Priority Project List Number 12
Candidate Projects

Public Meetings -- November 2002

Abbeville New Orleans

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The 12th Priority List Planning Process

√ Citizens nominated 13 projects across the Louisiana coastal zone at regional meetings during Spring 2002.

√ At the direction of the CWPPRA Task Force, the Technical Committee selected 7 candidate projects for detailed evaluation in May 2002.

√ Interagency project site visits were conducted with the participation of interested landowners and local government representatives during the late spring and early summer.

√ Members of the Environmental and Engineering work groups met to review project features, aerial videotapes, and field notes to determine project boundaries.

√ Environmental Work Group conducted Wetland Value Assessments (WVA) on each candidate project to estimate environmental benefits.

√ Engineering Work Group reviewed designs and cost estimates for each project.

√ The work groups jointly applied the Coast 2050 criteria to score each project to indicate support for the goals of the Coast 2050 plan.

√ Economics Work Group projected fully funded costs to construct, monitor and maintain each candidate project.

- Hold public meetings to present project evaluation results.

- On December 10, 2002, the Technical Committee will review project evaluation results and develop a recommendation to the Task Force for project selection.

- The CWPPRA Task Force will select the 12th Priority Project List on January 16, 2002.

Hydrologic Restoration in the Swamps West of Lake Maurepas (1-1)

Coast 2050 Strategies: 1) Offshore and riverine sand and sediment sources; 2) Diversions and riverine discharge; 3) Management of diversion outfall for wetland benefits.

Project Location: Region 1, Lake Pontchartrain Basin, Livingston Parish in cypress/tupelo swamps West of Lake Maurepas, north and south of the Amite River Diversion Canal.

Problem: Swamps north and south of the Amite River Diversion Canal are highly stressed by a lack of Mississippi River inflow and the impounding effects of the spoil bank along the canal. The Amite River Diversion Canal could compensate for the lack of Mississippi River water, but the spoil banks prohibit input of sediment- and nutrient-laden water from the canal into the swamps during high water, and they prohibit draining of the swamps during low water periods.

Goals: 1) Increase productivity and regeneration of cypress and tupelo swamp; 2) increase sediment accretion and nutrient loading in swamp; 3) decrease frequency, intensity, and duration of salinity spikes in swamp; 4) increase water flows through swamp; 5) increase the frequency and duration of periods when the swamp surface is not flooded to promote regeneration; 6) increase frequency and duration of periods when water depths in the swamp <1ft to support survival of new cypress and tupelo recruits; 7) decrease nutrient loading to Lake Maurepas from Amite River.

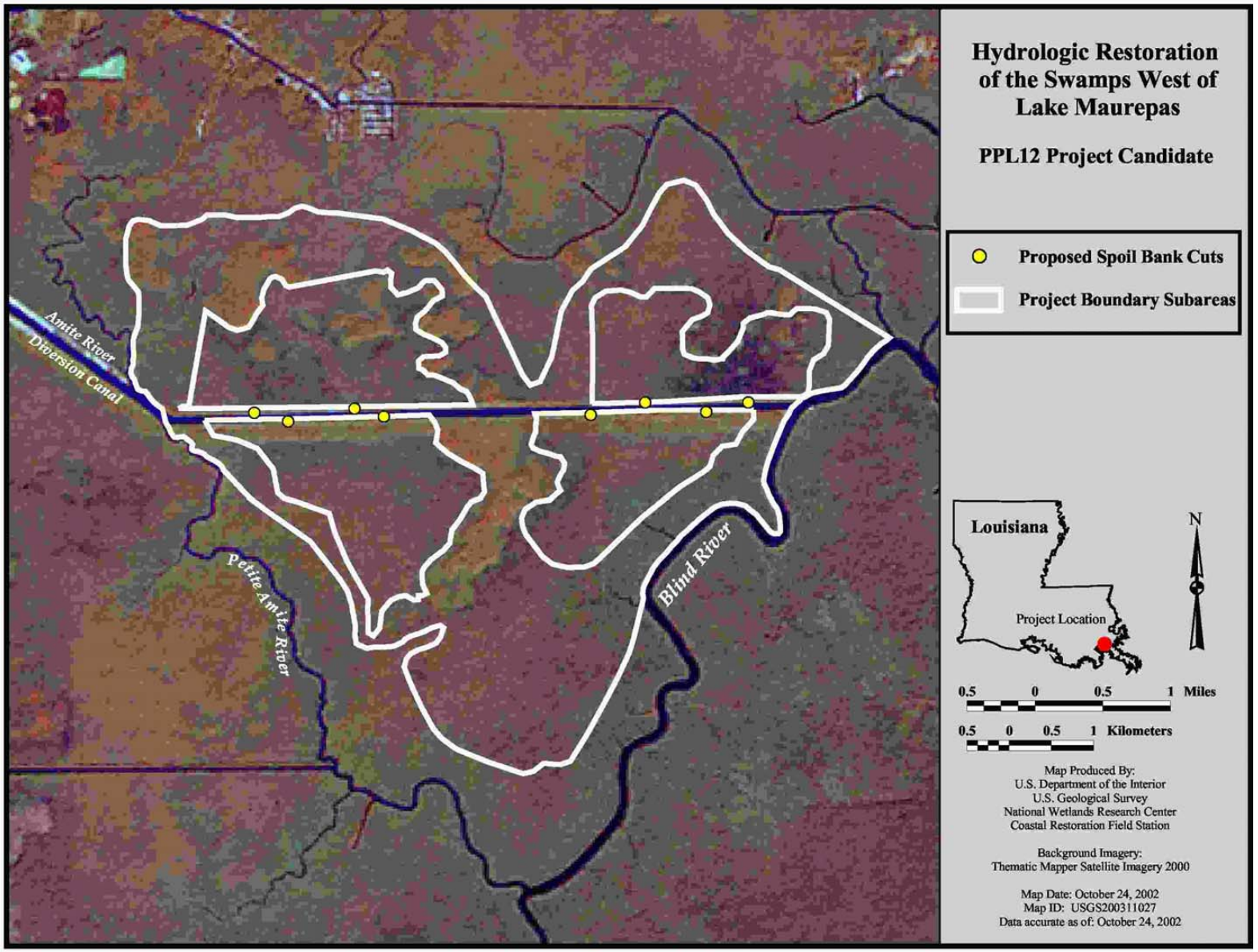
Proposed Solution: Construct a total of eight 40'-wide cuts in the spoil banks on the north and south banks of the Amite River Diversion Canal to facilitate water exchange. The two northwestern-most cuts would include bridge crossings, while others would not. Each cut would be approximately 250' long, to a depth of -1.0' NAVD. Gaps in the old railroad grade, which traverses north to south across the project boundary, would be cut to facilitate better hydrologic connectivity within the project area.

Project Benefits: This project would benefit 6,458 acres of cypress-tupelo swamp, however it is not expected to directly create any additional forested wetland acreage over the 20-year project life. WVA attributed 1,878 AAHUs to the project due to improvements in vegetative cover and growth, hydrology, and reduced salinities.

Project Costs: The estimated total fully funded cost is $5,997,700.

Risk/Uncertainty and Longevitiy/Sustainability: The joint Environmental/Engineering Work Group considered this project to have a high degree of risk/uncertainty because of uncertainty at this stage of planning as to whether project features and conditions would elicit the desired effects as proposed. The project is expected to continue providing wetland benefits 30-40 years after construction because project features are simple and should be durable over time.

