvenue.
Specific Goals:
1.) Creation of 440 acres of baldcypress – water tupelo swamp through marsh creation.
2.) Planting area with baldcypress and water tupelo
3.) Restore the historic ridge along Bayou Bienvenue
4.) Divert treated municipal effluent from the local treatment plant to enhance the created swamp.

Proposed Solutions:
Dedicated dredging of sediments from the Mississippi River to create emergent wetlands in the triangular area adjacent to the headwaters of Bayou Bienvenue. Following the placement of dredged sediments, and freshening through beneficial use of disinfected, secondarily treated sewage effluent, the area would be planted with baldcypress and water tupelo. The treated effluent will be provided by the Orleans sewage treatment plant, contiguous with the restoration site. The area will be monitored to optimize the correct water levels and salinities for baldcypress and water tupelo growth and regeneration.

Preliminary Project Benefits:
1) What is the total acreage benefited both directly and indirectly? Direct benefits include creation of 440 acres of of baldcypress – water tupelo swamp through hydraulic dredging of sediments from the Mississippi River.

2) How many acres of wetlands will be protected/created over the project life? This project would sustain approximately 440 acres of marsh throughout the life of the project.

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%). The loss rate in the area of direct benefits would be reduced by >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, cheniers, etc. This project would help protect and restore a portion of the Bayou Bienvenue Marsh and restore the historic ridge along Bayou Bienvenue.

5) What is the net impact of the project on critical and non-critical infrastructure? This project would help protect the New Orleans East Hurricane protection levee.

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? This project would work synergistically with the approved CIAP Central Wetlands Assimilation Project.

Identification of Potential Issues:
There are several landowners in the area.

Preliminary Construction Costs
Construction costs, including a 25% contingency, are estimated to be approximately $23.9 million. Fully funded costs are estimated to range between $30-$35 Million.

Preparer of Fact Sheet
Travis Creel, USACE, 504 862 1071; Travis.J.Creel@usace.army.mil

Project Map


Treated municipal effluent
Legend
Marsh Creation
Containment Dike
0 385 770 1,540 2,310 3,080
Feet
N
PPL 18
Region 1
Bayou Bienvenue Marsh Creation

PPL18 PROJECT NOMINEE FACT SHEET
FINAL
April 7, 2008

Project Name
Pass a Loutre Restoration

Coast 2050 Strategy
Regional Strategy – Continue building and maintaining delta splays

Project Location
Region 2, Plaquemines Parish, Mississippi River Delta Basin, marshes north and south of Pass a Loutre on the Delta National Wildlife Refuge (NWR) and Pass a Loutre Wildlife Management Area (WMA).

Problem
Historically, Pass a Loutre was a major distributary of the Mississippi River. This pass carried sediments that created and maintained in excess of 120,000 acres of marsh. Pass a Loutre is not a maintained navigation channel and over time has filled in considerably and carries much less flow than it did historically. The Pass a Loutre channel has silted in and is now very shallow and narrow. The decreased channel size has much less capacity to carry fresh water and sediments and marshes historically nourished by the channel are now being starved and are subsiding at an alarming rate. In addition, a hopper dredge disposal site located at the head of Pass a Loutre has accelerated infilling of the channel.

Goals
The goal of this project is to restore an important distributary of the Mississippi River so that it will once again create new wetlands and nourish existing marsh. Dredged material will create marsh immediately and the increased fresh water and sediment carrying capacity of the channel will create marsh over time and increase the abundance and diversity of submerged aquatics.

Specific goals of the project are: 1) Enhance marsh-building processes within the project area; 2) Create approximately 587 acres of marsh with dredged material from construction of a conveyance channel; and 3) Over the 20-year life of the project, create approximately 609 acres of marsh via the construction of 12 crevasses.

Proposed Solutions

1) Pass a Loutre would be dredged for approximately 5.6 miles from Head of Passes to Southeast Pass. Preliminary design includes channel dimensions of -30.0ft NAVD88 by a 300-ft bottom width.

2) Approximately 5.0M yd^3 of material would be dredged during construction of the conveyance channel. That material will be used beneficially to create approximately 587 acres of marsh on Delta NWR and Pass a Loutre WMA.

3) Construction of 11 crevasses and cleanout of one existing crevasse. Crevasses will be constructed to a -8.0ft by 75-ft bottom width with 1(v):2(h) side slopes.

Preliminary Project Benefits

1) What is the total acreage benefited both directly and indirectly? Approximately 587 acres of marsh would be created from initial channel construction. Indirect benefits would occur over approximately 27,000 acres of marsh and open water habitats as a result of increased freshwater and sediment delivery (August 14, 2007 WVA).

2) How many acres of wetlands will be protected/created over the project life? Based on the Wetland Value Assessment conducted for this PPL17 candidate project, 1305 net acres of marsh would result from this project.

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%)?* The assumed reduction in marsh loss over the entire project area would be between 25-49%.

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 help maintain several natural levee ridges. The project would introduce sediment along several passes that have been sediment starved for several decades and are subsiding.

5) What is the net impact of the project on critical and non-critical infrastructure? Seven oil and gas companies have facilities and pipelines in this area which would benefit from an increase in marsh acreage. The loss of wetlands in this area exposes those facilities to open water wave energies resulting in expensive damages and oil spills. Protecting/creating wetlands in this area would also assist in reducing storm damages to oil and gas infrastructure and commercial development in nearby Venice, LA.

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? The project would provide a synergistic effect with the Delta Wide Crevasses Project (PPL6) which constructed several crevasses south of Pass a Loutre. Many of the crevasses constructed under that project depend on the sediment load delivered by Pass a Loutre. With Pass a Loutre restored, the sediment carrying capacity of the channel will be increased which will accelerate crevasse growth in the area. This project would also have a synergistic effect with several other projects on the Mississippi River Delta – Venice Ponds Marsh Creation and Crevasses (PPL15), Spanish Pass Diversion (PPL13), Benneys Bay Diversion (PPL10), an LDWF crevasse project on Pass a Loutre, and several state mitigation projects that have been constructed on the WMA.

Identification of Potential Issues

Several pipelines cross Pass a Loutre but should not significantly impact dredging activities. Impacts to the Mississippi River navigation channel would need to be investigated via modeling and other analyses.

Preliminary Construction Costs

The construction cost including 25% contingency is approximately $22,157,899. The fully-funded cost range is $25M - $30M.

Preparer of Fact Sheet

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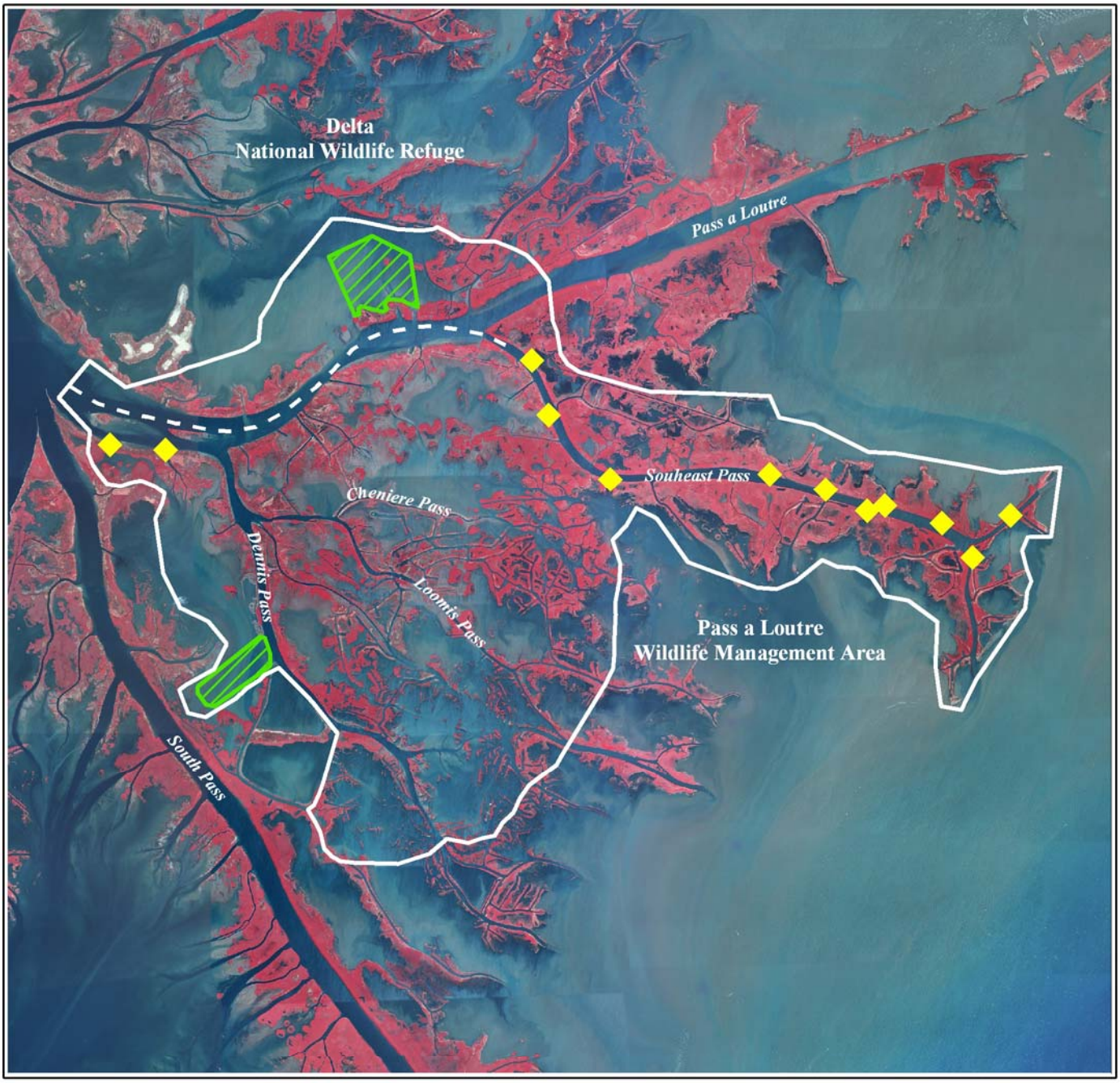


Pass a Loutre Restoration
(PPL18 Nominee)

Crevasse *

Dredged Channel *

Marsh Creation *

Project Boundary *

* denotes proposed features

1 0 1 Kilometers

1 0 1 Miles

Scale 1:118,000

USGS science for a changing world

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

Image Source:
2005 Digital Orthophoto Quarter Quadrangles

Map ID: USGS-NWRC 2008-11-0179
Map Date: April 01, 2008

PPL18 PROJECT NOMINEE FACT SHEET
April 7, 2008
FINAL

Project Name: Bertrandville Siphon

Coast 2050 Strategy:
- Coastwide Common Strategies
  - Diversions and river discharge
  - Management of diversion outfall for wetland benefits
- Region 2 Regional Ecosystem Strategies:
  - Restore and Sustain Marshes: #8: Construct most effective small diversions

Project Location: Region 2, Breton Sound Basin, Plaquemines Parish, near Woodlawn School

Problem: Some of the marsh lost in this area may be due to failed agricultural impoundments. In addition, this area has been disconnected from the Mississippi River since levees were constructed during the early 20th century. The lack of overbank flooding/crevasses ensures that wetlands here do not have sufficient sediment input to maintain elevation against subsidence. In addition, drainage canals and oil and gas canals and associated spoil banks probably create some undesirable impoundment and tidal scour/saltwater intrusion in the area. Finally, recently, after Hurricane Katrina seriously damaged this area, small remnant stands of cypress trees were killed by trapped saltwater. In addition to impoundment caused by canals and spoil banks, the area is probably somewhat naturally impounded due to a natural ridge. Aerial photography clearly demonstrates the significant loss of marsh in this area. Anecdotal evidence from parish staff, and photographs, document the recent loss of cypress in the area.

Goals: Reverse wetland loss. Restore cypress swamp and fresh and intermediate marsh. Increase SAV cover.

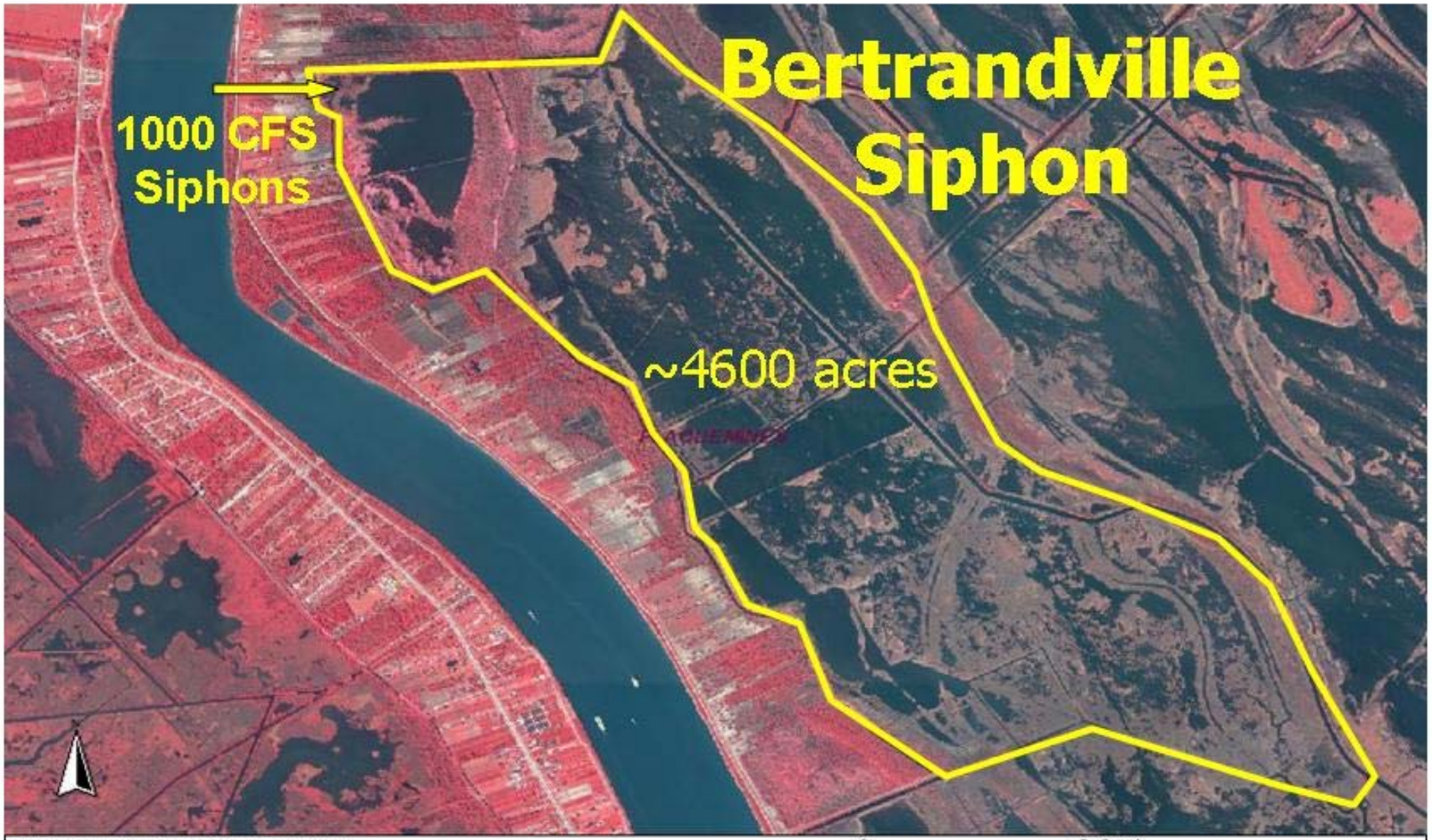
Proposed Solutions: Construct a siphon from the Mississippi River, with 1000 cfs maximum capacity. The project may require additional features for delivery and outfall management. Plant cypress trees.

Preliminary Project Benefits: The total acreage benefited directly and indirectly is estimated to be 4600 ac. We estimate 563 net acres will be created/protected over the project life based on our application of the Boustany Model. The anticipated loss rate reduction throughout the area of direct benefits over the project life is >75%. No project features maintain or restore structural components of the coastal ecosystem. The project may have a significant positive net impact on the Mississippi River levee, which is critical infrastructure. The project will provide a synergistic effect with the Caernarvon Diversion project, Caernarvon Diversion Outfall Management (BS-03a) and Caernarvon Outfall Management/Lake Lery SR (BS-16).

Identification of Potential Issues: The proposed project has potential land rights issues, pipelines/utilities, O&M, not UEA.

Preliminary Construction Costs: Estimated Construction + 25% = $10,238,700; FFC factor = 1.85; FFC estimate = $18,941,590; FFC range = $15M - $20M

Preparer(s) of Fact Sheet: Kenneth Teague, EPA, 214-665-6687, **Teague.Kenneth@epa.gov**; Brad Crawford, EPA, 214-665-7255, **Crawford.brad@epa.gov**



Data Source: LA Department of Natural Resources
Map Date: February 12, 2008
Image Data: 2005 Coastal Photographs

PPL 18 Proposed Bertrandville Siphon

PPL18 PROJECT NOMINEE FACT SHEET
FINAL - April 7, 2008

Project Name:
Breton Marsh Restoration Project

Coast 2050 Strategy:
- Dedicated dredging for wetland creation.
- Maintenance of bay and lake shoreline integrity.