Sponsoring Agency and Contact Persons
Ken Teague, EPA-Dallas (214-665-6687)
Tim Landers, EPA-Dallas (214-665-7533)
Brad Crawford, EPA-Dallas (214-665-7255)


Hydrologic Restoration of the Swamps West of Lake Maurepas
PPL12 Project Candidate
Proposed Spoil Bank Cuts
Project Boundary Subareas
Amite River Diversion Canal
Petite Amite River
Blind River
Louisiana
Project Location
N
0.5 0 0.5 1 Miles
0.5 0 0.5 1 Kilometers
Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Background Imagery:
Thematic Mapper Satellite Imagery 2000
Map Date: October 24, 2002
Map ID: USGS200311027
Data accurate as of: October 24, 2002

Lake Borgne and MRGO Shoreline Protection (R1-3)

Coast 2050 Strategies

- maintain Lake Borgne shoreline integrity
- stabilize the entire north bank of the MRGO

Project Location

Region 1, Pontchartrain Basin. St. Bernard Parish. Along the Lake Borgne shoreline between Doullut's Canal and Jahncke's Ditch and along the north bank of the Mississippi River Gulf Outlet between Doullut's Canal and Lena Lagoon.

Problem

Shoreline erosion rates along Lake Borgne were estimated at 9 ft/yr along Lake Borgne and 24 ft/yr along the MRGO.

Goals

This project would help preserve marsh between Lake Borgne and the MRGO by preventing shoreline erosion.

Proposed Solutions

Two features will be constructed. 1) An 18,500 linear foot rock dike along the Lake Borgne shoreline from Doullut's Canal to Jahncke's Ditch. The dike will be 4 feet high, with a 5-foot crown and side slopes of 1V on 2H. 2) A 14,250 linear foot rock dike along the north bank of the MRGO from Doullut's Canal to Lena Lagoon. The dike will be 6 feet high, with a 5-foot crown and side slopes of 1V on 1.25H. Both dikes will have a 3-foot layer of armor stone placed on top of a crushed stone core resting on a layer of geotextile. Any flotation channel needed will be excavated with the spoil being placed behind the rock dikes. Fish dips will be constructed so as to allow organism and water exchange.

Project Benefits

The project would benefit about 465 acres of estuarine marsh. Approximately 266 acres of marsh would be created/protected over the 20-year project life.

Risk/Uncertainty and Longevity/Sustainability

There is a low degree of risk associated with this project because rocks are effective at stopping shoreline erosion. The project should continue providing benefits 20-30 years after construction because adequate O&M funds are budgeted.

Project Costs

The estimated total fully funded cost is $25,062,900.

Sponsoring Agency and Contact Persons

Gregory Miller, Corps of Engineers, (504) 862-2310
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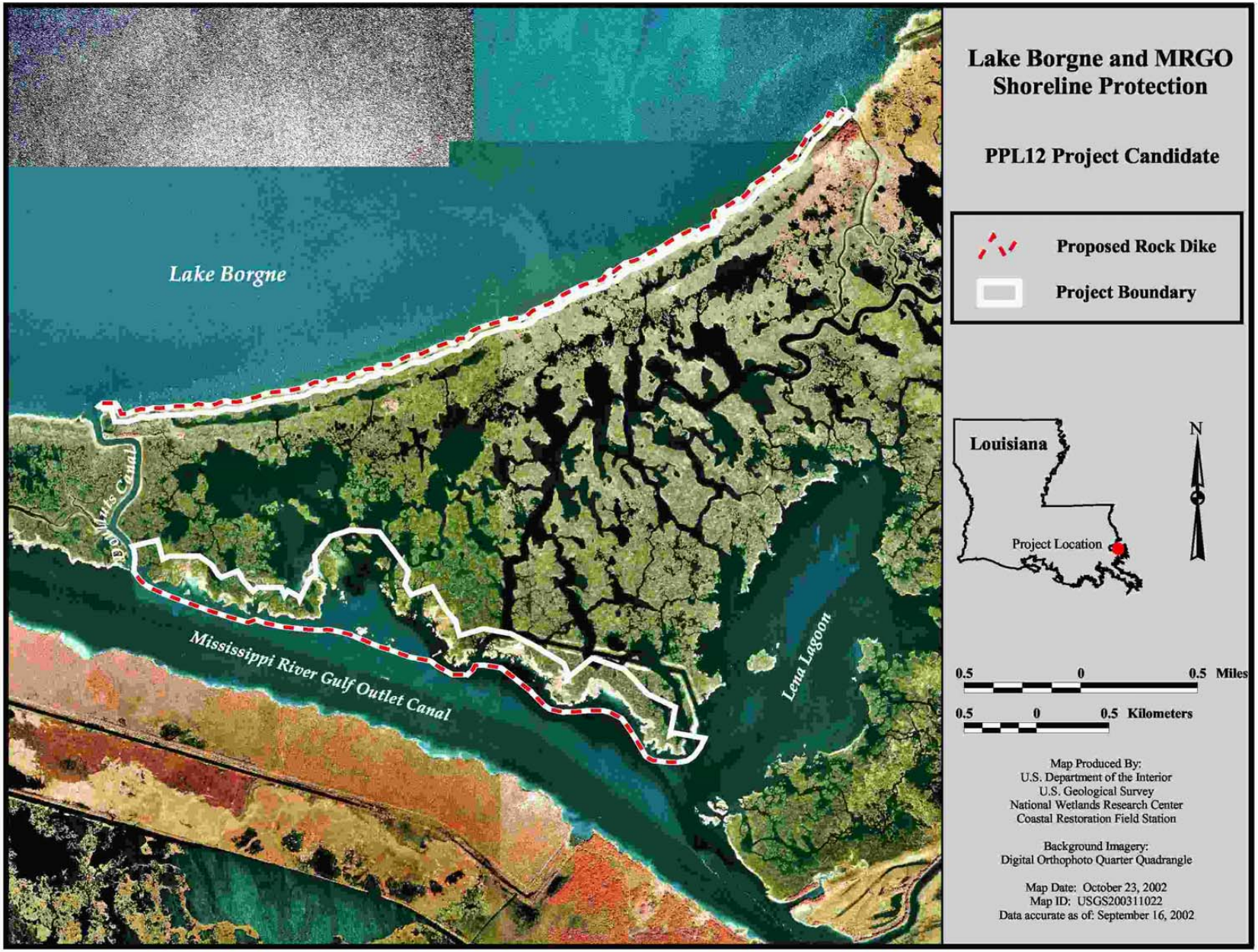


Lake Borgne and MRGO Shoreline Protection

PPL12 Project Candidate

Proposed Rock Dike

Project Boundary

Louisiana

Project Location

N

0.5 0 0.5 Miles

0.5 0 0.5 Kilometers

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

Background Imagery:
Digital Orthophoto Quarter Quadrangle

Map Date: October 23, 2002
Map ID: USGS200311022
Data accurate as of: September 16, 2002

Bayou Dupont Sediment Delivery System (2-1)

Coast 2050 Strategies Coastwide: 1) Dedicated dredging; 2) Vegetative planting.

Project Location: Region 2, Barataria Basin. In the vicinity of Bayou Dupont (north of Bayou Dupont) and southeast of Cheniere Traverse Bayou to the Mississippi River in the vicinity of Ironton in Plaquemines Parish, and the Town of Jean Lafitte in Jefferson Parish.