Project Location:
Region 2, Breton Basin, Plaquemines Parish, Caernarvon mapping unit, south east of Delacroix, LA.

Problem:
The landfall of Hurricane Katrina in southeast Louisiana destroyed thousands of acres of marsh and other coastal habitats east of the Mississippi River. One of the areas most severely impacted was the Breton Sound Basin where it is estimated that 40.9 square miles of marsh were converted to open water. The operational plan of the Caernarvon Freshwater Diversion for 2006 proposes higher discharge during the winter and spring to address hurricane impacts. However, this discharge will have little potential to rebuild wetlands near the Breton Landbridge- an area located south of Lake Lery between Bayou Terre aux Boeufs (near Delacroix) and River aux Chenes. Without restoration this region will begin to see the coalescence of water bodies such as Grand Lake, Lake Petit, and the surrounding marsh ponds resulting in more direct connection between interior intermediate marshes and the open brackish Black Bay system.

Goals:
The goal of this project is to maintain the landbridge between the Bayou Terre aux Boeufs and River aux Chenes ridges and restore critical wetlands destroyed by Hurricane Katrina.
Specific Goals: 1) Creation of 669 acres of emergent marsh through marsh creation. 2) Creation of 52,000 ft of terracing equivalent to 33 acres of marsh. 3) Restore the western shoreline of Bayou Gentilly and several unnamed lakes.

Proposed Solutions:
Renewable Mississippi River sediments that were deposited in Lake Lery as a direct result of the Caernarvon Diversion Project will be hydraulically dredged and pumped south of Lake Lery via pipeline to create/nourish approximately 669 acres of marsh in the project area. Approximately 52,000 linear feet of terraces equivalent of 33 acres of marsh would be created in a 300 acres terrace field. The shorelines of several small ponds, lakes, and bayous (Bayou Gentilly) would also be restored. Containment dikes will be constructed as necessary to retain the dredge effluent. These would be degraded and/or gaped where needed to allow for fisheries access. Containment dikes that are not degraded or partially degraded (i.e., lake and bayou shorelines) would be planted to quickly reestablish vegetation cover. There would be maintenance associated with the terraces.

Preliminary Project Benefits:
1) What is the total acreage benefited both directly and indirectly? Direct benefits include creation of 702 acres of marsh through hydraulic dredging (669 acres) and construction of terraces (33 acres).

2) How many acres of wetlands will be protected/created over the project life? This project would net approximately 496 acres of marsh throughout the life of the project.

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%). The loss rate in the area of direct benefits would be reduced by >50-74%.

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. This project would help protect and restore portions of several small lakes and pond shorelines and the western bankline of Bayou Gentilly. This project would also help restore a "landbridge" or a functional ridge to help retain fresher water north from the Caernarvon structure and reduce the amount of higher saline waters entering from the south.

5) What is the net impact of the project on critical and non-critical infrastructure?
There is no infrastructure that benefits from the project.

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? This project would work synergistically with the Caernarvon Diversion and the Caernarvon Outfall Management/Lake Lery Shoreline Restoration Project (BS-16) that has recently been approved for Phase I.

Identification of Potential Issues:
There are several pipelines in the area.

Preliminary Construction Costs:
Construction cost including 25% contingency is estimated to be $23,811,691. The fully-funded cost range is $35M - $40M.

Preparer(s) of Fact Sheet:
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U.S. Fish & Wildlife Service

Louisiana Ecological Services Field Office

Breton Marsh Restoration Project

Baptiste Collette Bayou Crevasses
April 7, 2008
FINAL

Project Name: Baptiste Collette Bayou Crevasses

Coast 2050 Strategy: Coastwide Strategy: Diversions and Riverine Discharge
Region 2 Ecosystem Strategy: *Restore and Sustain Marshes*, #7: Continue building and maintaining delta splays

Project Location: Region 2, Breton Sound Basin and Mississippi River Basin, Baptiste Collette Subdelta along Baptiste Collette Bayou.

Problem: Due to a combination of reduced sediment input and high subsidence, the marshes near Baptiste Collette are rapidly deteriorating. Artificial crevasses construction is an attempt to mimic the natural crevasse formation process. By enlarging several small crevasses and creating new crevasses, the land-building and marsh maintenance opportunities for this area will be increased.

Goals : Create approximately 517 ac of fresh and/or intermediate marsh over 20 years.[1] Increase SAV.

Proposed Solutions: Construct 5 crevasses in the Baptiste Collette Subdelta by dredging cuts between Baptiste Collette Bayou and shallow open water receiving areas.

Project Benefits: The total acreage benefited directly and indirectly is estimated to be 1900 ac. We estimate 517 net acres will be protected/created over the project life based on our application of the LDNR linear regression model (Banks 2001). The project will increase SAV cover. The anticipated loss rate reduction throughout the area of direct benefits over the project life is >75%. No project features maintain or restore structural components of the coastal ecosystem. The project may have a significant positive net impact on the Mississippi River levee, which is critical infrastructure. The project will provide a synergistic effect with the Local Programs project entitled Alexis Bay Terracing (2004).

Identification of Potential Issues: The proposed project may have the following potential issues: utilities/pipelines, induced shoaling, not UEA.

Preliminary Construction Costs:
Construction +25% = $860,000
FFC Factor = 1.85; FFC Estimate = $1.6M FFC; Range = $0M-$5M

Preparer(s) of Fact Sheet:
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[1] Benefits calculation is based upon the LDNR linear regression model (Full) and 2005 aerial imagery. The effects of the excavated material have not been included in this estimate.


235 Acres
E
D
305 Acres
760 Acres
C
110 Acres
A
B
490 Acres
Baptiste Collette Bayou Crevasses
Louisiana Department of Natural Resources
0
14030ft

PPL-18 Project Nominee Fact Sheet – Final
April 7, 2008

Project Name:
Elmer's Island Headland Restoration

Coast 2050 Strategy:
Coastwide strategy: Dedicated dredging to create, restore, or protect wetlands
Regional Strategy 22: Restore and maintain barrier islands and barrier shorelines

Project Location:
Region 2. Barataria Basin, Caminada-Moreau headland, Fourchon Planning Unit, Jefferson Parish.

Problem:
This project is part of the Caminada-Moreau headland located just west of Grand Isle and Caminada Pass. Historically, the project area has been predominantly marsh platform/wetland habitat and protected by a sandy headland. The headland itself is a relict deltaic feature associated with the Lafourche watershed and is currently receding at a high rate. This has resulted in significant shoreline recession and a corresponding loss of barrier island and marsh acreage. The observed shoreline changes along Bayou Lafourche Headland have been dramatic, and are a combined result of long-term sediment shortages and headland subsidence coupled with relative sea level rise. A review of historical land loss was presented in the LCA feasibility report for the Caminada headland, which shows an average long term shoreline recession rate of 45 feet per year and in internal marsh loss rate of 0.61% per year.

Proposed Project Features:
Project features include the re-establishment of a 380 acre barrier headland via the building of a beach, dune, and back-barrier marsh system. The beach and dune will extend for approximately two miles (10,560 linear feet) along the gulf and will be approximately 745 ft wide. The marsh will be approximately 825 ft wide to encompass 200 acres. The design has incorporated the features and dimensions of the selected design alternative(s) for the LCA barrier island study for the Chenier Caminada reach; whereas, the dune has a +7 ft height, 20 on 1 side slopes, and a dune crown width of 290 ft. The beach is 175 ft wide from the toe of the dune with 20 on 1 side slopes as well. The marsh platform will have a constructed elevation of +1.5 ft NAVD88. Approximately 3.2 MCY of material will be dredged for the entire project likely using borrow from offshore and potentially Caminada Pass. The marsh will be fully confined and both marsh and dune vegetation will be planted upon material compaction and settlement.

Goals:
1. Reestablish 2 miles of barrier headland via beach, dune, and marsh creation.
2. Create 380 acres of land, 200 acres of back-barrier marsh and 180 acres of beach and dune habitat.
3. Reduce erosion of adjacent interior marshes.
4. Close existing breaches and prevent future breaching of the headland during the project life.

Preliminary Project Benefits:

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

380 acres benefited, 200 acre marsh platform and 180 acre beach and dune created.

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

237 acres will remain at the end of twenty years, 188 acres of created marsh and 49 acres of beach and dune

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

It is anticipated that the loss rate of the headland and adjacent interior marsh would be reduced by 25-49%.

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.*

This project will directly re-establish a gulf barrier headland.

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

It is expected that this project will have a net positive impact on critical infrastructure, including LA Hwy 1 and the communities surrounding Grand Isle.

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

This project will address in the near-term a critical component of the Caminada-Moreau shoreline that is already breached. The barrier island chain of Louisiana is part of the LCA study and design alternatives have already been selected for the Caminada headland that are incorporated into the conceptual design of this project. Funds for the LCA study, however, have not been approved, which makes pursuing this project through CWPPRA necessary and timely. Should LCA funds be appropriated at a later date for this area, this project will have been constructed to be consistent in size and design.

Identification of Potential Issues:

There are 3 oyster leases in the project area. A portion of the headland has been purchased by the State; however, other portions of the headland are still under purchase negotiations. No indications have been given by the DNR Land Section that a pending land purchase would be an impediment to the project.

Preliminary Construction and Fully Funded Costs:

Preliminary construction cost estimate is **$28.8M**. This includes construction, mobilization, vegetative plantings, and 25% contingency. The fully funded cost range, using criteria and ranges provided by the Engineering Work Group, is between $35-40M.

Preparer of Fact Sheet:

Cheryl Brodnax, NOAA NMFS, (225) 578-7923, cheryl.brodnax@noaa.gov

PPL-18 Elmer's Island Headland Restoration Project

PPL18 PROJECT NOMINEE FACT SHEET
FINAL
7 April 2008

Project Name:
Bayou L'Ours Ridge Restoration and Marsh Creation.

Coast 2050 Strategy:
Coastwide: Dedicated Dredging for Wetland Creation
Maintain or Restore Ridge Functions

Project Location:
Region 2, Barataria Basin, Lafourche Parish, east of Galliano, and south of Little Lake

Problem:
The gapping of the Bayou L'Ours ridge by pipeline canals has altered the hydrology of the area and contributed to the degradation of the marsh north of the ridge. Additionally, the tidal flow through these canals is causing the depth of these openings to increase.

Goals:
The project will restore the function of the Bayou L'Ours ridge, partially restore the hydrology of the bayou, and will halt the deepening of the gaps. Marsh will be created in areas near the ridge to help restore the ridge's natural function and prevent further degradation of the marsh north of the ridge.

Proposed Solutions:
Three of the gaps will be closed completely. Two additional gaps will be decreased in size and armored to prevent any further scouring. Dredged materials from Little Lake will be utilized for marsh restoration near some of the gaps which will provide additional protection to the ridge

Preliminary Project Benefits:
1) What is the total acreage benefited both directly and indirectly? The 152 created acres will be directly benefitted. The project area of 7,972 acres, of which 2,544 acres are land, will be benefitted indirectly due to decrease in salinity
2) How many acres of wetlands will be protected/created over the project life? At the end of 20 years, 125 of the created acres will remain. Assuming a 5 % reduction in the loss rate due to salinity reduction, 35 acres would be preserved over 20 years. Thus the net acres benefitted would be 160.
3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life? <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, cheniers, etc.* restores the function of the Bayou L'Ours ridge by providing a barrier to salt water intrusion

5) *What is the net impact of the project on critical and non-critical infrastructure?* Provides additional storm surge protection for the Clovelly Dome Storage Terminal, the Larose to Golden Meadow levee system, and communities to the north of the ridge.
6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* Reduces salt water intrusion to the area near the Little Lake Shoreline Protection (BA-37) Project.

Identification of Potential Issues:
Past projects in this area have had landowner issues, but landowners in the area have expressed their support of the project. Pipelines in Little Lake borrow area are a potential issue.

Preliminary Construction Costs:

Construction costs, including a 25% contingency, are estimated to be approximately $16.9 million. Fully funded costs are estimated to range between $20-$25 Million.

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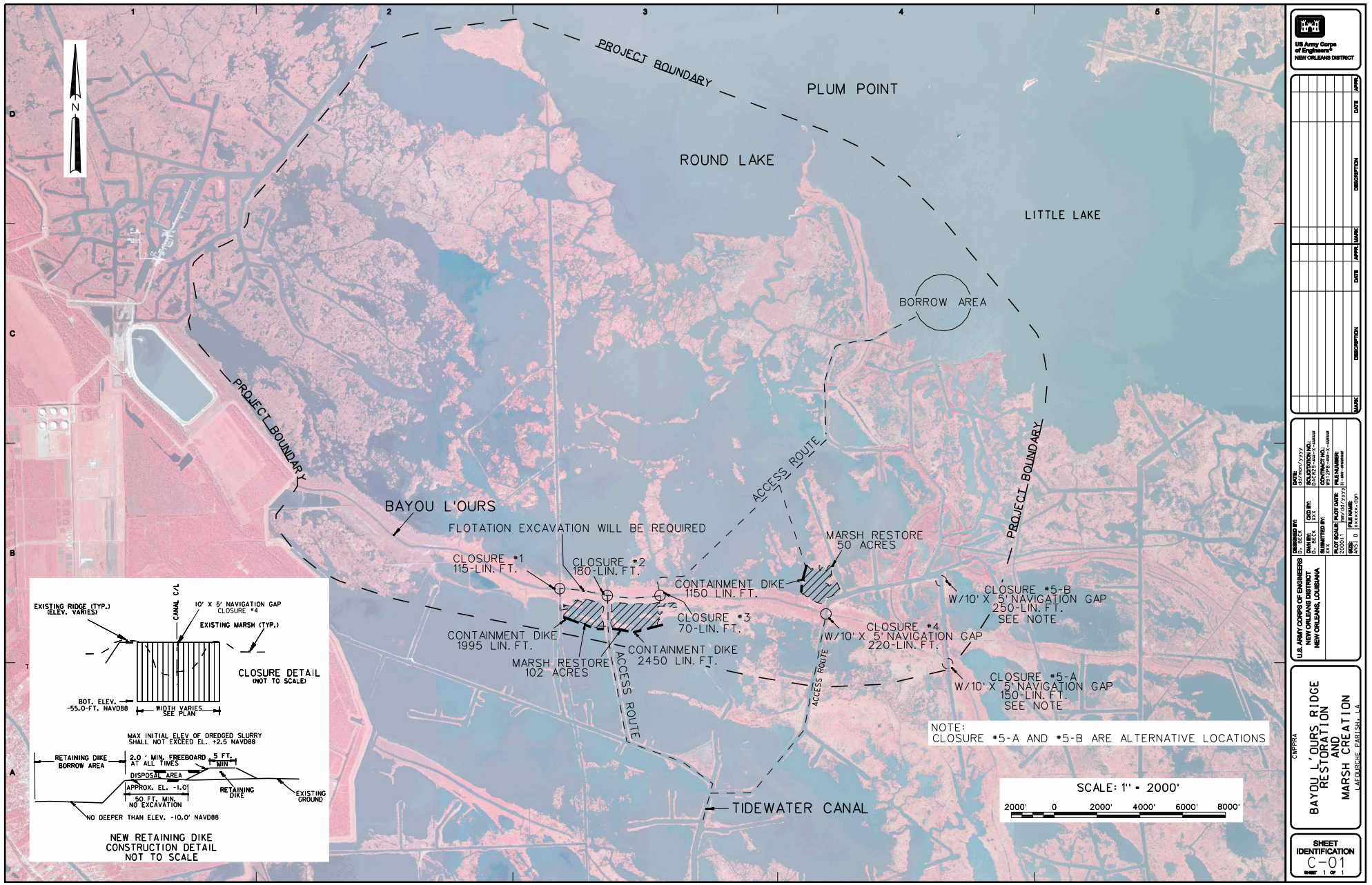

US Army Corps of Engineers
NEW ORLEANS DISTRICT

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U.S. ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT
NEW ORLEANS, LOUISIANA

DESIGNED BY: D. BECK
DRAWN BY: D. BECK
SUBMITTED BY: XXX
CHKD BY: XXX
DATE: mm/yyyy
SOLICITATION NO.: DACW29-##-R-####
CONTRACT NO.: W912P8-##-C-####
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CWPPRA

BAYOU L'OURS RIDGE
RESTORATION
AND
MARSH CREATION

LAFOURCHE PARISH, LA

SHEET IDENTIFICATION
C-01
SHEET 1 OF 1

PPL18 PROJECT NOMINEE FACT SHEET
FINAL - April 7, 2008

Project Name
Grand Liard Marsh and Ridge Restoration

Coast 2050 Strategy
Coastwide Common Strategies

- Dedicated dredging to create, restore or protect wetlands
- Off-shore and Riverine Sand and sediment delivery systems
- Vegetative Plantings

Project Location
Region 2, Barataria Basin, Plaquemines Parish, Bastian Bay and Grand Liard mapping units, vicinity of Triumph

Problem
The Bastion Bay and Grand Liard mapping units were historically structured by a series of north south bayous and associated ridges (i.e., Bayou Long, Dry Cypress Bayou). Currently, the majority of these bayou ridges have eroded. The Grand Liard ridge is the most prominent remaining ridge, and separates the open bays of the Bastian Bay and Grand Liard mapping units. Land loss projections suggest that the remaining bayou bank wetlands will be completely converted to open water by 2050. The USGS land loss rate for 1988 to 2005 is 4.0%/yr.