Problem: The proposed project would dredge sediment for marsh creation from the Mississippi River, and deliver it to an adjacent area within the Barataria Basin. Project area marshes have degraded to almost entirely open water, due to a combination of causes including lack of natural freshwater and sediment input, subsidence, and the dredging of oil and gas canals. The proximity to the Mississippi River is an excellent opportunity to design a sediment delivery system that will utilize sediment from the River to restore and create wetlands in this area of critical need. Unlike most marsh creation projects, this project will not borrow material from existing shallow bay bottoms, which may have implications for surrounding sediment dynamics and water quality at the borrow area. Ideally this sediment would be transported into areas of need using freshwater/sediment diversions. However, it is difficult to divert large sediment loads using diversion structures in most locations, since smaller structures don't typically capture bedload, and sedimentation in diversion channels is a problem. Dedicated dredging of Mississippi River sediments is one way around this dilemma.

Goals: 1) Create 538 acres of brackish marsh using sediment dredged from the Mississippi River; 2) Provide features that would facilitate future marsh creation efforts in surrounding open areas.

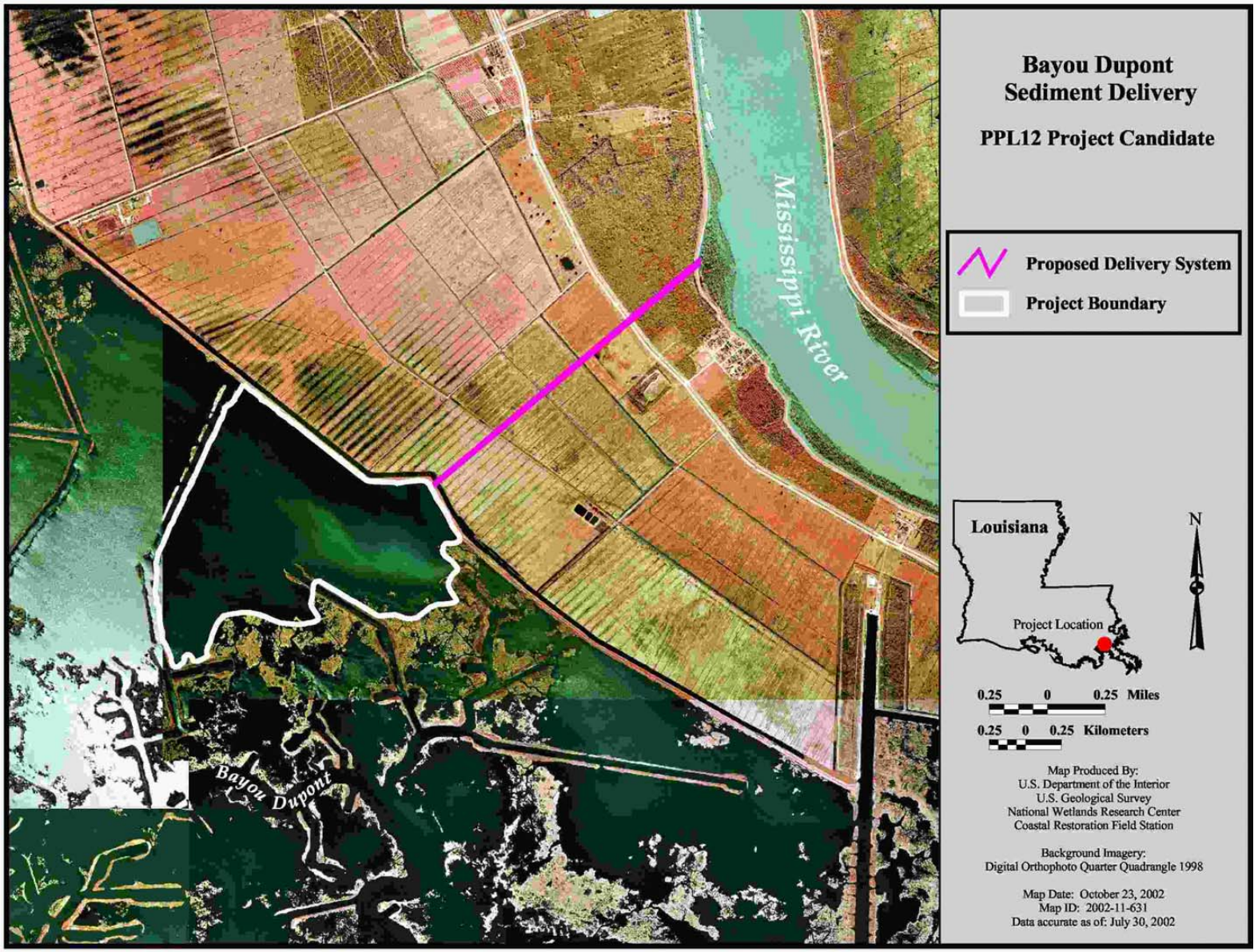
Proposed Solution: Creation/restoration of approximately 538 acres of brackish marsh by delivering sediments dredged from the Mississippi River via pipeline, and planting marsh vegetation.

Project Benefits: The project would benefit 538 acres of estuarine marsh. Approximately 400 acres of marsh would be created/protected over the 20-year project life.

Project Costs: The estimated total fully funded cost is $24,727,100.

Risk/Uncertainty and Longevity/Sustainability: There is a low degree of risk and uncertainty associated with this project because the methods are reasonably simple and in fairly wide use. The project should continue providing benefits 30-40 years after construction because sufficient sediment will have been delivered to maintain marshes beyond the 20 year project life. Created wetlands may also benefit from the planned Myrtle Grove freshwater diversion.

Sponsoring Agency and Contact Persons:
Tim Landers, EPA-Dallas (214-665-7533)
Ken Teague, EPA-Dallas (214-665-6687)
Brad Crawford, EPA-Dallas (214-665-7255)


Bayou Dupont
Sediment Delivery
PPL12 Project Candidate
Mississippi River
Proposed Delivery System
Project Boundary
Louisiana
Project Location
N
0.25 0 0.25 Miles
0.25 0 0.25 Kilometers
Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Background Imagery:
Digital Orthophoto Quarter Quadrangle 1998
Map Date: October 23, 2002
Map ID: 2002-11-631
Data accurate as of: July 30, 2002
Bayou Dupont

Shell Island Barrier Headland Restoration

Coast 2050 Strategies
Regional strategy #21 restore/maintain barrier headlands, islands and shorelines
Coastwide - beneficial use of dredged material; dedicated dredging

Project Location
Region 2, Barataria Basin, Plaquemines Parish, west of Empire Waterway

Problem
Historic and predicted future loss is high (erosion rate of 115.4 ft/yr). Historically, the island protected interior bays and marsh when it was whole. (Plaquemines Parish representatives voted this as the highest CWPPRA priority).

Goals
Reestablish historic barrier separating bay from gulf, thereby adding protection to interior areas.

Proposed Solution
Reestablish barrier through rock breakwater and marsh creation using pumped material (sand and overburden) as indicated on attached map with appropriate maintenance for 20-year project life. Areas will also be planted with appropriate woody and herbaceous vegetation for nesting and resting habitat while leaving some sections barren for nesting habitat desirable for other avian species.

Project Benefits
The project would benefit 1,294 acres of barrier island habitat. Approximately 296 acres of marsh and barrier island habitat would be created/protected over the 20-year project life.

Project Costs
The estimated total fully funded cost is $98,456,700.

Risk/Uncertainity and Longevity/Sustainability
There is a moderate degree of risk associated with this project because of the project used time tested materials, however in a high-risk area. The project should continue providing benefits 20-30 years after construction because sufficient maintenance is built into the project.

Sponsoring Agency and Contact Person
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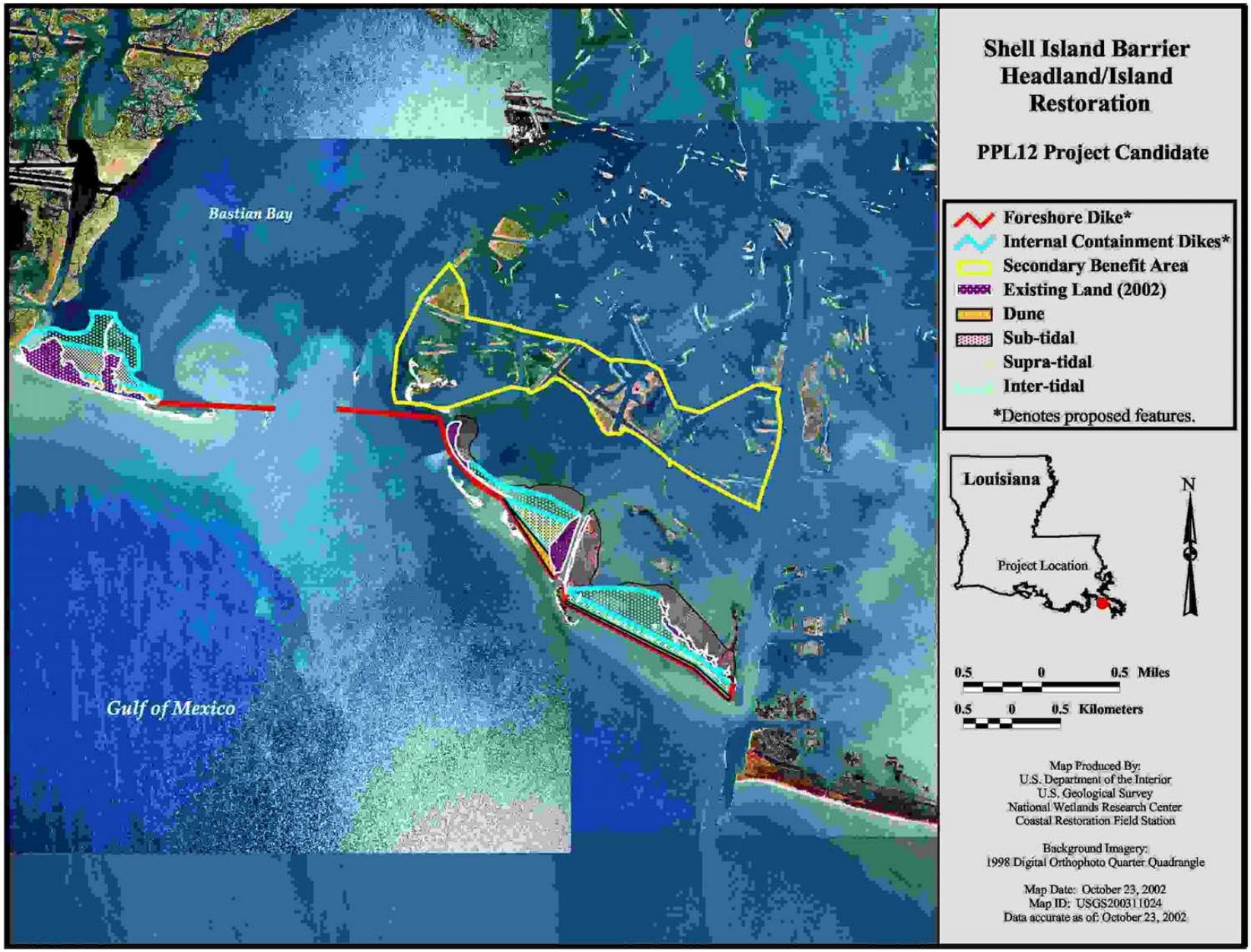
Bastian Bay
Gulf of Mexico
Shell Island Barrier Headland/Island Restoration
PPL12 Project Candidate
Foreshore Dike*
Internal Containment Dikes*
Secondary Benefit Area
Existing Land (2002)
Dune
Sub-tidal
Supra-tidal
Inter-tidal
*Denotes proposed features.
Louisiana
Project Location
N
0.5 0 0.5 Miles
0.5 0 0.5 Kilometers
Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Background Imagery:
1998 Digital Orthophoto Quarter Quadrangle
Map Date: October 23, 2002
Map ID: USGS200311024
Data accurate as of: October 23, 2002

Shell Island Barrier Headland Restoration Increment

Coast 2050 Strategy
Regional strategy #21 restore/maintain barrier headlands, islands and shorelines.
Coastwide - beneficial use of dredged material; dedicated dredging

Project Location
Region 2, Barataria Basin, Plaquemines Parish, west of Empire Waterway

Problem
Historic and predicted future loss is high (erosion rate of 115.4 ft/yr). Historically, the island protected interior bays and marsh when it was whole. (Plaquemines Parish voted this as the highest CWPPRA priority).

Goals
Reestablish historic barrier separating bay from gulf, thereby adding protection to interior areas.

Proposed Solution
Reestablish barrier through rock breakwater and marsh creation using pumped material (sand and overburden) as indicated on attached map with appropriate maintenance for 20-year project life. Areas will also be planted with appropriate woody and herbaceous vegetation for nesting and resting habitat while leaving some sections barren for nesting habitat desirable for other avian species.

Project Benefits
The project would benefit 1,114 acres of barrier island habitat. Approximately 223 acres of marsh and barrier island habitat would be created/protected over the 20-year project life.

Project Costs
The estimated total fully funded cost is $81,916,200.

Risk/Uncertainity and Longevity/Sustainability
There is a moderate degree of risk associated with this project because of the project used time tested materials, however in a high-risk area. The project should continue providing benefits 20-30 years after construction because sufficient maintenance is built into the project.