Proposed Project Features
Material will be dredged from the Mississippi River and placed in confined disposal areas east of Grand Liard Bayou. A ridge feature will be constructed by building substantial retention dikes (i.e., 20-foot crown width at +6 feet NAVD) with material dredged from Grand Liard Bayou. The ridge will grade immediately into a 480-acre back ridge intertidal marsh platform (340 ac creation and 140 ac nourishment). An estimated 3.9 M cy of river materials will be required for marsh creation and nourishment and about 36,000 feet of retention dikes will be required for containment dikes. Due to the geometry of the disposal site, it is not anticipated that tidal creeks will be constructed; however this issue will be evaluated during the design process. Containment dike gapping will be incorporated into the project design and cost estimate. Following consolidation of the marsh platform, vegetative plantings will be installed (including woody species on ridge), although at a reduced density due to project scale.

Goals
Project goals include 1) creating/nourishing marsh and associated edge habitat for aquatic species through pipeline sediment delivery, and 2) restoring the Grand Liard ridge to reduce wave and tidal setup and provide fallout habitat for neotropical migrant birds. Specific phase 0 goals include creating about 340 acres saline marsh, nourishing 140 acres of saline marsh and constructing about 20,000 linear feet (about 30 acres) of maritime ridge habitat.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
   The project is anticipated to benefit about 510 total acres. The project would directly benefit about 480 acres of saline marsh and 30 acres of restored ridge.

2) How many acres of wetlands will be protected/created over the project life?
   The project is estimated to provide net benefits to 263 acres over the project life. It is estimated that about 30% of the project area is currently vegetated wetlands. Using the PPL 16 WVA for 1988-2005, TY20 FWOP acres are projected to be 63. Assuming 50% reduction in loss rate projects FWP TY20 326 acres (Table 1). TY20 Net acres 263 (326ac – 63ac).

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%).*
   It is projected that loss rates for the created marsh (1.99%/year) will be 50% of the loss rate for the extended project boundary from the analysis done for the PPL 16 candidate project. Minor reduction (<<<25%) in land loss rates for marshes immediately west of Bayou Grand Liard are anticipated.

4) Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc.
   Yes. The Grand Liard Ridge is the one of the only remaining north-south ridges left in the project vicinity, and serves to separate the Grand Liard and Bastian Bay mapping units.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
   No net impact or benefit

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
   The project will reduce lateral tidal movement occurring within the mapping unit. The project, combined with on-going barrier island restoration, will benefit southeastern Barataria Bay by restoring structural components of the estuarine system.

Identification of Potential Issues

Oysters, pipeline crossings, mining sediment from the Mississippi River

Preliminary Construction Costs *Preliminary Construction Cost

The construction cost including 25% contingency is approximately $21.9 million. The estimated fully funded cost range is $30 - $35 million.

Preparer of Fact Sheet

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Bayou Grand Liard Ridge and Fringe Marsh Restoration

Project Location

N

Marsh Creation/Nourishment *

Ridge Restoration *

Project Boundary

* denotes proposed features

0.3 0 0.3 0.6 Kilometers

0.3 0 0.3 0.6 Miles

Scale 1:36,000

USGS science for a changing world

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

Image Source:
2004 Digital Orthophoto Quarter Quadrangles

Map ID: USGS-NWRC 2005-11-0129
Map Date: February 28, 2006

PPL18 PROJECT NOMINEE FACT SHEET
FINAL - April 7, 2008

Project Name:
Terrebonne Bay Shoreline Protection/Marsh Creation

Coast 2050 Strategy:
Coastwide Strategy: Maintenance of Bay and Lake Shoreline Integrity
Region 3 Strategy #11- Maintain shoreline integrity of marshes adjacent to Caillou, Terrebonne, and Timbalier Bays

Project Location:
Region 3, Terrebonne Basin, Terrebonne Parish. 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:
The project will halt shoreline erosion and restore some of the marsh that has been lost along a portion of Terrebonne Bay. Shoreline erosion on the northern banks of Terrebonne Bay has been calculated to be between 1 and 85 ft/yr. This rapid loss of land has dramatically increased the tidal prism north of the bay and directly contributes to the ongoing flooding problems of many communities along Bayou Terrebonne including the town of Montegut.

Goals :
Reducing the tidal prism north of Terrebonne Bay will help with flooding in the communities north of Terrebonne Bay and also reduce the spikes of saline water.
Specific Project Goals: 1) Halt shoreline erosion within the project area.
2) Create 170 acres of emergent marsh and nourish an additional 85 acres that would help reduce water exchange between Terrebonne Bay and interior lakes during normal tidal events and small storm events.

Proposed Solutions:
A floatation channel would be dredged parallel to the northern most reaches of Terrebonne Bay and material dredged from that floatation channel would be used to create a +4.0 feet earthen dike for the shoreline protection. That dike would be protected by concrete mats instead of rocks due to the anticipated poor soil quality. The concrete mats would be anchored on both back (marsh side) and front sides (bay side). Subsidence is a major cause of maintenance on rock shoreline protection projects and because the weight of concrete mats are much less than rock, subsidence and therefore maintenance of those mats should be substantially reduced. Approximately 255 acres of marsh would be created behind that shoreline protection. 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 Terrebonne Bay Demonstration Project.

Preliminary Project Benefits:
1) What is the total acreage benefited both directly and indirectly? Approximately 255 acres would be directly benefited via marsh creation and marsh nourishment. In total, 476 acres of marsh and open water habitats would be benefited.

2) How many acres of wetlands will be protected/created over the project life? Approximately 251 net acres of emergent marsh would be created/protected 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%). The anticipated loss rate reduction throughout the area of direct benefits over the project life would be >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, cheniers, etc. This project would help maintain the Terrebonne Bay shoreline as well as many other small lakes and marsh ponds which is a structural component of the coastal ecosystem within Terrebonne Bay. If this becomes part of a comprehensive plan it could help reduce some of the flooding problems in the Montegut area associated with prolonged southern winds and small storms.

5) What is the net impact of the project on critical and non-critical infrastructure? There are no effects on critical or non-critical infrastructure.

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? This project would work synergistically with the recently constructed Terrebonne Bay Demonstration Project (TE-44).

Identification of Potential Issues:
The proposed project several oyster leases and one pipeline within the project boundary.

Preliminary Construction Costs:
The construction cost plus 25% contingency totals $19,609,080. The fully-funded cost range is $25M - $30M.

Preparer(s) of Fact Sheet:
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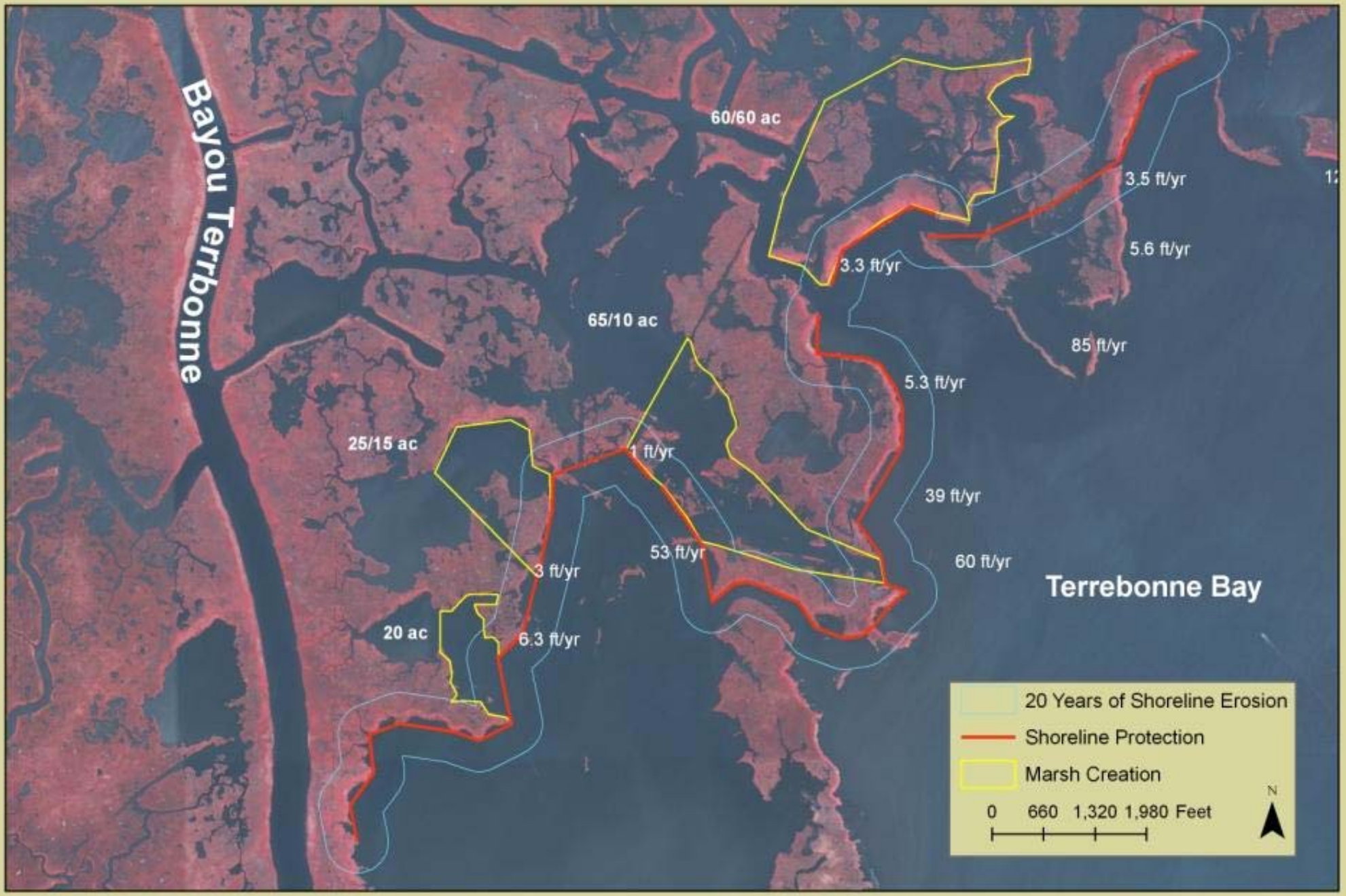
U.S. Fish & Wildlife Service

Louisiana Ecological Services Field Office

Terrebonne Bay Shoreline Protection - Marsh Creation



PPL18 PROJECT NOMINEE FACT SHEET
FINAL - April 7, 2008

Project Name:
Lake Boudreaux-Lake Quitman Shoreline Protection and Marsh Creation

Coast 2050 Strategy:
Regional Strategy #8; Dedicated Dredging for Wetland Creation; # 10 Maintenance of Bay and Lake Shoreline Integrity; Strategic Goal #2; Maintain estuarine gradient to achieve diversity

Project Location:
Region III, Boudreaux Basin, Terrebonne Parish, South Shore of Lake Boudreaux and North Shore of Lake Quitman

Problem:
The USGS calculated the loss rate in this area to be 2.8%/yr as per PPL 17 Southeast Lake Boudreaux Marsh Creation and Terracing Project. The 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 sediment, 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. This saline water has caused the marshes along the northern banks of Lake Boudreaux to convert from fresh/intermediate marshes to intermediate/brackish marshes and the cypress swamps in the upper reaches to the basin to convert to fresh and intermediate marshes. Lake Boudreaux and Lake Quitman are nearing coalescence which will increase the fetch associated with the wind induced waves and ultimately increase the wave energy on Petite Caillou Ridge and LA Hwy 56.

Goals:
Stop the coalescence of Lake Boudreaux and Lake Quitman by restoration of lake rims. This would reduce erosion rates along the Petit Caillou Ridge and marsh located next to Hwy. 56. This would also increase the distance the high saline waters would have to travel to reach 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 12,600 ft of the southern shoreline of Lake Boudreaux and 7,000 ft of the north shore of Lake Quitman. 3) Create 205 acres of marsh and nourish 95 acres of marsh along the southern shoreline of Lake Boudreaux and north shore of Lake Quitman. 4) Reduce the wave erosion impacting the Petite Caillou Ridge.

Proposed Solutions:
1) Construct 19,600 LF of hard shoreline protection along the southern shoreline of Lake Boudreaux and northern shoreline of Lake Quitman. Concrete matting or Gabion Mats could be used as shoreline protection and would further promote oyster growth near the shoreline. There would be some maintenance needed on the concrete or gabion matting.

2) Behind the shoreline protection, marsh would be created and nourished through the deposition of hydraulically dredged material from a borrow site located in Lake Boudreaux. Sacrificial

terraces could be created on the eastern side of the created marsh areas to protect those marshes until vegetation were well established.

Preliminary Project Benefits:
1) What is the total acreage benefited both directly and indirectly? The total acreage directly benefited would be creation of 205 acres of marsh, the nourishment of 95 acres of marsh, and the protection of those 300 acres of emergent marsh. Indirect benefits 2,400 acres of open water and marsh east of the project which includes the reduction of shoreline erosion along the Petite Caillou Ridge (Hwy. 56).

2) How many acres of wetlands will be protected/created over the project life? 2) The net benefit over the life of the project would be an increase of 172 acres. Those marshes would be protected by hard shoreline protection.

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 indirectly protect portions of the Petite Caillou Ridge, Hwy 56, and oil and gas infrastructure.

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 is one oyster lease near the navigational channel located between Lake Boudreaux and Lake Quitman but should not be affected by proposed project features.

Preliminary Construction Costs:
Construction cost including 25% contingency is estimated to be $17,069,941. The fully-funded cost range is $25 - $30M.

Preparer(s) of Fact Sheet:
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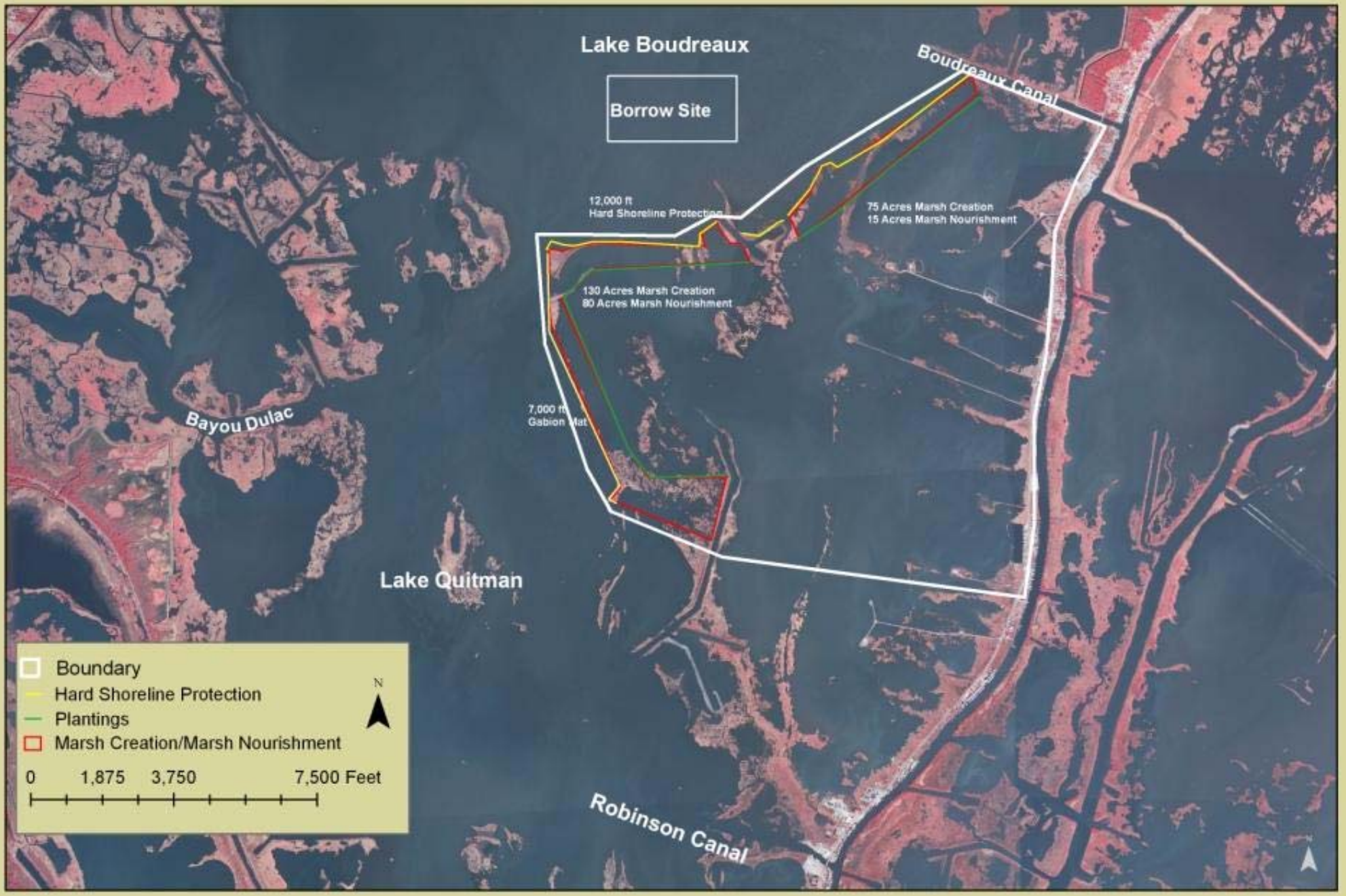
U.S. Fish & Wildlife Service

Louisiana Ecological Services Field Office

LAKE BOUDREAUX-LAKE QUITMAN SHORELINE PROTECTION AND MARSH CREATION



PPL18 PROJECT NOMINEE FACT SHEET
4/7/2008 - FINAL

Project Name
Central Terrebonne Freshwater Enhancement Project

Coast 2050 Strategy
Region 3, Stategy 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 Dularge 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 Dularge 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.

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.

Proposed Solutions
Structure consisting of rock barge bay would be constructed to reduce the size of the opening by up to 90% 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 to increase freshwater introduction to Lake Decade by an estimated 500 cfs and provide maintenance dredging at Minors Canal to maintain optimal freshwater conveyance from the GIWW into Lake Decade.

Preliminary Project Benefits
1) *What is the total acreage benefited both directly and indirectly?* The total acreage benefited from the salinity reduction is expected to be approximately 66,298 acres consisting of 30,129 acres of marsh.
2) *How many acres of wetlands will be protected/created over the project life?* The acres of wetlands created/protected over the project life is estimated at 507 acres, with 272 acres

resulting from salinity reduction of 25% and 235 acres resulting from increased freshwater introduction.

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%).* The anticipated land loss rate reduction throughout the area of direct benefits over the project life is <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, cheniers, etc.?* The project will reestablish partial historic ridge function to the Bayou Dularge ridge.
5) *What is the impact of the project on critical and non-critical infrastructure?* The project does not impact critical or non-critical infrastructure.
6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* The project provides a synergistic effect with the Penchant Basin Natural Resources Project (TE-34), which improves freshwater conveyance from the north to the Central Terrebonne marshes, while this project functions to reduce salinity intrusion into the area from the south.

Identification of Potential Issues

The proposed project has the following potential issues: LDNR indicated that there are pipelines in the project area.

Preliminary Costs

The construction cost plus 25% contingency estimated is $11,985,166 and the estimated fully funded cost range is $20-25 million.

Preparer of Fact Sheet

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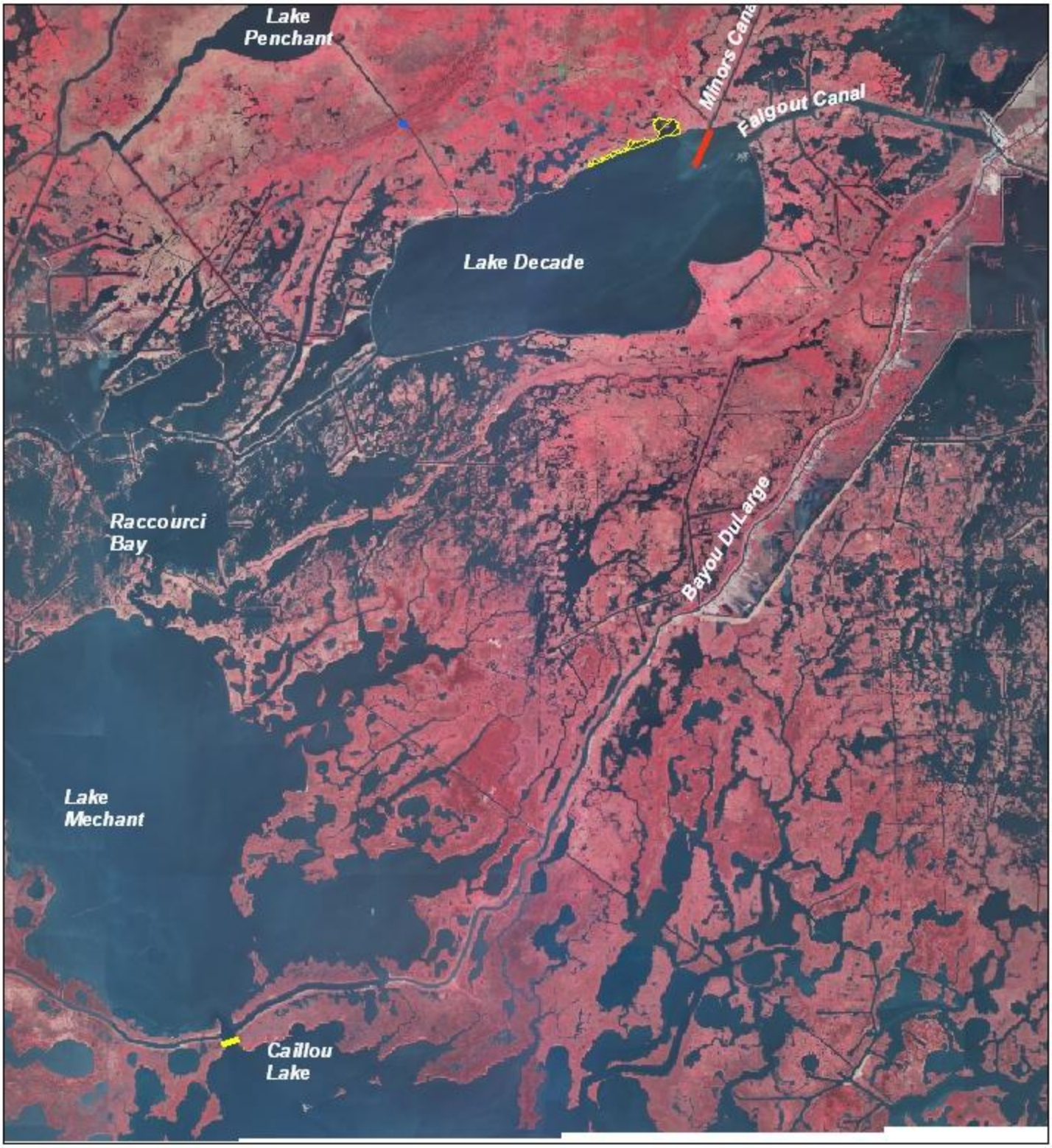

Legend

- Grand_Pass_Structure
- Channel_Maintenance
- Liners_Canal_Structure
- Marsh_Creation

N

0 3,000 6,000 12,000 18,000 24,000 Feet

Central Terrebonne Enhancement

Terrebonne Parish, Louisiana

PPL-18

PPL18 PROJECT NOMINEE FACT SHEET
FINAL
April 7, 2008

Project Name
Point Chevreuil Shoreline Protection

Coast 2050 Strategy
Regional: #10. Protect, restore and maintain ridge functions; #11. Maintain shoreline integrity and stabilize critical shoreline areas.
Coastwide: Maintenance of gulf, bay and lake shoreline integrity; maintain, protect or restore ridge functions.
Mapping Unit: East Cote Blanche Bay (73) - Protect Bay/Lake Shorelines
Wax Lake Wetlands (60) - Protect Bay/Lake Shorelines

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

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

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

Proposed Solutions:
Construction of a foreshore rock dike or rock revetment parallel to the existing eastern shoreline of East Cote Blanche Bay, from Bayou Sale southward to Point Chevreuil and the northern shoreline of Atchafalaya Bay from Point Chevreuil eastward to an existing pipeline crossing. St. Mary Parish has secured funding from CIAP for approx. 4,250 feet of this shoreline and has targeted the tip of Point Chevreuil as priority. The remaining linear footage of shoreline is approximately 15,750 linear feet (~3.0 miles). It is possible that marsh can be created with the fill material from dredging of an access channel to accommodate construction equipment, where needed. This created area will be from near the existing shoreline out to the rock dike.

Preliminary Project Benefits:
1) What is the total acreage benefited both directly and indirectly? The proposed project would directly benefit approximately 145 acres which includes 98 acres of abating the annual shoreline loss of 13.5 ft/yr and 47 acres of marsh creation behind the shore protection. Indirectly, approximately 702 acres of intermediate marshes could benefit by preventing the breaching of an oilfield and pipeline canal along the north shore of Atchafalaya Bay.

2) How many acres of wetlands will be protected/created over the project life? Approximately 140 acres would remain at the end of the project life. The shoreline protection component should stop the average erosion rate of 13.5 feet per year and protect 98 acres. Dredge material would create 47 acres behind the shoreline protection, of which 42 acres should remain after 20 years due to a low interior wetland loss

rate.

3) What is the anticipated loss rate reduction throughout the area of direct benefits over the project life? Shoreline protection will be provided by some form of armored structure which, when properly designed and installed, has proven to reduce erosion rates by 100%. Therefore, the anticipated loss rate reduction throughout the area of direct benefits over the project life should exceed 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, cheniers, etc? Project features will provide protection to and maintain the small remnant of natural ridge/chenier function that currently exists along the eastern bank of the once-defined Bayou Sale channel.

5) What is the net impact of the project on critical and non-critical infrastructure? The project would prevent the breaching and impending tidal exchange of an oilfield and pipeline canal with Atchafalaya Bay.

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? The project will have an important synergistic effect with the TV-20 Bayou Sale CWPPRA-approved Project by extending similar benefits to the southern most extent of the East Cote Blanche Bay shoreline.

Identification of Potential Issues:
The only significant potential issue expected to impact project implementation is the possible presence of flow lines. Oilfield activity maps provided by USGS, DNR, and CEI for the TV-20 Bayou Sale Project indicate there is only 1 flow line and 1 pipeline (in the same channel) running north and south at the eastern terminus of the project along Atchafalaya Bay. The marsh creation component of the project will be designed such that created wetlands will not encroach on the existing shoreline thereby avoiding any reclamation issues. Adjacent landowners have provided letters acknowledging full support of the project.

As a result of the CWPPRA Joint Workgroup Meeting held on April 3, 2008, the following potential issue was flagged:
O&M: Due to rock riprap being used as the primary shoreline protection component.

Preliminary Construction Costs:
The estimated construction cost plus 25% contingency for this project is approximately $12,145,206. The estimated fully funded cost range is $15 - $20 million.

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Point Chevreuil Shoreline Protection
St Mary Parish, Louisiana
N
Bayou Sale
East Cote
Blanche Bay
Hog Bayou
Shoreline Protection
Near Existing Shoreline
Pointe Chevreuil
Shoreline Protection
Off Shoreline to allow
Sediment to rebuild marsh
along existing shoreline.
Atchafalaya Bay
Shoreline Protection
TV-20 Bayou Sale Shoreline Protection
0
3000
6000 Feet

approximately 450 acres of emergent brackish to saline marsh surrounding the bay by maintaining the integrity of the bay shoreline. Therefore, a total acreage potentially impacted would be 570 acres.

2) *How many acres of wetlands will be protected/created over the project life?* The planting would create 7 acres of emergent marsh. Assuming a 50% reduction of land loss, approximately 55 acres would be protected directly.
3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life?* Shoreline protection will be provided by vegetative plantings, which has been shown to reduce erosion rates by 100%, and as evidenced in the Boston Canal and Oaks Avery Projects, expand towards Vermilion Bay. Therefore, the anticipated loss rate reduction of direct and indirect benefits over the project life should exceed 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, cheniers, etc.?* Project features will provide protection and serve to maintain a significant critical section of lake rim on the Vermilion Bay shoreline.
5) *What is the net impact of the project on critical and non*-critical infrastructure? The project would serve to protect inland oilfield well location from exposure to open bay conditions.
6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* This project would compliment the results of the Four Mile Canal Terracing and Sediment Trapping and Little Vermilion Bay Sediment Trapping Projects (TV-18 and TV-12, respectively).

Identification of Potential Issues:
DNR landrights has identified one potential landowner that could be an issue.

Preliminary Construction Costs:
Estimated construction costs plus 25% contingency = $1,100,000 million. The fully funded cost range is $0 - $5 M.

Preparer(s) of Fact Sheet:
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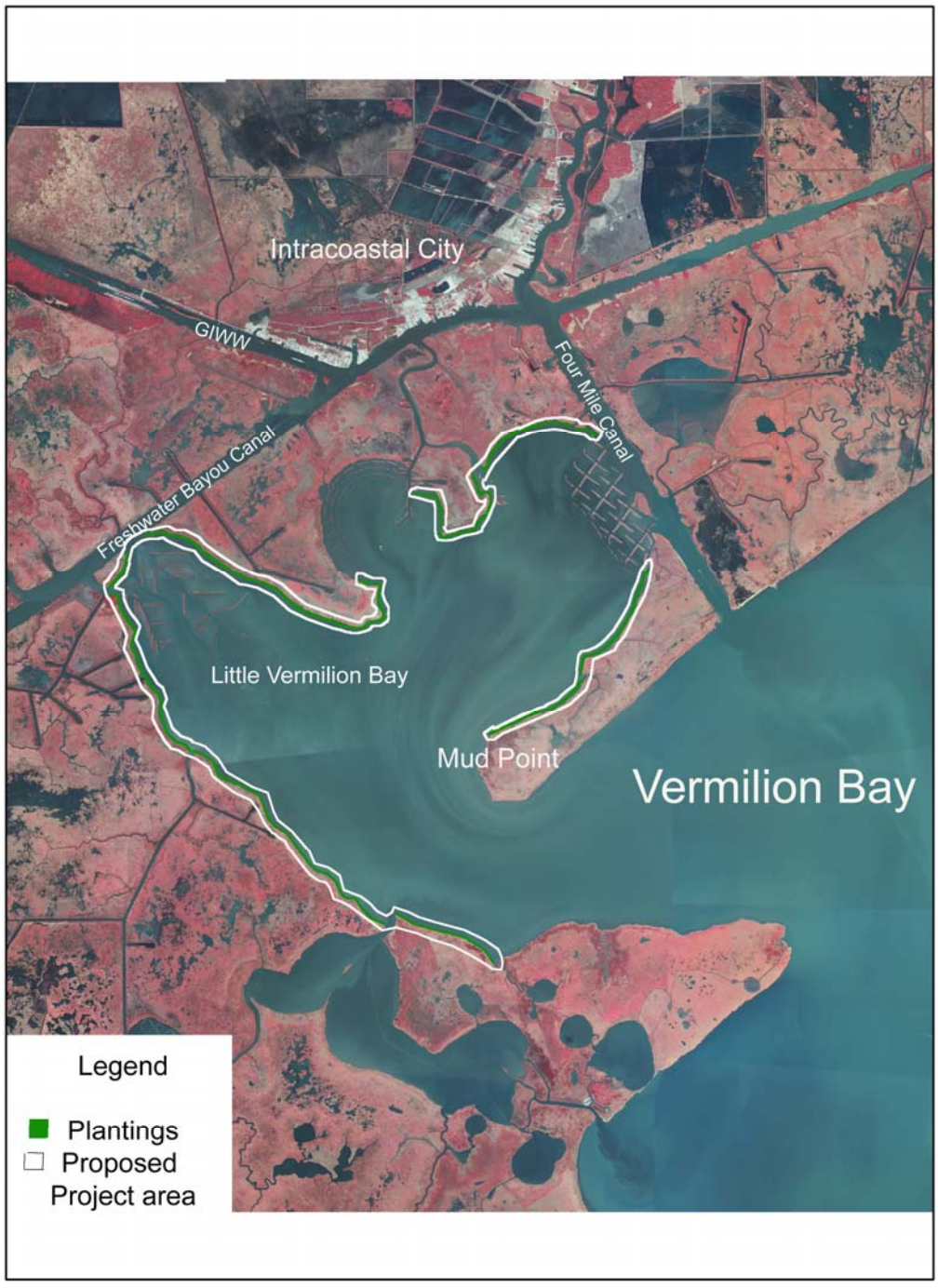
Northwest Vermilion Bay Vegetative Planting and Maintenance

PPL 18



PPL18 PROJECT NOMINEE FACT SHEET
FINAL

April 7, 2008

Project Name:
Northwest Vermilion Bay Vegetative Planting and Maintenance (R3-TV-01)

Coast 2050 Strategy:
Region 3. #12. Maintain shoreline integrity and stabilize critical areas

Project Location:
Region 3, Teche/Vermilion, Vermilion Parish, Northeastern shore of Vermilion Bay extending from Mud Point, around Little Vermilion Bay to State Wildlife Refuge.

Problem:
Continued shoreline retreat in Vermilion Bay is threatening the integrity of Bay rim, which if compromised would expose surrounding marsh to open bay energies. In addition, several oil and gas canals within the project area would be opened to Vermilion Bay, if the shoreline were compromised. Comparing 1998 and 2005 photography of three locations within the project area estimated an annual shoreline loss of 8 ft/yr for this area.

Goals:
This project would stabilize much of the North Vermilion Bay shoreline through a series of intensive low-cost vegetative plants.

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

The project calls for annual vegetative planting of impacted areas along the north shore of Vermilion Bay through an intensive maintenance-planting program. A reconnaissance of northwestern Vermilion Bay would be conducted to determine the most suitable locations for the vegetative planting of smooth cordgrass. Five rows of smooth cordgrass plugs would be installed on two-foot centers. During FY08, vegetative planting would be installed along 30,000 linear feet within the 6-mile length of Vermilion Bay shoreline 5 rows at 2'OC * 30,000 LF of shoreline = 75,000 plugs). During the next four years, maintenance plantings (assume replacement of 15%, or 11,250 plugs) would be conducted throughout the site to ensure project success.