Sponsoring Agency and Contact Person
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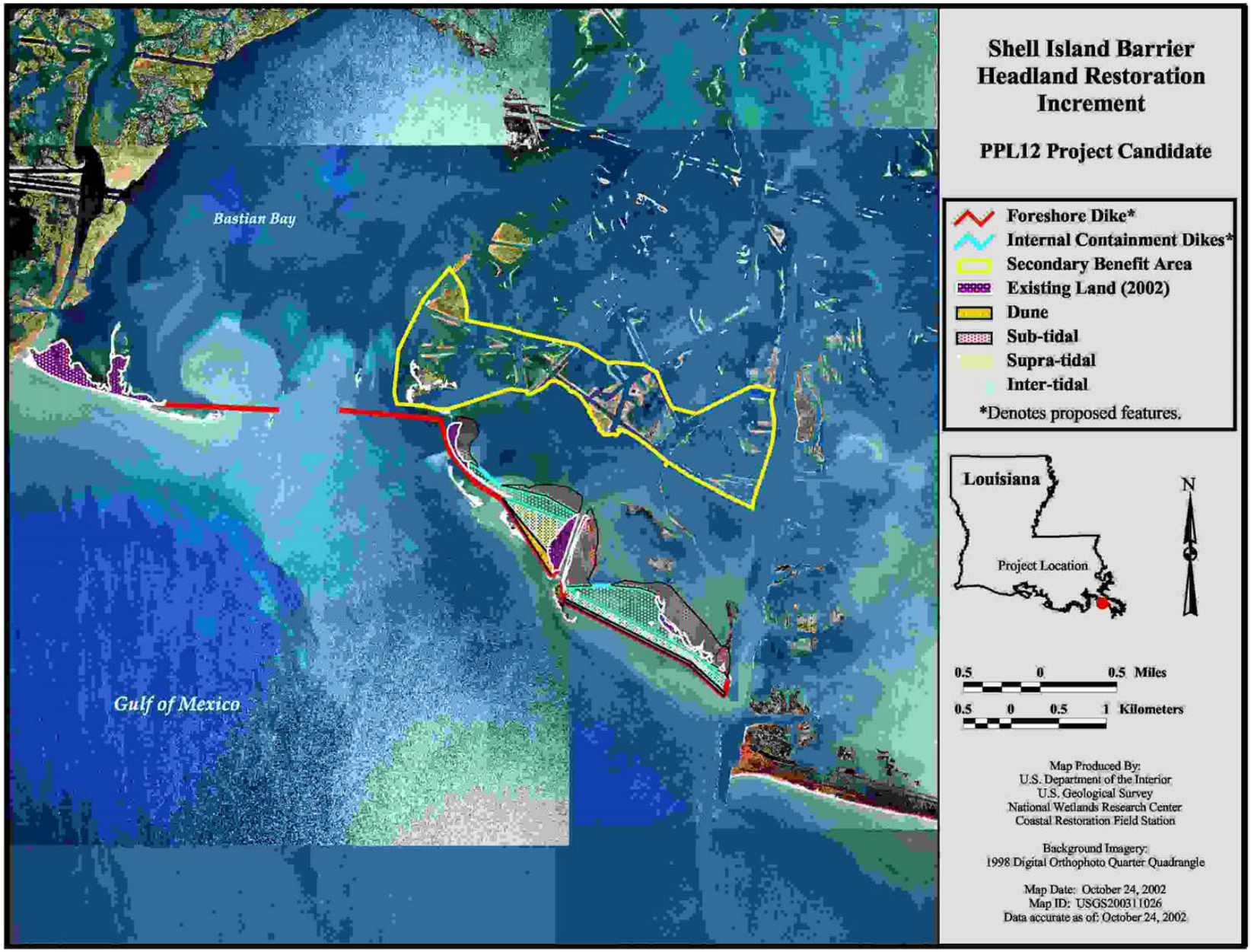
Bastian Bay
Gulf of Mexico
Shell Island Barrier Headland Restoration Increment
PPL12 Project Candidate
Foreshore Dike*
Internal Containment Dikes*
Secondary Benefit Area
Existing Land (2002)
Dune
Sub-tidal
Supra-tidal
Inter-tidal
*Denotes proposed features.
Louisiana
Project Location
N
0.5 0 0.5 Miles
0.5 0 0.5 1 Kilometers
Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Background Imagery:
1998 Digital Orthophoto Quarter Quadrangle
Map Date: October 24, 2002
Map ID: USGS200311026
Data accurate as of: October 24, 2002

Avoca Island Diversion and Land Building (R3-2)

Coast 2050 Strategies

- Diversions and riverine discharge
- Stabilize banks
- Beneficial use of dredged material
- Protect lake shoreline

Project Location
Region 3. Terrebonne and Atchafalaya Basins, St. Mary Parish, Avoca Island.

Problem
The Coast 2050 Plan reported that the Avoca Island mapping unit lost ~5,000 acres of marsh between 1932 and 1990. Natural overbank flooding into the Avoca Island area has been eliminated by channelization and construction of flood protection levees.

Goals
Rebuild eroded wetlands through the diversion of freshwater, sediment and nutrients.

Proposed Solution and Features

1. A diversion structure would be installed through the Avoca levee to allow fresh water, sediment, and nutrients from Bayou Schaffer to enter Avoca Lake. The projected diversion design volume is 1,000 cfs.

2. A natural bayou would be used as the primary outfall channel for the diversion.

3. Outfall management measures will be evaluated and incorporated to increase benefits to aquatic habitats in the island system.

Project Benefits
The project would benefit about 7,233 acres of fresh marsh, cypress forest, and open water. Approximately 143 acres of marsh would be created/protected over the 20-year project life.

Project Costs
The estimated total fully funded cost is $19,157,200.

Risk/Uncertainty and Longevity/Sustainability
There is a low degree of risk associated with this project because river diversions are an effective wetlands restoration technique. The project should continue providing benefits 30 - 40 years after construction.

Sponsoring Agency and Contacts
Gregory Miller, U.S. Army Corps of Engineers, (504) 862-2310
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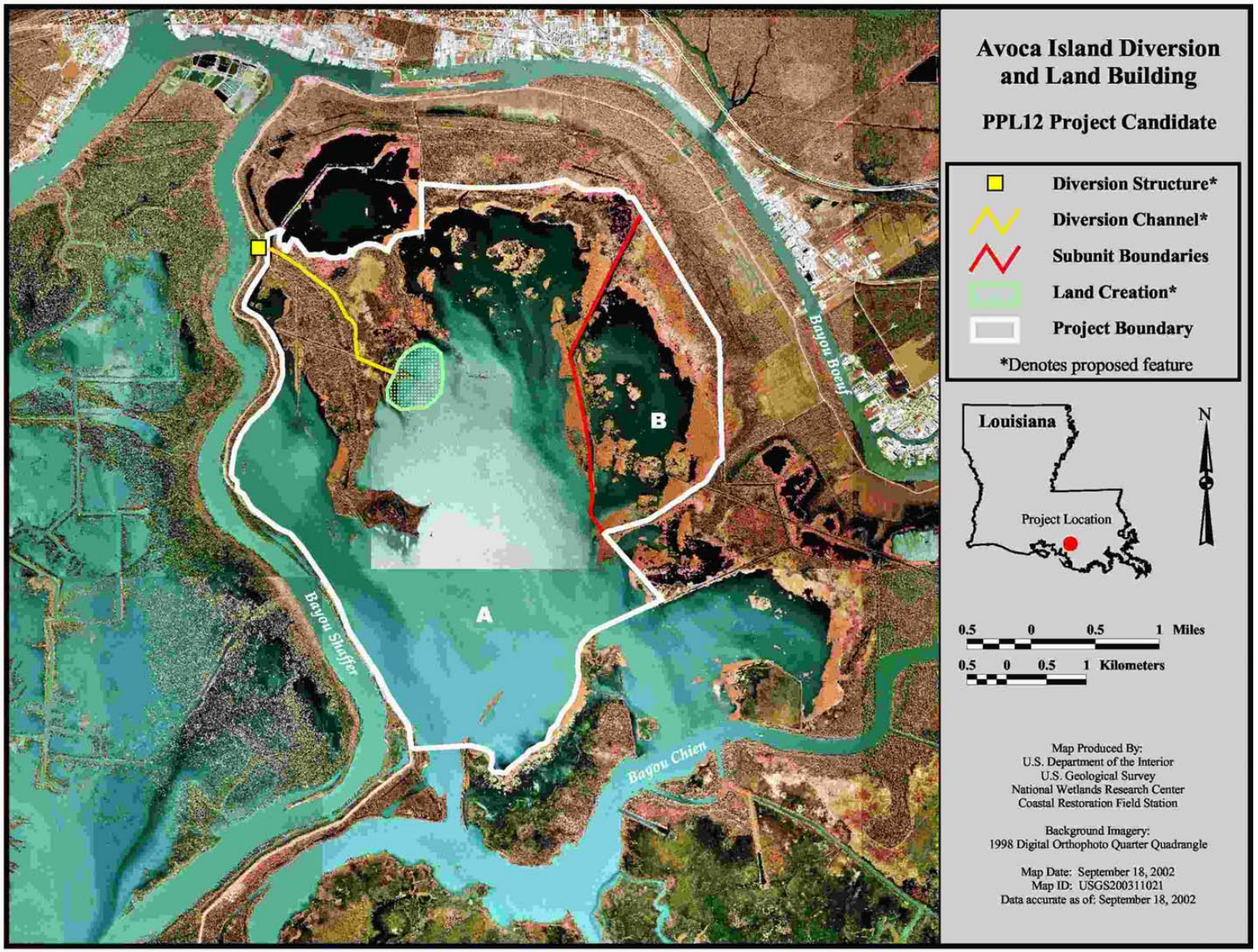
Richard Boe, U.S. Army Corps of Engineers, (504) 862- 1505


Avoca Island Diversion and Land Building
PPL12 Project Candidate
Diversion Structure*
Diversion Channel*
Subunit Boundaries
Land Creation*
Project Boundary
*Denotes proposed feature
Louisiana
Project Location
N
0.5 0 0.5 1 Miles
0.5 0 0.5 1 Kilometers
Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Background Imagery:
1998 Digital Orthophoto Quarter Quadrangle
Map Date: September 18, 2002
Map ID: USGS200311021
Data accurate as of: September 18, 2002
Bayou Boeuf
Bayou Shaffer
Bayou Chien
A
B

North Bully Camp Hydrologic Restoration

Coast 2050 Strategy - Coastwide Regional Ecosystem Strategy 10 – Restore historic hydrologic conditions of major tidal exchange points or prevent adverse tidal exchange points between the Gulf/lake, lake/marsh, bay/marsh, Gulf/bay and marsh /navigation channel locations.

Project Location - Region 3, Lafourche Parish, Grand Bayou Blue watershed, near Catfish Lake

Problem - Oilfield canals and marsh deterioration are allowing excessive northward saltwater intrusion as evidenced by the rapid conversion of project area intermediate marshes to deteriorating brackish marshes. This problem is most evident in flows and channel depths showing that a substantial segment of lower Grand Bayou Blue has been short-circuited to Bay Courant and the lower reaches of the bayou are nearly non-functional. This short-circuiting is also allowing increased tidal exchange to occur in interior marshes.

Goals - The project hopes to reduce saltwater intrusion and excessive tidal exchange in northern area marshes by building a land bridge across the basin at the twin pipelines and by restoring flow patterns within Grand Bayou Blue.

Proposed Solution - Project features would include:

a) 6,720 feet of foreshore armored dike along portions of the south bank of Catfish Lake
b) 13 rock riprap canal plugs
c) 4 earthen plug closures
d) 2 sheetpile bulkhead closures across twin pipelines
e) repair wingwalls of 1 existing fixed crested weir
f) repair 7 spoil bank breaks along the twin pipelines
g) 4 rock channel liners to prevent channel scouring
h) 3,400 feet of embankment restoration along Grand Bayou Blue

Project Benefits – The project would benefit 26,377 acres of brackish and saline marsh. Approximately 125 acres of marsh would be protected over the 20-year project life.

Project Costs – The estimated total fully funded cost is $18,541,100.

Risk/Uncertainty and Longevity/Sustainability – There is a high degree of risk/uncertainty associated with this project because it is not known if the features will reduce saltwater intrusion. Hydrologic modeling has been included in the project design and would be completed prior to project implementation. The project should continue providing benefits for 20 - 30 years after construction because maintenance of all features has also been included in the project costs.

Sponsoring Agency and Contact Persons –
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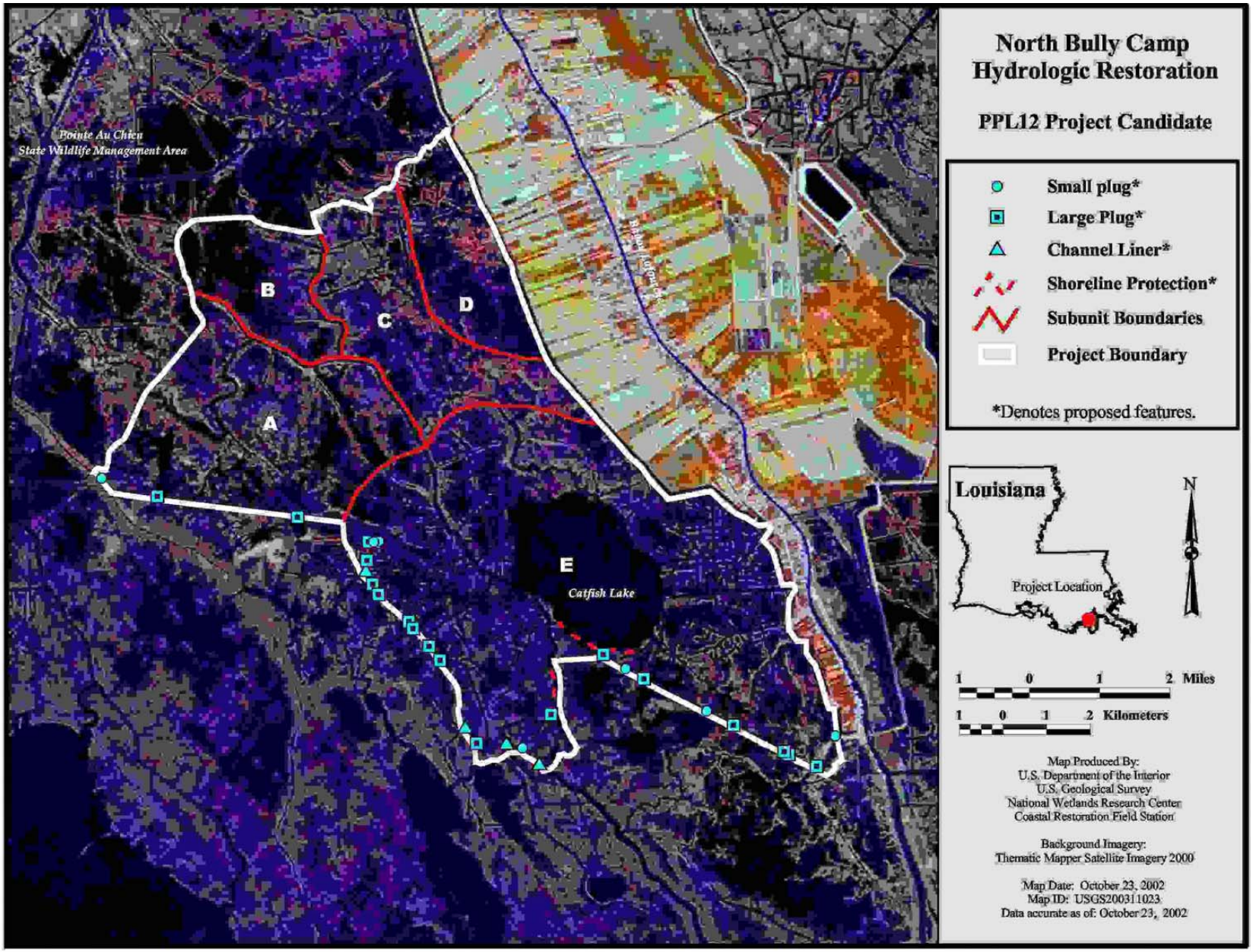
Loland Broussard, NRCS, 337/291-3069, loland.broussard@la.usda.gov


North Bully Camp
Hydrologic Restoration
PPL12 Project Candidate
Small plug*
Large Plug*
Channel Liner*
Shoreline Protection*
Subunit Boundaries
Project Boundary
*Denotes proposed features.
Pointe Au Chien
State Wildlife Management Area
A
B
C
D
E
Catfish Lake
Louisiana
Project Location
N
1 0 1 2 Miles
1 0 1 2 Kilometers
Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Background Imagery:
Thematic Mapper Satellite Imagery 2000
Map Date: October 23, 2002
Map ID: USGS20031023
Data accurate as of: October 23, 2002

South White Lake Shoreline Protection (R4-3)

Coast 2050 Strategy

- Stabilize Grand Lake and White Lake shorelines

Project Location

Region 4, Mermentau Basin, Vermilion Parish, along the southern shoreline of White Lake from Will's Point to the western shore of Bear Lake.