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

1) *What is the total acreage benefited both directly and indirectly?* The proposed project would directly benefit approximately 110 acres by abating the annual shoreline loss of 8 ft/yr. Indirectly,

PPL 18 PROJECT NOMINEE FACT SHEET
FINAL
April 7, 2008

Project Name:
Marone Point Shoreline Protection

Coast 2050 Strategy:
Coast wide: Maintenance of Bay and Lake Shoreline Integrity
Regional: 11. Maintain shoreline integrity and stabilize critical shoreline areas of the Teche-Vermilion system including the gulf shoreline
Mapping Unit: (East Cote Blanche Bay) 73. Protect Bay/Lake Shorelines

Project Location:
The project is located in Region 3, Teche/Vermilion Basin, St. Mary Parish, along the northern shoreline of East Cote Blanche Bay and eastern shoreline of West Cote Blanche Bay.

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

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

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

Preliminary Project Benefits:
1) What is the total acreage benefited both directly and indirectly? The proposed project would directly benefit approximately 209 acres by eliminating the annual shoreline loss of 17.5 ft/yr. Approximately 410 acres of intermediate marshes would benefit indirectly by preventing the breaching of, and tidal exchange through, several natural bayous and open water ponds lying adjacent to the E Cote Blanche Bay shoreline. Therefore the total acreage potentially impacted would be 619 acres.

2) How many acres of wetlands will be protected/created over the project life? Approximately 209 acres would be protected at the end of the project life due to the shoreline protection component.

3) What is the anticipated loss rate reduction throughout the area of direct benefits over the project life? Shoreline protection will be provided by some form of armored structure which, when properly designed and installed, has proven to reduce erosion rates by 100%. Therefore, the anticipated loss rate reduction throughout the area of direct benefits over the project life should exceed 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, cheniers, etc? Project features will provide protection and serve to maintain a significant critical section of lake rim on the East Cote Blanche Bay shoreline.

5) What is the net impact of the project on critical and non-critical infrastructure? The project would serve to protect inland oilfield well locations from exposure to open bay conditions.

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? The project features will provide a synergistic effect with the TV-04 Cote Blanche Hydrologic Restoration Project, and TV-20 Bayou Sale Ridge Protection Project by extending shoreline protection around the entire northern shore of East Cote Blanche Bay, ultimately providing contiguous protection to thousands of acres of deteriorating marsh in St. Mary parish.

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

As a result of the CWPPRA Joint Workgroup Meeting held on April 3, 2008, the following potential issues were flagged:
Pipelines/Utilities: Recommended by LDNR Real Estate Section.
O&M: Due to rock riprap being used as the primary shoreline protection component.

Preliminary Construction Cost:
The construction cost estimate plus 25% contingency for this project is approximately $12,029,378. The estimated fully funded cost range is $15 - $20 million.

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Marone Point Shoreline Protection
St. Mary Parish Louisiana

Legend

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

N

0 1,950 3,900 7,800 11,700 15,600 Feet

PPL18 PROJECT NOMINEE FACT SHEET
7 April 2008 - FINAL

Cameron-Creole Freshwater Introduction Project

Coast 2050 Strategy
Regional Strategy 8: *Restore historic hydrologic and salinity conditions throughout Region 4 to protect wetlands from hydrologic modification.* Maintain estuarine gradient to achieve diversity.

Project Location
Region 4, Calcasieu/Sabine Basin, Cameron Parish, east of Calcasieu Lake west of Gibbstown Bridge and Highway 27.

Problem
Virtually all of the project area marshes have experienced increased tidal exchange, saltwater intrusion, and reduced freshwater retention associated with the Calcasieu Ship Channel and the GIWW. Between 1952 and 1974, this area is thought to have had some of the highest loss rates of any area in coastal Louisiana. Some of that loss is linked to natural disturbances such as Hurricane Audrey, Hurricane Carla, and the severe droughts of the early 1960's. However, because of man-made alterations to the hydrology those marshes were unable to adapt and repair themselves through natural processes. To reduce impacts associated with the Ship Channel, the Cameron-Creole Watershed Project was completed in 1974. That project has successfully reduced salinities and increased marsh productivity. Recently, Hurricane Rita was responsible for additional marsh loss in the Cameron-Creole area. It is unlikely that the area will recover from those losses without comprehensive restoration efforts. Repairs to the Cameron-Creole Watershed Project structures and levees are being completed, however, the project area remains disconnected from freshwater, sediments, and nutrients by the GIWW.

Goals
The project would restore the function, value, and sustainability to approximately 21,139 acres of marsh and open water.

Proposed Solutions
Hourly water level data collected from the GIWW and Grand Bayou between April 1997 and May 2004 was used to calculate an average flow rate into the project area. Based on that data, approximately 45 cfs would flow through each 48 inch culvert. Conventional structures demonstrate the projects benefits and are applicable; however structure type and design would be completed during E & D and target the most appropriate flow rates. The Creole, Montesano, and Hebert Precht canals would be dredged to accommodate flows. Additionally, approximately 65,000 linear feet of terracing and 8,000 linear feet of shoreline protection would be provided, and 200 acres of plantings would be allocated (see project map). Planting acres would be selected as appropriate from the 785 acre shaded area to assist in recovery. Structures and canals would have periodic maintenance to remove any deposited sediments and that material would be used beneficially (i.e., spray dredging).

Preliminary Project Benefits
The proposed freshwater introduction project would provide increased organic productivity and sediment to the project area as well as restore/improve hydrologic conditions.

What is the total acreage benefited both directly and indirectly?
The total land acreage benefited both directly and indirectly is approximately 10,569 acres.

How many acres of wetlands will be protected/created over the project life?
442 net acres would be protected/created over the 20 year project life. 302 of those acres were calculated using the Boustany model on freshwater introduction benefits (250 cfs); 100 acres result from the vegetative plantings; and 40 acres were created with terracing (65,000 linear feet with 3:1 slopes, 9' crown, 3'out of water).

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

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 proposed project would protect and create wetlands that provide critical protection to the Cameron-Creole levee and the east shoreline of Calcasieu Lake.

What is the net impact of the project on critical and non-critical infrastructure?
The proposed project would provide protection to the Cameron-Creole levee.

To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? The proposed project is part of the original Cameron-Creole Watershed Management project and would compliment it by restoring the historic flow of freshwater through the system allowing the existing structures to remain open for longer time periods. The proposed project is also synergistic with the Cameron-Creole Plugs project (CS-17) and the Cameron-Creole Maintenance project (CS-04a) implemented to reduce salinities and increase marsh production.

Identification of Potential Issues
There are no potential issues identified at this time.

Preliminary Construction Costs
The estimated construction cost plus 25% contingency is $9,574,925 and the fully funded cost range is $15 – 20 million.

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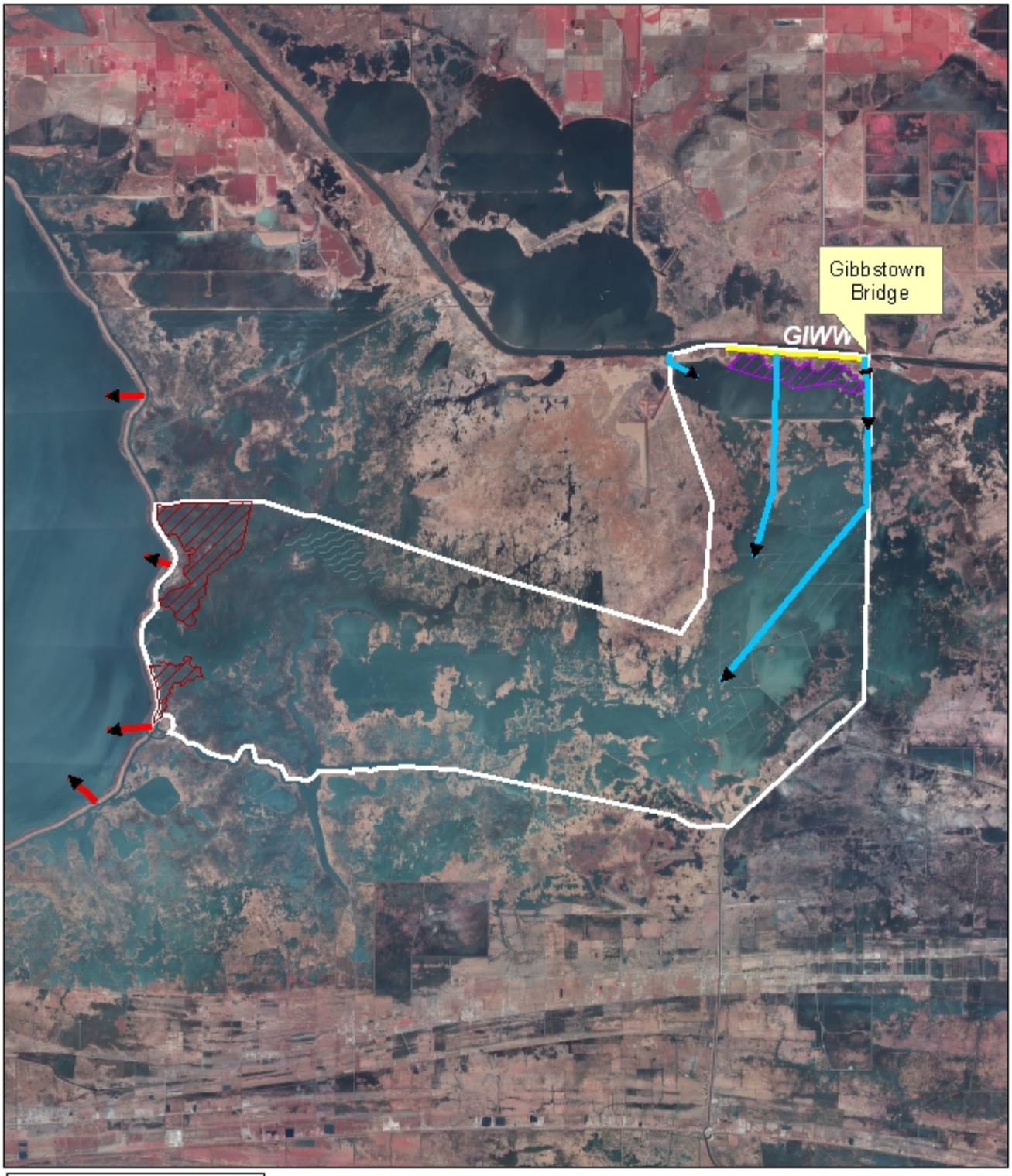

Legend
- Freshwater_Introduction
- Drainage
- Shoreline_Protection
- Terraces_Field
- Vegetative_Planting_Area
- Project_Boundary

N

0 3,4006,800 13,600 20,400 27,200
Feet

Cameron-Creole Freshwater Introduction
PPL 18
Cameron Parish, Louisiana

PPL18 PROJECT NOMINEE FACT SHEET
FINAL
April 7, 2008

Project Name:
Black Bayou Terraces (R4-CS-01)

Coast 2050 Strategy:
Restore and Sustain Wetlands *(Regional Ecosystem Strategy)*
Terracing *(Coastwide Common Strategy)*
Vegetative Plantings *(Coastwide Common Strategy)*

Project Location:
Region 4, Calcasieu/Sabine Basin, Calcasieu and Cameron Parish, South side of the GIWW, West of Gum Cove Ridge

Problem:
Saltwater intrusion into the surrounding marsh and canals from the GIWW coupled with erosion caused by wave action from nearby boats, wind, and tides has caused the historical land loss within this area. Aerial photography since the late 1930's documents the conversion of approximately 2,700 acres of emergent marsh to open water within the proposed project area, or approximately 75% of the emergent marsh has converted to open water over the last 70 years within this proposed project area (ocular estimate from historical photography). The CWPPRA sponsored Black Bayou Hydrologic Restoration Project (CS-27) features addressed the saltwater intrusion problem, however the expansive open water area identified by this project continues to experience shoreline erosion and coalescence of smaller water bodies into one 2,700 acre pond. This expansion is threatening the integrity of the western levee boundary at this time. The CWPPRA sponsored Plowed Terrace Demonstration Project (CS-25), coupled with mitigation terraces within this area has shown the usefulness of terracing to reduce wave fetch, however more terraces are needed.

Goals:
(1) Restore coastal marsh habitat, and
(2) Reverse the conversion of wetlands to shallow open water in the project area.

Proposed Solutions:
Construct up to 261,000 linear feet of earthen terraces, oriented in such a way as to reduce wind generated wave fetch. Water depths throughout the project area average 1-1.5 deep. In addition, the terraces would be planted with appropriate species of wetland vegetation to reestablish the plant productivity needed to rebuild the organic peat for marsh vertical accretion and expansion. Planting density is projected to be double rows of plugs on each side of the terrace on a 5' spacing.

Preliminary Project Benefits:
1) *What is the total acreage benefited both directly and indirectly?* At 261,000 LF; 5 foot crown, 1:5 side slopes, 3' out of water; 261,000 LF * 35' = 9,135,000 square feet / 43,560 = 210 acres initially constructed, and approximately 500 acres of brackish to intermediate emergent marsh surrounding the open water will be benefited indirectly. Therefore, a total acreage potentially impacted would be 710 acres.
2) *How many acres of wetlands will be protected/created over the project life?* No loss to terraces, thus 210 acres created. A 50% loss rate reduction is assumed for the indirect

acres benefited or; (-0.82% per year) of the 500 initial indirect benefit acres there would be 65 net acres (FW vs. FWO) after 20 years, thus 210 + 65 = 275 Total acres net.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life?* No loss applied to terraces = 100% loss rate reduction over the 20-year life of the project, or >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, cheniers, etc.?* These terraces will maintain the western artificial levee boundary of this 3,200-acre area through the reduction of wave-induced erosion.
5) *What is the net impact of the project on critical and non*-critical infrastructure? The Black Bayou Gas Field is immediately adjacent to the project area, and this project will re-establish and help stabilize the emergent marsh that adjoins this critical infrastructure.
6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* This project would compliment the results of the Black Bayou Hydrologic Restoration (CS-27) and Plowed Terrace Demonstration (CS-25), as CS-27 reduced saltwater intrusion and CS-25 demonstrated the usefulness of terraces in this area.

Identification of Potential Issues:
No known issues at this time.

Preliminary Construction Costs:
Estimated construction costs plus 25% contingency = $6,970,750. The fully funded cost range is $15 -$20 M.

Preparer of Fact Sheet:
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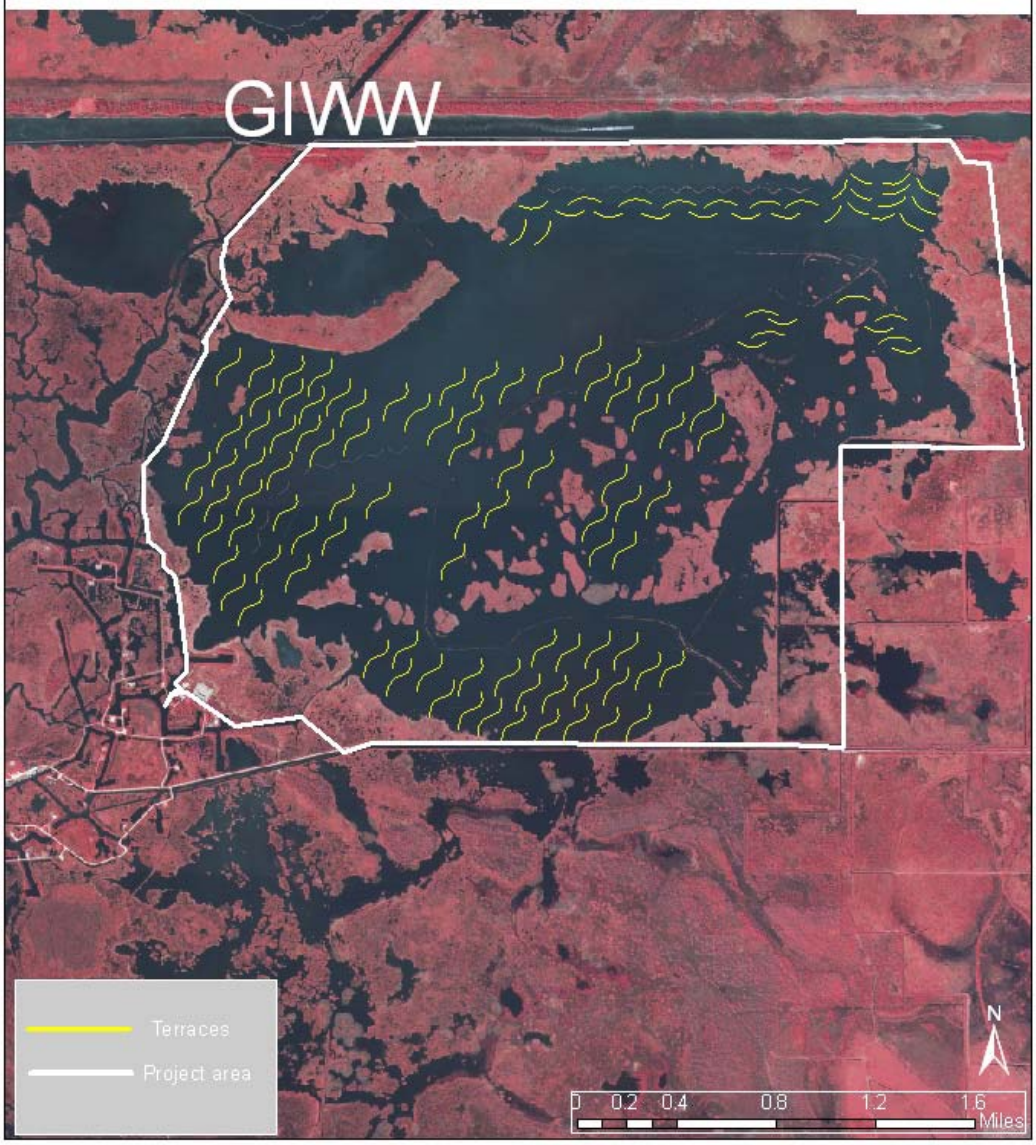
Black Bayou Terraces

Calcasieu and Cameron Parishes, LA

PPL **18** nominee



PPL18 PROJECT NOMINEE FINAL FACT SHEET
FINAL – April 7, 2008

Project Name: East Cove Marsh Creation Project

Coast 2050 Strategy:
Regional Strategy: Use dedicated dredging or beneficial use of sediment for wetland creation or protection.