Problem

The south shoreline of White Lake is retreating at an estimated average rate of 15 feet per year as a result of wind-induced wave energy. As the shoreline erodes, it could breach low marsh management levees and increase interior marsh loss rates in the area.

Goals

The goal of this project is to stop shoreline erosion and to promote accretion of marsh between the breakwater and the existing shoreline.

Proposed Solution

This project would construct segmented breakwaters along 55,000 feet of shoreline. The four-foot high breakwaters would be built along the minus two-foot contour with a five-foot wide crown. The segmented breakwaters would be constructed in 200-foot sections with 50-foot gaps between each section. The gaps will allow organism and water exchange. An estimated 270,000 tons of stone would be placed on geotextile fabric. A flotation channel would be required for construction access and material dredged to build the access channel would be cast either in front of or behind the breakwater.

Project Benefits

The project would benefit about 5,222 acres of fresh marsh and open water. Approximately 702 acres of marsh would be created/protected over the 20-year project life.

Project Costs

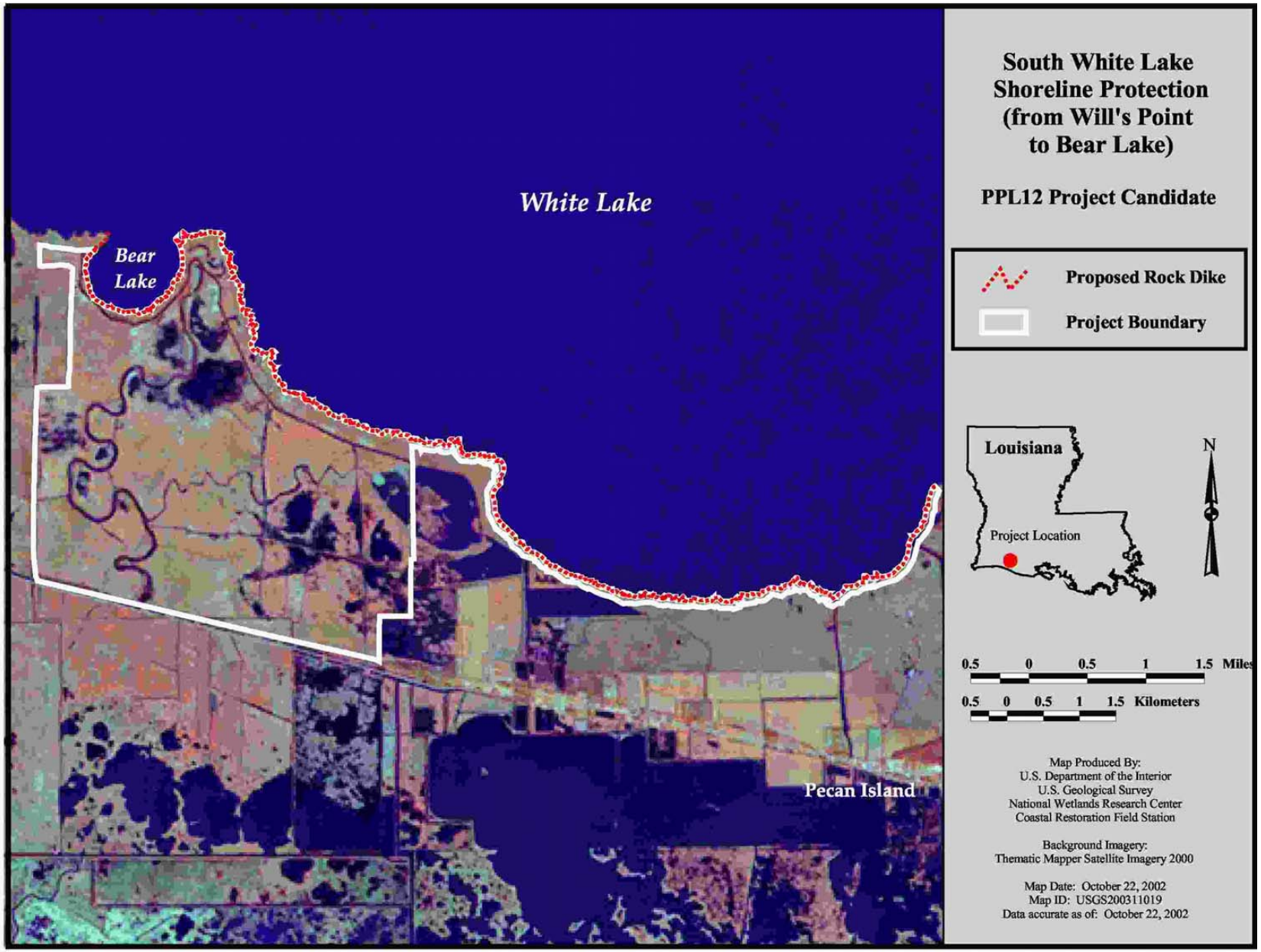
The estimated total fully funded cost is $25,042,300.

Risk/Uncertainty and Longevity/Sustainability

There is a low degree of risk associated with this project because rock dikes are an effective technique for stopping shoreline erosion. The project should continue providing benefits 20–30 years after construction because adequate O&M funds are budgeted through TY20.

Sponsoring Agency and Contacts

Gregory Miller, Corps of Engineers, (504) 862-2310
Chris Monnerjahn, Corps of Engineers, (504) 862-2415


White Lake
Bear Lake
Pecan Island
South White Lake Shoreline Protection (from Will's Point to Bear Lake)
PPL12 Project Candidate
Proposed Rock Dike
Project Boundary
Louisiana
Project Location
N
0.5 0 0.5 1 1.5 Miles
0.5 0 0.5 1 1.5 Kilometers
Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Background Imagery:
Thematic Mapper Satellite Imagery 2000
Map Date: October 22, 2002
Map ID: USGS200311019
Data accurate as of: October 22, 2002

DEMONSTRATION PROJECTS

Section 303(a) of the CWPPRA states that in the development of Priority Project List, ". . . [should include] due allowance for small-scale projects necessary to **demonstrate the use of new techniques or materials for coastal wetlands restoration**."

The CWPPRA Task Force on April 6, 1993, stated that: "The Task Force directs the Technical Committee to limit spending on demonstration projects to $2,000,000 annually. The Task Force will entertain exceptions to this guidance for projects that the Technical Committee determines merit special consideration. The Task Force waives the cap on monitoring cost for demonstration projects."

What constitutes a demonstration project:

1. Demonstration projects contain technology that has not been fully developed for routine application in coastal Louisiana or in certain regions of the coastal zone.

2. Demonstration projects contain technology which can be transferred to other areas of the coastal zone.

3. Demonstration projects are unique and are not duplicative in nature.

PPL 12 Demonstration Project Candidates

The following proposed demonstration projects were evaluated for the 12th Priority Project List.

- Ecological Wave Buffer Demonstration Project
- Freshwater Floating Marsh Creation Demonstration Project
- Ground Improvement Demonstration Project

Ecological Wave Buffer Demonstration Project

Coast 2050 Strategy n/a

Project Location n/a

Problem
Vessel wake erosion is occurring along the wetland fringes of the MRGO. Area soils have poor erosive resistance to relatively high, water velocities. Soil loss from around plant root masses eventually leads to successive loosening, dislodgement, and retreat of the wetland fringe. If these deteriorative processes remain unaddressed, the area's existing wetlands are threatened with conversion to shallow open water bottoms.