Project Location:
Region 4, Calcasieu-Sabine Basin, Cameron Parish, 1.5 miles north of Cameron, in the southwestern portion of the Cameron-Creole Watershed on the Cameron Prairie NWR.

Problem:
Former project area brackish marshes have converted to open water due to subsidence and saltwater intrusion from the Calcasieu Ship Channel. The Cameron-Creole Watershed Management Project was completed in 1989 to relieve the saltwater intrusion problem but has not succeeded in revegetating the area. Hurricane Rita in 2005 breached the watershed levee scouring the marsh and allowing higher Calcasieu Lake salinities to enter the watershed causing more land loss. Sediment and water level drawdowns are needed to restore shallow open water areas to marsh.

Goals:
The project purpose is to recreate approximately 604 acres of marsh via beneficial use of maintenance dredged material from the Calcasieu Ship Channel.

Proposed Solution:
Place material beneficially from normal maintenance dredging of the Lower Calcasieu River from Mile Points 5 to 12 in two disposal areas in the southwest portion of the Cameron-Creole Watershed. The Corps of Engineers, New Orleans District dredges approximately 1.88 million cubic yards of maintenance material every 2 years from this reach. The project would transport approximately 3.76 million cubic yards of dredged material to two open water areas, totaling 604 acres, to restore a net 509 acres of marsh in two cycles [Cycle 1 (East) equals 228 net acres; Cycle 2 (West) equals 281 net acres). Following construction, retention levees would be degraded, man-made bayous (trenasses) constructed, and a 50-foot-wide perimeter of smooth cordgrass plantings installed for estuarine fisheries access and to achieve a functional marsh.

Preliminary Project Benefits:
1) What is the total acreage benefited both directly and indirectly? The project would benefit 604 acres (i.e., 289 ac east cycle and 315 ac west cycle) of brackish and saline marsh and open water (August 6, 2007, WVA).

2) How many acres of wetlands will be protected/created over the project life? Based on the Wetland Value Assessment conducted for this PPL17 candidate project, 509 net acres of marsh would result from this project over the 20-year 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%)?* Interior shoreline erosion rates, although are minimal, would be stopped, and created marsh would assume a 50% reduction loss rate; therefore, the anticipated loss rate reduction would be approximately 50-74%.

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? This project would support the southern shoreline of Calcasieu Lake and the Cameron-Creole watershed levee. Although the Cameron-Creole watershed levee will be maintained by the Cameron Creole Maintenance project (CS-04a), protection provided by this marsh creation project could reduce those maintenance costs. However, the Cameron-Creole Watershed levee would not receive significant protection from this project.

5) What is the net impact of the project on critical and non-critical infrastructure? The marsh creation project will help support the watershed levee of the Cameron-Creole Watershed.

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? The project is synergistic with the Cameron-Creole Watershed Management Project, the Cameron-Creole Plugs project (CS -17), and the Cameron-Creole Maintenance project (CS-04a) all of which were all implemented to relieve the saltwater intrusion problem. Marsh would be reestablished in open water areas that have not come back after the implementation of the Cameron-Creole watershed project.

Identification of Potential Issues:
Seed oyster grounds within Calcasieu Lake could be a potential issue when determining a corridor for the dredge pipeline.

Project Costs:
The estimated construction cost including 25% contingency is $ 13,640,423. The fully-funded cost range is $15M - $20M.

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East Cove Marsh Creation
(PPL18 Nominee)

Earthen Retention Dike *

Earthen Weir *

Marsh Creation *

Project Boundary *

* denotes proposed features

0.5 0 0.5 Kilometers

0.5 0 0.5 Miles

Scale 1:33,000

USGS science for a changing world

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

Image Source:
2005 Digital Orthophoto Quarter Quadrangles

Map ID: USGS-NWRC 2008-11-0169
Map Date: March 19, 2008

PPL18 PROJECT NOMINEE FACT SHEET
7 April 2008 - FINAL

Freshwater Bayou Marsh Creation Project

Coast 2050 Strategy
Regional Strategy 6: *Marsh Creation by Sediment Delivery or Dedicated Dredging.*

Project Location
Region 4, Mermentau Basin, Vermilion Parish, Big Marsh Mapping Unit, area west of Freshwater Bayou and north of the Freshwater Bayou lock.

Problem
This area was damaged by Hurricane Rita. Currently, Freshwater Bayou threatens to breach into the large interior open water and establish a hydrologic connection that previously did not exist. This would exacerbate the environmental problems affecting marshes in this area. Interior marsh loss will likely increase without construction of the proposed project.

Goals
The goal is to create approximately 376 acres of marsh via beneficial use of maintenance dredged material from the mouth of Freshwater Bayou or other appropriate sources.

Proposed Solutions
Beneficially use dredge material and/or dedicated dredge material to rebuild approximately 376 acres of marsh that was converted to open water by Hurricane Rita. Approximately 640,000 yds^3 of material is dredged from Freshwater Bayou (lock to the Gulf) every three years. The proposed project would beneficially use that material or material identified from other sources to create marsh in two phases. Phase 1 would include approximately 176 acres of fragmented marsh that is in immediate need of repair. Phase 2 would include creation and marsh nourishment of approximately 200 acres of fragmented marsh and shallow open water (approximately 50% of the area identified in yellow on the map). Average water depths are approximately 1 foot and the target marsh elevation would be 1.1 feet NAVD88. Mobilization and demobilization costs may be conserved depending on the location and availability of source material identified for each phase. Contingency areas have been identified for flexibility based on unforeseen circumstances.

Preliminary Project Benefits
The proposed project would create approximately 376 acres or more of interior marsh and nourish approximately 198 acres. That marsh would restore and maintain a wetland buffer between the open water of the Mermentau Basin and Freshwater Bayou.

What is the total acreage benefited both directly and indirectly?
A total of 574 acres of marsh, shallow water and mud flats would be created. Approximately 198 acres of marsh and shallow open water areas would be nourished.

How many acres of wetlands will be protected/created over the project life?
Assuming a 50% reduction in the 1988-2006 loss rate (Coast 2050 Report: Appendix F) applied to the marsh creation acres and adjacent marsh nourished marsh, a **net 375 acres** would be protected/created over the 20 year project life.

What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (<25%, 25-49%, 50-74% and >75%)?
Created and nourished marsh would assume a 50% reduction in loss rate; therefore, the anticipated loss rate reduction would be approximately **50-75%**.

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?
No.

What is the net impact of the project on critical and non-critical infrastructure?
No infrastructure would be impacted by the proposed project.

To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?
The proposed project is synergistic with the Freshwater Bayou Wetland Protection Project (ME-04), which was implemented to reduce tidal erosion of the organic soils.

Identification of Potential Issues
LDNR indicated that there are pipelines in the project area.

Preliminary Construction Costs
The construction cost plus 25% contingency is estimated at $11,319,000 and the fully funded cost range is $15 – 20 million.

Preparer of Fact Sheet
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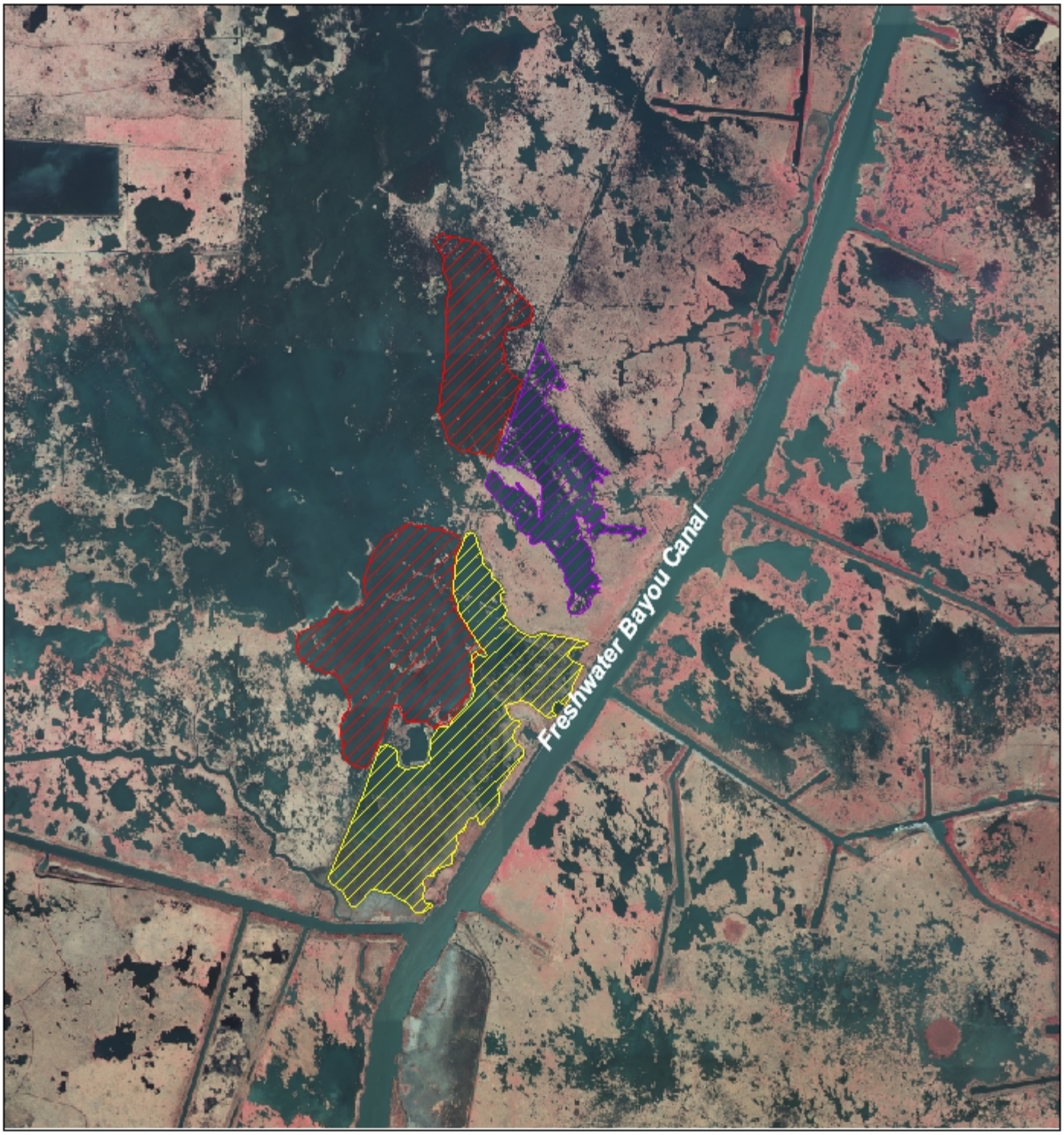

Legend

- Marsh Creation/Nourishment Phase 1
- Marsh Creation/Nourishment Phase 2
- Marsh Creation/Nourishment Contingency Area

Freshwater Bayou MC/Nourishment
PPL 18
Vermilion Parish, Louisiana

N

0 1,0002,000 4,000 6,000 8,000
Feet

PPL18 PROJECT NOMINEE FACT SHEET
FINAL
April 7, 2008

Project Name:
Terracing at Dyson's Ditch, R4-ME-02

Coast 2050 Strategy:
Restore and Sustain Wetlands *(Regional Ecosystem Strategy)*
Terracing *(Coastwide Common Strategy)*
Vegetative Plantings *(Coastwide Common Strategy)*

Project Location:
Region 4, Mermentau Basin, Vermilion Parish, between the Gulf of Mexico and Pecan Island.

Problem:
The mash is broken and subsided as a result of saltwater intrusion and drainage and issues that have since been remedied. The project boundary encompasses approximately 16,000 acres. An estimated average loss of 32% (5,200 acres) has occurred over the last 53 years is approximately 125 acres per year (ocular estimate of Britsch and Dunbar 1996).

Goals:
1) Restore coastal marsh habitat, and
2) To reduce wave fetch and increase marsh through the construction of terraces. This can decrease turbidity, decrease erosion, and increase submersed aquatics, and marsh.

Proposed Solutions:
Project would include construction of earthen terraces in open water areas throughout the project area for a minimum of 200,000 linear ft, with the exception of two areas that were previously small lakes that will remain open water. Water depths throughout the project area average 1-1.5 deep. In addition, the terraces would be planted with appropriate species of wetland vegetation to reestablish the plant productivity needed to rebuild the organic peat for marsh vertical accretion and expansion. Planting density is projected to be double rows of plugs on each side of the terrace on a 5' spacing. The terraces would consist of dredging bottom material deposited in 200-400 ft long berms with 5 ft crowns, at a height of 3.0 ft above water level. Terraces would be non-linear oriented in a way to reduce wind generated wave fetch and planted with species appropriate to rebuild the organic peat for marsh vertical accretion and expansion.

Preliminary Project Benefits:
1) *What is the total acreage benefited both directly and indirectly?* At 200,000 LF; 5 foot crown, 1:5 side slopes, 3' out of water; 200,000 LF * 35' = 7,000,000 square feet / 43,560 = 161 acres initially constructed, and approximately 500 acres of emergent brackish to intermediate marsh surrounding the open water will be benefited indirectly. Therefore, a total acreage potentially impacted would be 661 acres.
2) *How many acres of wetlands will be protected/created over the project life?* Previous terrace construction in the area has shown estimated losses of less than 10% (which occurs most commonly on those terraces exposed to open water areas greater than 600' wide). As a result, an average 5% loss rate is applied, or 161 initial acres * -0.05% loss rate = 153 acres after 20 years. A 50% loss rate reduction (-0.48% per year) is assumed

for the indirect acres benefited or; of the 500 initial indirect benefit acres there would be 42 net acres (FW vs. FWO) after 20 years, thus 153 + 42 = 197 acres net.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life?* An average loss rate of terraces is 5%, with an estimated back ground rate of 32% and a created loss rate of 5% the loss rate reduction is 84% (0.05\0.32 = 0.16), or >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, cheniers, etc.?* No.
5) *What is the net impact of the project on critical and non*-critical infrastructure? The Pecan Island Oil and Gas Field is immediately adjacent to the project area, and this project will re-establish and help stabilize the emergent marsh that adjoins this critical infrastructure.
6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* This project would compliment the results of the Pecan Island Terracing Project (ME-18), which demonstrated the usefulness of terraces in this area.

Identification of Potential Issues:
No issues identified.

Preliminary Construction Costs:
Estimated construction costs plus 25% contingency = $5,400,000. The fully funded cost range is $10 - $15 M.