Goals
This project is proposed to demonstrate the merit of using temporary wave buffer schemes for establishment of vegetation to protect existing fringe wetlands that are exposed to and are suffering loss from vessel-induced wave action.

Proposed Solution
A combination of mats, prepared from locally abundant- and weathering-resistant vegetation (e.g. willow, reed, or coconut 'coir'), and a selection of suitable wetland plant species and/or ecotypes, with or without clay-layer strengthened slope-feet would be placed at several locations along the MRGO South Bank, using the mats as temporary wave buffers and medium for planting with the intent to attenuate wave action and establish vegetation for erosion reduction, concomitant with clay deposition for slope support. The mats would be expected to degrade as plants establish and become more resistant to wave action. Clay deposition is expected to reduce the erosion process initiated at the foot of slopes due to wave action from navigation. Each treatment would include a minimum shoreline length of 1000 ft, 3 replicates per treatment, and a distance of 6 ft between treatments for a total shoreline length of approximately 28,000 ft. In the event the total number of treatments exceeds available funding and/or suitable shoreline sites, the project would be resized to fit budget and site availability. The performance of project will be evaluated through a monitoring plan. The short-term component will involve observation and description of the treatments after one year (growth season) and rating for success in abating retreat of existing wetland fringes.

Project Benefits
Develop low cost, soft armoring systems that would allow wetland vegetation to establish in high erosion areas.

Project Costs
The estimated total fully funded cost is $1,332,300.

Points of Contact
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Edmond Russo, USACE (504) 862-1496, edmond.j.russo@mvn02.usace.army.mil
Julie LeBlanc, Corps of Engineers, (504) 862-1597

Freshwater Floating Marsh Creation Demonstration Project

Coast 2050 Strategy
n/a

Project Location
n/a

Problem
Within fresh and intermediate zones of Barataria and Terrebonne Basins tens of thousands of acres of marsh have converted to open water between 1968 and 1990. Within those basins large areas of fresh and intermediate open water exist in marsh interior presenting opportunities for re-establishment/creation. These open water areas are not well-suited for typical projects such as sediment diversions, beneficial use of dredge material or dedicated dredging.

Goals
Develop and test unique and previously untested technologies for creating floating marsh for potential use in fresh and intermediate zones.

Proposed Solution
Develop and test buoyant vegetated mats/artificial islands in controlled environment (Year 1) followed by deployment into open water marsh or abandoned canals (Year 2). Various combinations of plant species, planting methods and substrates will be tested to determine best mat-producing technique.

Project Benefits
Provide needed technology that is transferable.

Project Costs
The estimated total fully funded cost is $1,080,900.

Sponsoring Agency and Contact Person
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Ground Improvement Demonstration Project

Coast 2050 Strategy
n/a

Project Location
n/a

Problem
Poor soil conditions in coastal Louisiana limit the effectiveness of shoreline protection dikes because of high rates of subsidence. High subsidence requires frequent and expensive project maintenance lowering overall project cost effectiveness.

Goals
Investigate subsurface ground improvement methods to reduce subsidence rates at shoreline protection sites.

Solution
This project would (1) test multiple foundation treatment options and try to select subsurface conditions to minimize geo-variability, or (2) select a reach with known and quantified geo-variability in subsurface (multiple subsurface conditions) and one treatment option. Up to five different techniques would be tested including: Dry-Mix Options for Soil Mixing; Variations on a Sand Base; Using near surface grouting of very soft clays; and using Pre-formed low weight components and underground buoyancy methods. Post-construction monitoring data would be analyzed to evaluate structure performance for test cases and reference sections.

Project Benefits
Develop one or more ground improvement technologies for application in coastal Louisiana to demonstrate alternative means to achieve bearing capacity and consolidation settlement design tolerances to lessen 20-year project life cycle costs.

Project Costs
The estimated total fully funded cost is $1,212,000.

Points of Contact
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PPL 12 Candidate Project Evaluation Matrix

Project No.	Project Name	Parish	Avg Annual Habitat Unit (AAHU)	Project Area	Net Acres	Coast 2050 Criteria Score	Long./ Sust.	Risk/ Uncert.	Average Annual Cost (AAC)	Total Fully Funded Cost	Phase I Cost	Phase II Cost	Cost Effectiveness (AAC/AAHU)
PO-R1-1	Hydrologic Restoration in the Swamps West of Lake Maurepas	Livingston	1,878	6,458	n/a	45	30 - 40 years	High	$476,700	$5,997,700	$972,625	$5,025,075	$254
PO-R1-3	Lake Borgne and MRGO Shoreline Protection	St. Bernard	70	465	266	43	20 - 30 years	Low	$1,693,300	$25,062,900	$1,348,345	$23,714,555	$24,270
BA-R2-1	Bayou Dupont Sediment Delivery System	Plaquemines	189	538	400	27	30 - 40 years	Low	$2,206,500	$24,727,100	$2,192,735	$22,534,365	$11,683
BA-R2-2	Shell Island Barrier Headland Restoration	Plaquemines	393	1,294	296	47	20 - 30 years	Moderate	$8,419,100	$98,456,700	$5,357,586	$93,099,114	$21,437
BA-R2-2a	Shell Island Barrier Headland Restoration (Increment east only)	Plaquemines	319	1,114	217	47	20 -30 years	Moderate	$6,635,600	$81,916,200	$4,463,376	$77,452,824	$19,777
AT-R3-2	Avoca Island Diversion and Land Building	St. Mary /Terrebonne	132	7,233	143	33	30 - 40 years	Low	$1,699,400	$19,157,200	$2,229,876	$16,927,324	$12,906
TE-R3-1	North Bully Camp Hydrologic Restoration	Lafourche	233	26,377	125	50	20 - 30 years	High	$1,365,000	$18,541,100	$2,074,216	$16,466,884	$5,847
ME-R4-3	South White Lake Shoreline Protection	Vermilion	172	5,222	702	44	20 - 30 years	Low	$1,756,600	$25,042,300	$1,588,085	$23,454,215	$10,194

PPL 12 Demonstration Project Evaluation Matrix

Project	Objectives	Lead Agency	Total Fully Funded Cost	P1	P2	P3	P4	P5	P6	Total Score
Ecological Wave Buffer	Reduce shoreline erosion	USACE	$1,332,300	7	7	3	7	10	3	37
Freshwater Floating Marsh	Create floating marsh	NRCS	1,080,900	10	7	10	10	10	7	54
Ground Improvement	Reduce shoreline erosion	USACE	$1,212,000	10	7	7	3	10	7	44

The following parameters constitute a demonstration project and were evaluated:

(P1) Innovativeness - Demonstration projects contain technology that has not been fully developed for routine application in coastal Louisiana or in certain regions of the coastal zone.

(P2) Applicability or Transferability - Demonstration projects contain technology that can be transferred to other areas of the coastal zone.

(P3) Potential Cost Effectiveness - An evaluation of the project must be made to compare the demonstration project's method of achieving the project objectives vs. a traditional method of accomplishing the project objective.

(P4) Potential Environmental Benefits - No Wetland Value Assessment (WVA) will be performed on candidate demonstration projects. Instead, the project will be evaluated on the pros and cons of the demonstration vs. traditional or other methods.

(P5) Recognized Need for Information to be Acquired - Demonstration Projects should be unique and are not duplicative in nature. They do not need to be in the Restoration Plan, but must contain technology that has not been fully developed for routine application in coastal Louisiana and can be transferred to other parts of the coastal zone.

(P6) Potential for Technological Advancement - Demonstration projects must clearly show what objectives will be gained from the project and an evaluation must be made of the demonstration project's method for achieving these objectives compared to a traditional project's methods of achieving the same objectives.