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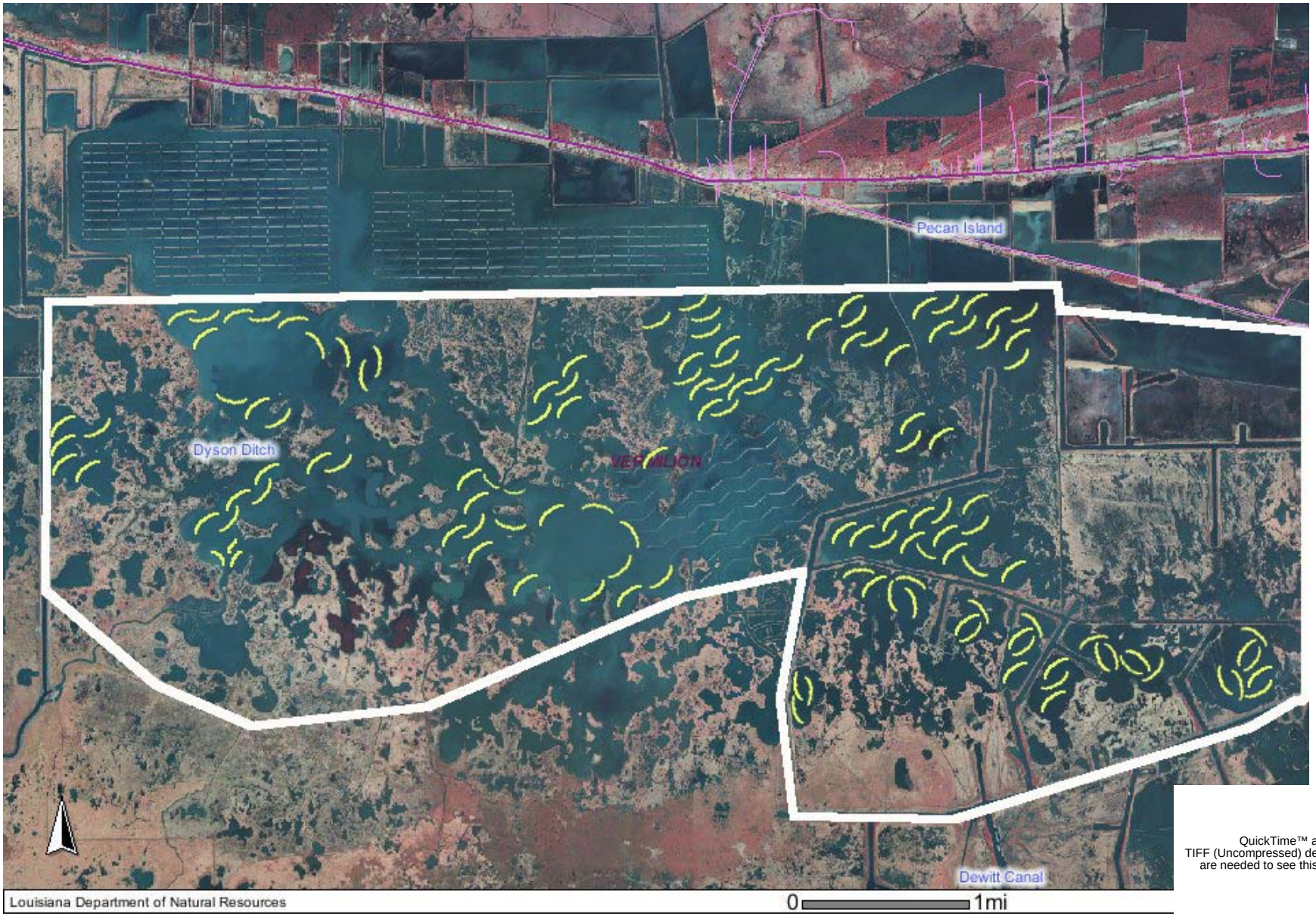
Terracing at Dyson's Ditch (ME-25)
Vermilion Parish, LA
PPL 18 nominee



QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Demonstration Project Nominees

Coastwide	DEMO	EcoSystems Wave Attenuator Demo Project
Coastwide	DEMO	Benefits of Limited Design/Unconfined Beach Fill for Restoration of Louisiana Barrier Islands Demo Project
Coastwide	DEMO	Submersible Concrete Barge Breakwater for the South Lafourche Parish, LA Demo Project
Coastwide	DEMO	Non-Rock Alternatives to Shoreline Protection Demo Project
Coastwide	DEMO	BioRock Reef Demo Project
Coastwide	DEMO	Bayou Backer Demo Project

PPL18 DEMONSTRATION PROJECT NOMINEE FACT SHEET
FINAL April 7, 2008

Demonstration Project Name:
EcoSystems Wave Attenuator for Shoreline Protection Demo Project

Coast 2050 Strategy:
Coastwide Strategy – Maintenance of Gulf, Bay and Lake Shoreline Integrity

Potential Demonstration Project Location(s):
Gulf, bay, or lake shorelines; specific site to be determined later. Applicable Statewide.

Problem:
Coastal Louisiana consists of areas with unstable soil conditions, subsurface obstructions, accessibility limitations, etc. which limit the types of shoreline protection suitable to provide adequate relief of shoreline erosion. Traditional methods that have shown the most success are through the use of rock riprap. The major advantages of rock are the effectiveness and durability of protection that is provided. The disadvantages are the cost, supply, and site specific problems with placement and handling of the material. However, the same problems are also associated with other "non-rock" alternatives that have been tried as substitutes to provide equivalent protection against shoreline erosion.

Goals:
The primary goal of this demonstration is to manufacture, deploy and test an alternative method of shoreline protection equivalent to traditional methods in areas where site conditions limit or preclude traditional methods.

Proposed Solution:
Walter Marine has developed a method of protection against shoreline erosion using the EcoSystems Wave Attenuator. This product is unit of Ecosystems discs mounted on piling with an innovative anchoring system, which dissipates wave action. The Ecosystems Wave Attenuator could be applicable for use as a shoreline protection or in place of a channel plug. The intent of this demonstration project is to place the Ecosystems Wave Attenuator in area where traditional restoration strategy would have used a rock plug or sheetpile for a channel closure. The project will evaluate the effectiveness of reducing wave energy and shoreline erosion.

Project Benefits:
Project benefits include: 1) reduction in shoreline erosion associated with wave energy; 2) information regarding deployment and installation of Ecosystems Wave Attenuator; 3) information obtained would allow a comparison with riprap structures; 4) identification of other applications of Ecosystems Wave Attenuators.

Project Costs:
The total cost plus 25% contingency is $1,500,000.

Preparer(s) of Fact Sheet:
John Jurgensen, USDA Natural Resources Conservation Service, 318-473-7694, john.jurgensen@la.usda.gov
Mary Kelly, Walter Marine, 985-705-5326, marycampokelly@yahoo.com

PPL18 PROJECT NOMINEE FACT SHEET
FINAL - April 7, 2008

Project Name: Benefits of Limited Design/Unconfined Beach Fill for Restoration of Louisiana Barrier Islands-Demonstration

Coast 2050 Strategy:

Region 2 Ecosystem Strategies: Restore/maintain barrier headlands, islands and shorelines
- 21. Extend and maintain barrier headlands, islands, and shorelines
- 22. Extend and maintain barrier shoreline from Sandy Point to Southwest Pass

Region 2 Mapping Unit Strategies
- Barataria Barrier Islands- 19. Beneficial use of dredged material (e.g. Dredging offshore to build barrier island back marshes)
- Barataria Barrier Shorelines- 23. Restore Barrier Islands

Region 3 Ecosystem Strategies: 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 .

Region 3 Mapping Unit Strategies
- Isles Dernieres Shorelines- 33. Protect Bay/Gulf shorelines

Project Location: To be determined, but probably Isles Dernieres or Timbalier island chain.

Problem: Louisiana's barrier islands are critical as basic physical determinants of the seaward boundaries of the coastal basins. They also reduce energies in the estuaries and coastal basins, and help limit the tidal prism. Without massive-scale restoration of the Delta cycle, artificial nourishment of the barrier islands is necessary to prevent their complete disappearance within years to decades. However, nourishment of the barrier islands with offshore sand is expensive, particularly when detailed engineering plans and specifications, and precise sculpting of dune and supratidal habitats, is required, as is the case now.

Goals : Demonstrate and quantify specific benefits of limited-design, unconfined beach/subtidal Gulf sand nourishment of Louisiana barrier islands**.**

Proposed Solutions: The "ideal" demonstration approach to this problem would be to simply deposit unconfined fill sufficient to expect a detectable habitat change, and then monitor it. However, given the high cost of dredging and transporting sand from a borrow area to a barrier island, the CWPPRA ceiling on costs of Demonstration Projects ($2 million) would seem to be an insurmountable obstacle to that approach. It seems very unlikely that for under $2 million, sufficient sand could be dredged, transported, and placed unconfined, that we would expect to be able to detect associated habitat changes. Basically, this is either a funding problem, a detection problem, or both**.** An alternate approach is to use sediment "tracers" and modeling to estimate benefits. A small quantity of representative beach (or subtidal Gulf) fill (sand) will be "labeled" using an appropriate tracer. The sand will be deposited on the beach and/or in the subtidal Gulf in front of a barrier island. Measurements will be made to estimate the fate of the "labeled" sand. Specifically, estimates will be made of the percent of sand initially placed on the beach/subtidal Gulf, that is ultimately deposited on the beach, dune, supratidal, and intertidal habitats, over relatively short time frames (1-3 years?). In addition, an appropriate simulation model of barrier island dynamics will be run using the data obtained in the tracer studies, to estimate changes in barrier island habitats, with and without one or more hypothetical restoration projects involving unconfined beach/gulf fill.

Preliminary Project Benefits: Estimates of potential benefits (wva) of unconfined beach/gulf fill on Louisiana barrier islands.

Identification of Potential Issues: Scientific/modeling challenges

Preliminary Construction Costs: Total cost plus 25% contingency is $1.5 million (experimental design, beach fill, tracer experiments, modeling, reporting, S&A)

Preparer(s) of Fact Sheet: Kenneth Teague, EPA (214) 665-6687
Brad Crawford, EPA (214) 665-7255

PPL18 DEMONSTRATION PROJECT NOMINEE FACT SHEET
FINAL - April 7, 2008

Demonstration Project Name:
Submersible Concrete Barge Breakwater

Coast 2050 Strategy:
Coastwide Strategy – Maintenance of Bay and Lake Shoreline Integrity

Potential Demonstration Project Location(s):
Gulf, bay, or lake shorelines; specific site to be determined later.

Problem:
Riprap has traditionally been used for stabilizing banks and shorelines. It has also been used in the construction of breakwaters in nearshore gulf settings. Riprap has its drawbacks. It can be costly, requires multiple handling, and, at times, can be in short supply. Once emplaced in a project area, riprap often sinks, sometimes unevenly, necessitating the need for additional rock. Submersible concreted barge breakwaters may be a more viable and less expensive alternative to riprap in certain applications.

Goals:
The primary goal is to conduct a demonstration of manufacturing, deployment, and performance of concrete breakwater structures as a defense strategy for protection against storm surge and waves that is compatible with multiple use, sustainable coastal restoration. Use of the breakwaters will reduce surge and wave height and energy generated by storms.

Proposed Solution:
Install submersible concrete barge breakwaters in a selected area. Evaluate their effectiveness at reducing wave energy and shoreline erosion.

Project Benefits:
Project benefits include: 1) reduction in shoreline erosion; 2) information regarding deployment and installation of submersible barge breakwaters; 3) information obtained would allow a comparison with riprap structures; 4) identification of other applications of submersible barges.

Project Costs:
The total cost plus 25% contingency is $2,500,000.

Preparer(s) of Fact Sheet:
Kevin J. Roy, U.S. Fish and Wildlife Service, 337/291-3120, Kevin_roy@fws.gov
Ed Fike, Coastal Environments, Inc., 225-383-7455, ext. 128, efike@coastalenv.com

PPL18 DEMONSTRATION PROJECT NOMINEE FACT SHEET
FINAL
April 7, 2008

Project Name:
Non-Rock Alternatives to Shoreline Protection Demo

Coast 2050 Strategy:
Coastwide: Maintenance of Gulf, Bay and Lake Shoreline Integrity

Project Location:
Applicable Statewide

Problem:
Several shoreline areas within coastal Louisiana consist of unstable soil conditions, subsurface obstructions, accessibility problems, etc., which severely limit the alternatives of shoreline protection. The adopted standard across the state, where conditions allow, is the use of rock aggregate in either a revetment or foreshore installation. The major advantages of using rock are durability, longevity, and effectiveness. However, in areas where rock is not conducive for use and site limitations exist, current "proven" alternatives that provide equivalent advantages are few to none.

Goals:
The goal of this demonstration project is to come up with an alternative method(s) of shoreline protection that can be used in areas facing one or more limitation factors which preclude the use of currently adopted standards (i.e. rock, concrete panels, bulkheads, etc.).

Proposed Solution:
Several "new" concepts of providing shoreline protection have surfaced in the last couple of years. These concepts however, have not been researched or installed due mainly to budget limitations or the apprehension of industry, landowners, and others to "try" an unproven product. The intent of this demonstration project is to provide a funding mechanism to research, install, and monitor various shoreline protection alternatives in an area(s) of the state where physical, logistical and environmental limitations preclude the use of current adopted methods.

Project Benefits:
The primary benefit expected from this project is the finding of a product(s) that effectively reduces or eliminates shoreline erosion in site conditions with severe limitations where current standards are either non-acceptable or not economically justified.

Identification of Potential Issues:
One of the criterions to be used in the selection of a viable product(s) is its ability to circumvent or avoid potential issues.

Project Costs:
$1,000,000 fully funded will be used as a placeholder to solicit for and research new products, seek potential location(s), construction, and 1 year of monitoring. Cost includes contingencies.

Preparer(s) of Fact Sheet:
Loland Broussard, USDA-NRCS, (337) 291-3060, loland.broussard@la.usda.gov

PPL18 DEMONSTRATION NOMINEE FACT SHEET
FINAL – April 7, 2008

Demonstration Project Name:
BioRock Reef Demo

Coast 2050 Strategy(ies):
Maintenance of Bay and Lake Shoreline Integrity.

Potential Demonstration Project Location(s):
Redfish Point, or any area accessible for monitoring and having known spat concentrations.

Problem:
Oyster reefs have been lost throughout the Louisiana coastal region. Conditions to re-create or initiate growth of oyster reefs are still being sought and tested. The Biorock product has successfully been able to initiate reef conditions through the use of electromagnetic currents, which allows calcium carbonate from the water column to form the structure and provide a substrate for spat settlement. We propose placing the Biorock in locations likely to have oyster spat and in an area in need of shoreline protection. Solar panels would be used to create the DC current. Access for monitoring purposes will help determine suitable location.

Goals:
(1) Test the effectiveness of the Biorock in coastal Louisiana shores to initiate reef
(2) Test the effectiveness of the Biorock in coastal Louisiana shores to reduce shoreline erosion.
(3) Determine the ability of the Biorock to withstand coastal Louisiana conditions

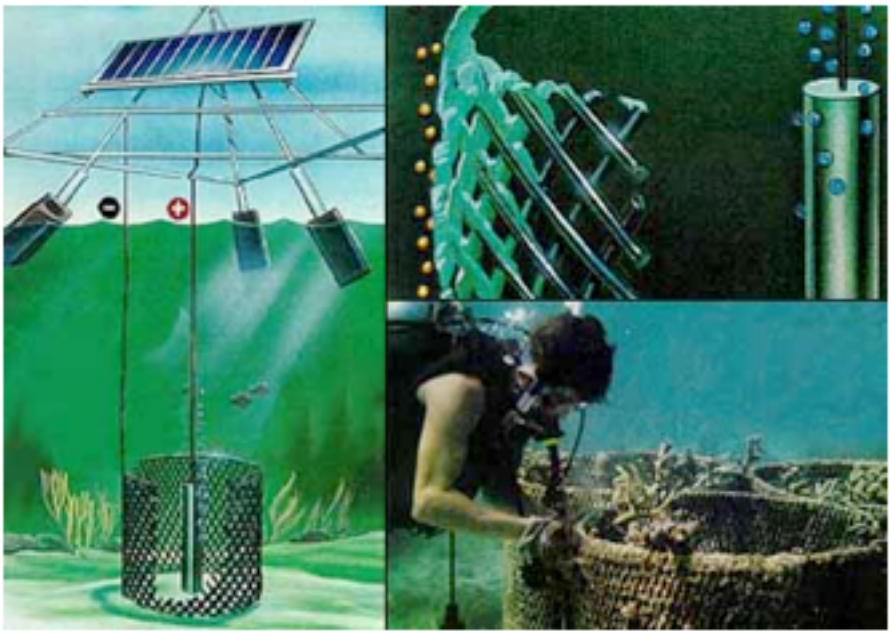
Proposed Solution:
We propose installing 750' for testing. The structures will be a metal mesh layout stretched over 2 arched rebar frames, 2.5' wide each, and connected; i.e. mimicking the letter "m". Structural growth would be measured by cover and thickness. Integrity of shoreline to withstand wave energies would be measured, as well as measurements to see if the structure would withstand the coastal environment. Biorock is being used to grow solid limestone rock structures that served as breakwaters for coastal protection in Indonesia, Maldives, Thailand, Papua New Guinea, Panama, and Mexico. The Biorock structures differ from conventional techniques in that it takes time to get stronger- it "grows" itself. With age the structure is self-repairing, and sustainable, rather than conventional techniques that degrade over time. Biorock materials can be grown as strong as concrete in any shape for construction purposes in the sea or on land. For test purposes, the structures would be constructed like residential or sand fences in straight lines along the shoreline. This configuration would be more vulnerable than other layouts, but the most cost effective and most likely to be used in a larger project plan, if the project is successful in the demo.

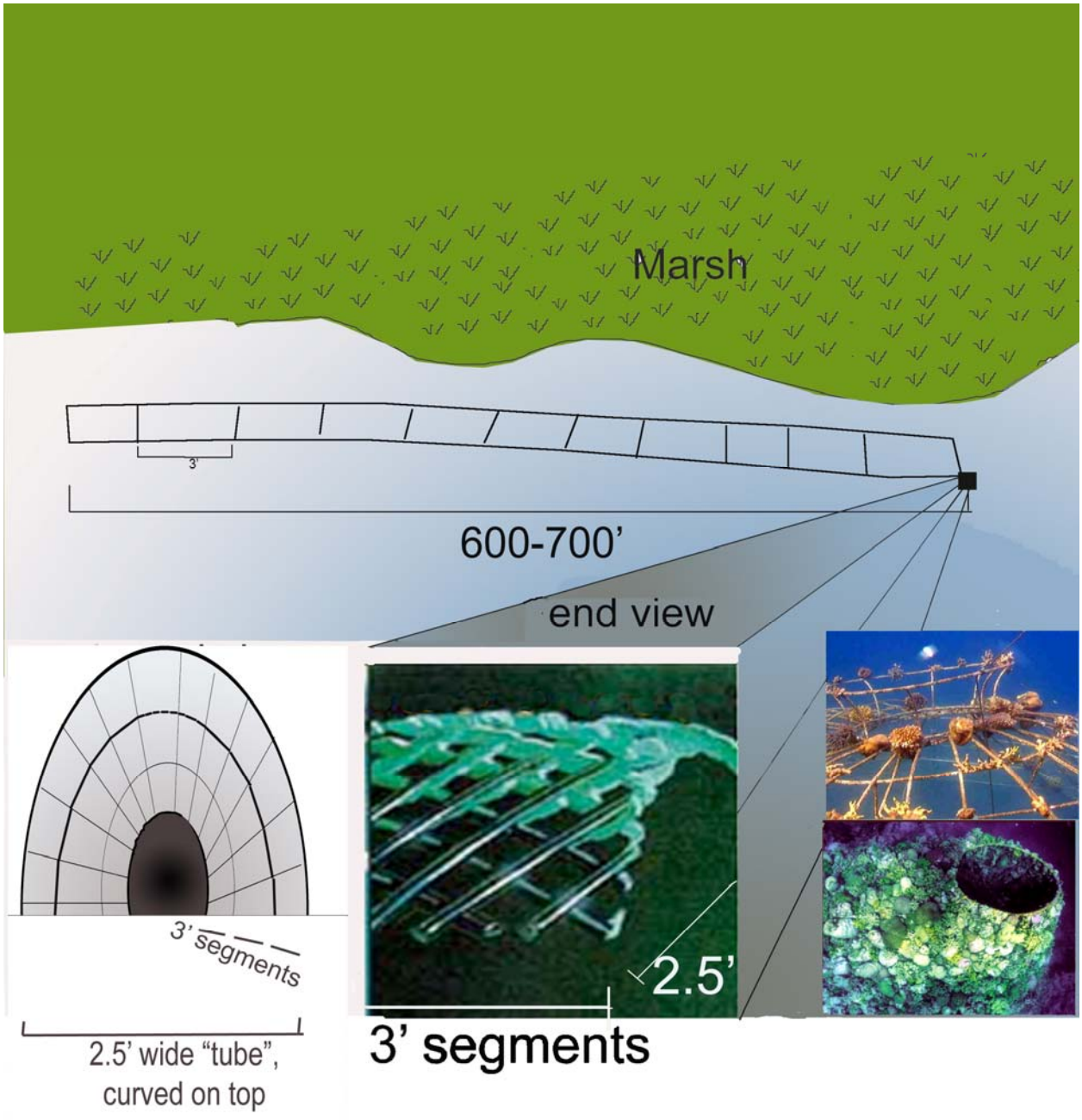
Project Benefits:
If successful the product could be successful in shoreline protection, creation of habitat used as an addition to both interior lake and exposed coastal bay shorelines and open bay waters.

Project Costs:
Construction costs + 25% contingency = $866,888

Preparer of Fact Sheet:
John D. Foret. Ph.D., NOAA Fisheries Service, (337) 291-2107, john.foret@noaa.gov.

"A METHOD OF ENHANCING THE GROWTH OF AQUATIC ORGANISMS, AND STRUCTURES CREATED THEREBY"




Marsh
3'
600-700'
end view
3' segments
2.5' wide "tube",
curved on top
2.5'
3' segments

PPL18 DEMONSTRATION NOMINEE FACT SHEET
FINAL – April 7, 2008

Demonstration Project Name:
Bayou Backer Demo

Coast 2050 Strategy(ies):
Maintenance of Bay and lake Shoreline Integrity

Potential Demonstration Project Project Location(s):
Vermilion Bay, Rockefeller Refuge, or Grand Isle shoreline

Problem:
Bayou Backer is a long lasting wave energy reducer that is suited for wetlands protection and re-vegetation. Plugs are dispensed from rolls of 3" to 6" wide corn oil based (bio-degradable) plastic strip. In very loose ground plugs up to 38' long are pushed 16' deep. This leaves two 3' long blades above the surface. Below the surface, a 16' long loop forms the anchor. The product is a low cost alternative to rock, dirt, and vegetative plantings, as it can be easily transported and installed compared with these other methods. It is expected to last several years in our waters, and assist in abating shoreline erosion to allow plants recovery and establishment time. Wave pool testing was recently performed at Louisiana State University and can be seen in photos and videos at http://www.grastic.com/backer

Goals:
(1) Test the effectiveness of the bio-grass to reduce shoreline erosion
(2) Determine the applicability of the bio-grass in coastal Louisiana shores.
(3) Test two spacing design for evaluation of shoreline protection versus cost effectiveness.

Proposed Solution:
Install 8 rows of plugs, 1 foot spacing, or 6,000 plugs, along approximately 750 linear feet of shoreline (8 rows at 1'OC = 8 plugs/ LF of shoreline * 750 LF of shoreline = 6,000 plugs). Each plug will be inserted to a 16 ft depth. A second, equivalent, section of shoreline, 5 rows of plugs will be spaced 3' OC (5 rows at 3'OC = 8 plugs/3 LF of shoreline * 750 LF of shoreline = 2,000 plugs).

Project Benefits:
If successful the product could be a low cost option in shoreline protection, for initial terrace or marsh creation erosion control until vegetation establishes, direct creation of habitat in shallow waters where turbidity could be decreased, and used as an addition to both interior lake and exposed coastal bay shorelines and open bay waters.

Project Costs:
Construction costs + 25% contingency = $330,000

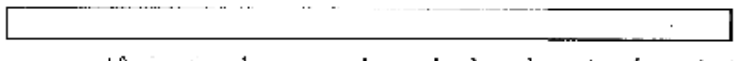
Preparer of Fact Sheet:
John D. Foret. Ph.D., NOAA Fisheries Service, (337) 291-2107, john.foret@noaa.gov.

Joe Lazaro 228 639 0402

Proposed wave test for Bayou Backer erosion control.

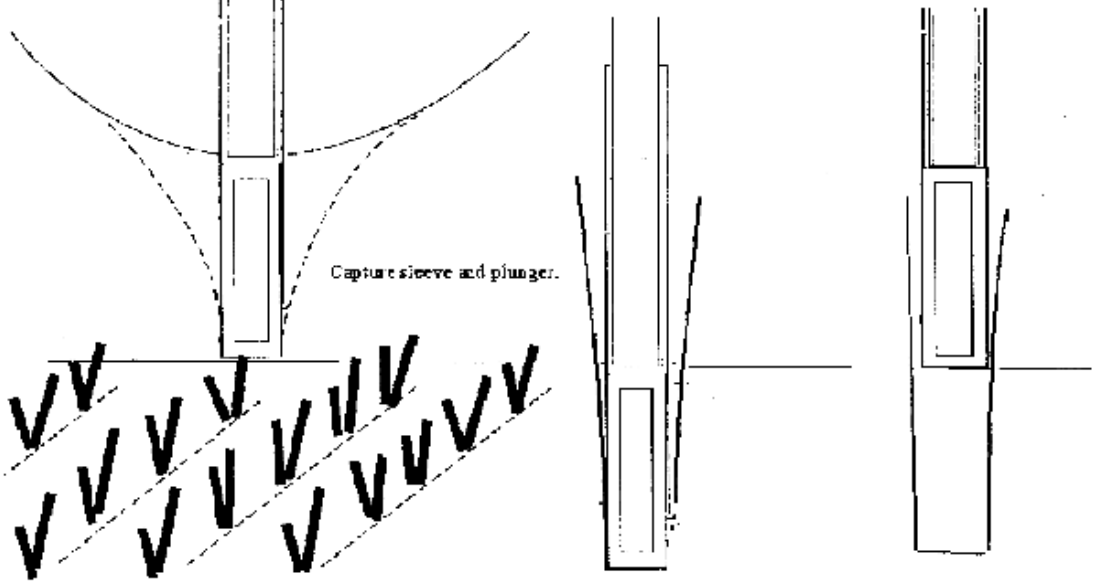
Joseph Lazaro
928 639 0402

A strip of plastic is folded in half and driven into the sand.



After insertion, plunger comes down and packs sand as capture sleeve retracts.

Spaced one to three inches on center on the diagonal.

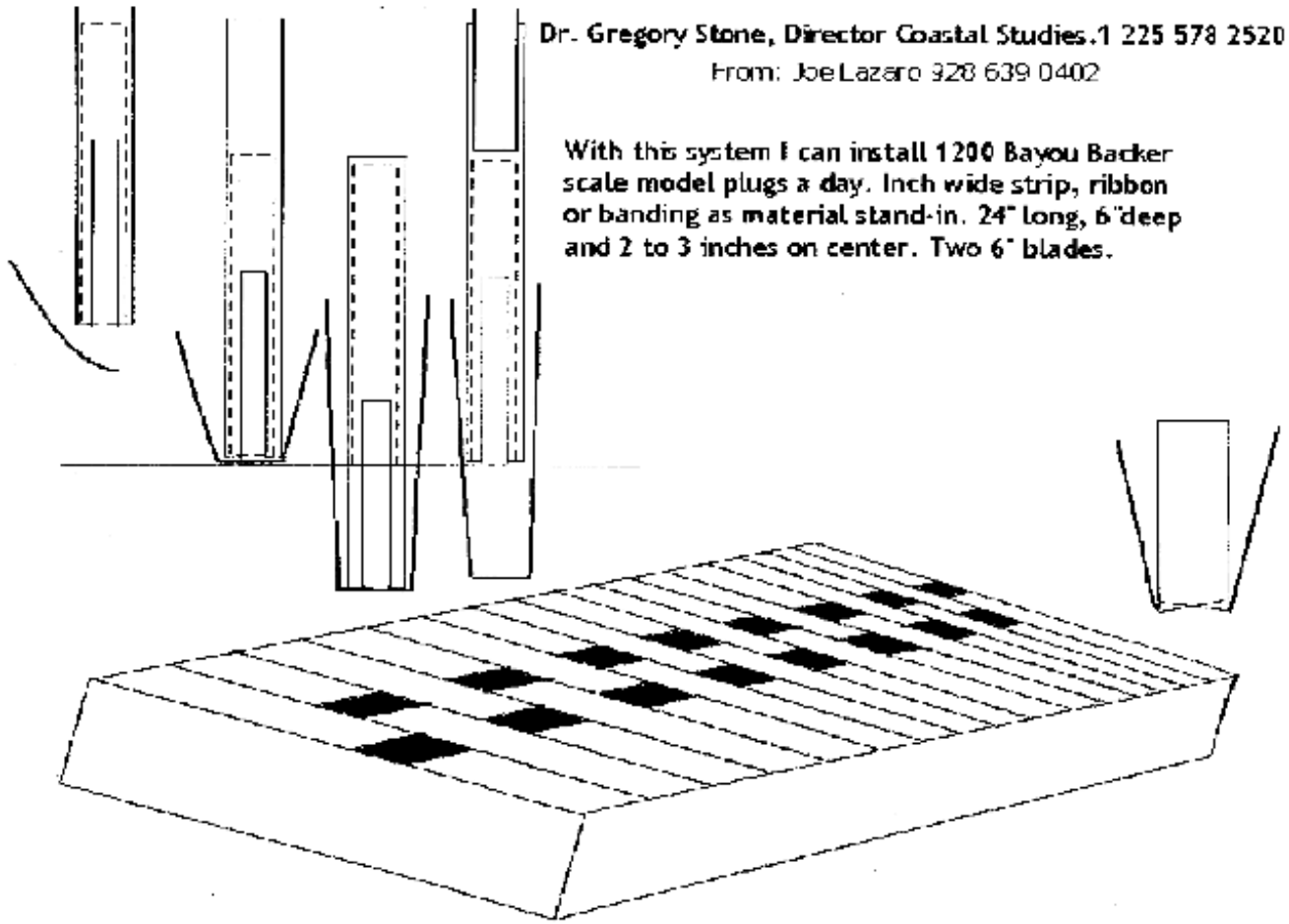


Joe Lazaro 928 639 0402

Dr. Gregory Stone, Director Coastal Studies.1 225 578 2520

From: Joe Lazaro 928 639 0402

With this system I can install 1200 Bayou Backer scale model plugs a day. Inch wide strip, ribbon or banding as material stand-in. 24" long, 6"deep and 2 to 3 inches on center. Two 6" blades.



Gallagher, Anne E MVN-Contractor

From: Goodman, Melanie L MVN
Sent: Tuesday, March 18, 2008 2:05 PM
To: Gallagher, Anne E MVN-Contractor
Subject: Fw: Levees need grass? How about GRASTC?

Follow Up Flag: Follow up
Flag Status: Red

Anne please include mr la*rdo's comments with tc binder mayerials for ppl 18
Melanie--------------------------
Sent from my BlackBerry Wireless Device

U.S. Army Corps of Engineers
New Orleans District
7400 Leake Ave
New Orleans, LA. 70118

-----Original Message-----
From: JOSEPH LAZARO <grastic@msn.com>
To: Goodman, Melanie L MVN
Sent: Tue Mar 18 14:06:03 2008
Subject: Levees need grass? How about GRASTC?

Melanie, I've been consulting with John Foret and he suggested I contact you. I've an invention utilizing strips of plastic for erosion reduction. These are inserted vertically into the ground at depths of 6" to 3'. This has been tested for three years on a mine dump here in Jerome. A spot on the 40% slope was cover with 100 square feet of artificial grass. The unique part was the installation method and simplicity of design. Basically a length of plastic ribbon is rammed or seeded into the ground. These continue to hold and can be seen at grastic.com. Please read my pitch in the interests of Bayou Backer. Please also take a look at GRASTIC for those levee slopes. Joseph Lazaro 928 639 0402

1. Bayou Backer erosion control proposal.

Two acres per hour washing out to sea reflects the sand castle nature of our gulf coast. Material must constantly be added or the land disappears. Our marshes and swamps reflect the building of the delta itself. The Mississippi supplies enormous quantities of material and new land spreads out because of it. Left to itself, the river compensates for a sinking shore with loads from an eroding continent. The periodic shifting of its course distributes silt and mud to many areas that would starve without it.

Today, with industries help subsidence and rising waters have tipped the balance towards a wet end. Indiscriminate channel cutting and pipelines have sliced up our magic carpet. It won't fly now without being fed. The feed unfortunately is being dumped far off the continental shelf, banished in the name of shipping and I'm not about to take that one on.

Floating cities might be the answer someday if your business and houseboat can be secured. The risk of trespassing down river would hang on a line that's anchored to what? A blob of concrete and steel? How deep? How expensive? Face it; walls and levees will protect our lives for generations to come. These structures compete for resources that might otherwise go to wetlands restoration. A marsh is a big buffer zone that's hard to quantify. Concrete and earthworks can be precisely measured and litigated.

I estimate the cost of good muddy fill at $500 to $800 per ton delivered. That's based on fuel costs mostly but wages and overhead might double these figures. A five-yard bucket scooping up wet muck burns 200 to 300 gallons per hour just lifting it above sea

level. Add transportation by barge, train or slurry pipe and the zeros begin to pile up. Delivered, a ton covers 50 square feet, six inches thick. That's about a pickup load, thanks for your money.

In the language of dredging "borrow" is material removed and never returned. I won't argue semantics. It's one man's levee heightening to another's deep trench. The institutionalized taking of one person's land to save another's is beyond the scope of Bayou Backer. I think an installation could affect land pegged for removal if it's now being protected.

Saving the wetlands requires flexibility and control. Large blunt forces must balance manual labor and scientific analysis. Plans should include at least 8 disciplines. Biology, organic chemistry, oceanography, fisheries, archeology, riparian ecology, fluid dynamics and all forms of engineering. Finding consensus often take's longer than a distressed shoreline can wait. Small budgets and volunteers have saved thousands of acres here and there. Planting grass, shrubs and trees is a lot of work but that’s how many communities are reclaiming their backyards.

'Bayou Backer' erosion control is a version of a design I had originally proposed to Arizona mining interests. 'Grastic' was a strip of plastic inserted in to the steep mine dumps of Jerome. My tailings test showed the grip of a buried plastic loop with the ends protruding. On a 45% slope the plugs were driven 4" deep 3" o/c covering 100 square feet. This patch has been up for three years this June and has seen torrential rains. Unfortunately for me there is abundant dirt and seeding slurry to cover these dumps more effectively than grastic.

The Katrina devastation brought my attention to the gulf coast and it's battle with the sea. I began to follow the techniques being tried and thought my invention might have an application. By plunging large strips of plastic into the rockless mud you get a purchase in the shifting ground. New plants and animals will find this environment more benign than open water. They'll be the second, third and fourth signs of rebirth. The first sign being the installation of Bayou Backer.

In Dec we spent time at the wave testing facility at LSU. My scale model was stuck in a 'beach' facing the wave generator. The plugs were battered for four days. The overall concept was confirmed and the dampening effect was measured. This data is being analyzed for an online posting with video. It'll be a hit with conservationists, coastal engineers and land trustees.

In Feb. I was in a cwwpra funding competition at the Army Corps of Engineers. My presentation included a cardboard relief map of a mud flat installation. The group had seen B.B. before and were primed. Of the fourteen proposals made that day mine passed the first cut (top5)? And will go to the finals in April. With that encouragement we're looking for development funds now. My simple designs could become prototypes of the first installer. Plastics and mechanical engineers will be eager to get in on the boon. The oil and gas industries will discover a system that protects their infrastructure and some habitat as well. The overall response to B.B. has been positive and a test site is being discussed for Vermillion Bay next year. Right now other sites are being sought. The process would resemble the following.