15th PRIORITY PROJECT LIST REPORT

PREPARED BY:

LOUISIANA COASTAL WETLANDS CONSERVATION AND RESTORATION TASK FORCE

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Coastal Wetlands Planning, Protection and Restoration Act

15th Priority Project List Report

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I. INTRODUCTION

Approximately 90 percent of the total coastal marsh loss within the lower 48 states occurs in the State of Louisiana. These losses are due to a combination of human and natural factors, including subsidence, shoreline erosion, freshwater and sediment deprivation, saltwater intrusion, oil and gas canals, navigation channels, and herbivory. Louisiana still contains 30 percent of all the coastal marshes and 45 percent of all intertidal coastal marshes in the lower 48 states. Dramatic annual wetland losses from 1990 to the present of 24 square miles per year in the state continue to threaten the resource. In addition, significant land losses occurred from the fall of 2004 to the fall of 2005 due to Hurricanes Katrina and Rita with a total of 118 square miles of land lost. The transformation of land to new water areas includes the entire coast of Louisiana from the Chandeleur Islands to the Atchafalaya River. Moveover, the change from land to water in all of coastal Louisiana east of the Mississippi due to these two hurricanes was 72.9 square miles, exceeding the 60-square miles projected to occur for a period of 50 years (2000-2050). Concern over this loss exists because of the living resources and national economies dependent on Louisiana's coastal wetlands. These wetlands provide habitat for fisheries, waterfowl, neotropical birds, and furbearers; amenities for recreation and tourism; a buffer for coastal flooding; and a natural landscape for a culture unique to the world. Consequently, benefits go well beyond the local and state levels by providing positive economic impacts to the entire nation.

The coastal wetland loss problem in Louisiana is extensive and complex. Agencies of diverse purposes and missions that are involved with addressing the problem have proposed many alternative solutions. These proposals have had a wide spectrum of approaches for diminishing, neutralizing, or reversing these losses. A global observation of these efforts by federal, state and local governments and the public has led to the conclusion that a comprehensive approach is needed to address this significant environmental problem. In response to this, the Coastal Wetlands Planning, Protection and Restoration Act (Public Law 101-646) – also known as the Breaux Act – was signed into law by President George H.W. Bush on November 29, 1990. This report documents the implementation of Section 303(a) of the cited legislation.

STUDY AUTHORITY

Section 303(a) of the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA, or the Breaux Act), displayed in Appendix A, directs the Secretary of the Army to convene the Louisiana Coastal Wetlands Conservation and Restoration Task Force to:

> . . . initiate a process to identify and prepare a list of coastal wetlands restoration projects in Louisiana to provide for the long-term conservation of such wetlands and dependent fish and wildlife populations in order of priority, based upon the cost-effectiveness of such projects in creating, restoring, protecting, or enhancing coastal wetlands, taking into account the quality of such coastal wetlands, with due allowance for small-scale projects necessary to demonstrate the use of new techniques or materials for coastal wetlands restoration.

STUDY PURPOSE

The purpose of this study effort was to prepare the 15th Priority Project List (PPL) and transmit the list to Congress, as specified in Section 303(a)(3) of the CWPPRA. Section 303(b) of the Act calls for preparation of a comprehensive restoration plan for coastal Louisiana. In November 1993, the Louisiana Coastal Wetlands Restoration Plan was submitted. In December 1998, *Coast 2050: Toward a Sustainable Coastal Louisiana* was signed by all federal and state Task Force members. This plan consisted of several regional ecosystem strategies, that if all implemented would achieve no net loss of coastal marsh in Louisiana by the year 2050. A broad coalition of federal, state, and local entities, landowners, environmentalists, and wetland scientists developed the plan. In addition, all 20 coastal parishes approved the Coast 2050 plan.

PROJECT AREA

The entire coastal area, which comprises all or part of 20 Louisiana parishes, is considered to be the CWPPRA project area. To facilitate the study process, the coastal zone was divided into four regions with nine hydrologic basins (refer to Plate 1). Plate 2 contains a listing of project names for each PPL, referenced by number and grouped by sponsoring agency. A map of the Louisiana coastal zone is presented in Plates 3-7, indicating project locations by number of Priority Project Lists 1 through 15.

STUDY PROCESS

The Interagency Planning Groups. Section 303(a)(1) of the CWPPRA directs the Secretary of the Army to convene the Louisiana Coastal Wetlands Conservation and Restoration Task Force, to consist of the following members:

- The Secretary of the Army (Chairman)
- The Administrator, Environmental Protection Agency
- The Governor, State of Louisiana
- The Secretary of the Interior
- The Secretary of Agriculture
- The Secretary of Commerce

The State of Louisiana is a full voting member of the Task Force, with the exception of budget matters, as stipulated in President George H.W. Bush's November 29, 1990, signing statement (Appendix A). In addition, the State of Louisiana may not serve as a "lead" Task Force agency for design and construction of wetlands projects of the PPL.

In practice, the Task Force members named by the law have delegated their responsibilities to other members of their organizations. For instance, the Secretary of the Army authorized the Commander of the Corps of Engineers New Orleans District to act in his place as chairman of the Task Force.

The Task Force established the Technical Committee and the Planning and Evaluation Subcommittee, to assist it in putting the CWPPRA into action. Each of these bodies contains the same representation as the Task Force – one member from each of the five federal agencies and one from the state. The Planning and Evaluation Subcommittee is responsible for the actual planning of projects, as well as the other details involved in the CWPPRA process (such as development of schedules, budgets, etc.). This subcommittee makes recommendations to the Technical Committee and lays the groundwork for decisions that will ultimately be made by the Task Force. The Technical Committee reviews all materials prepared by the subcommittee, makes appropriate revisions, and provides recommendations to the Task Force. The Technical Committee operates at an intermediate level between the planning details considered by the subcommittee and the policy matters dealt with by the Task Force, and often formalizes procedures and formulates policy for the Task Force.

The Planning and Evaluation Subcommittee established several working groups to evaluate projects for priority project lists. The Environmental Work Group was charged with estimating the benefits (in terms of wetlands created, protected, enhanced, or restored) associated with various projects. The Engineering Work Group reviewed project and design cost estimates for consistency. The Economic Work Group performed the economic analysis, which permitted comparison of projects on the basis of their cost effectiveness. The Monitoring Work Group established a standard procedure for monitoring of CWPPRA projects, developed a monitoring cost estimating procedure based on project type, and a review of all monitoring plans.

The Task Force also established a Citizen Participation Group to provide general input from the diverse interests across the coastal zone: local officials, landowners, farmers, sportsmen, commercial fishermen, oil and gas developers, navigation interests, and environmental organizations. The Citizen Participation Group was formed to promote citizen participation and involvement in formulating priority project lists and the restoration plan. The group meets at its own discretion, but may at times meet in conjunction with other CWPPRA elements, such as the Technical Committee. The purpose of the Citizen Participation Group is to maintain consistent public review and input into the plans and projects being considered by the Task Force and to assist and participate in the public involvement program.

Involvement of the Academic Community. While the agencies sitting on the Task Force possess considerable expertise regarding Louisiana's coastal wetlands problems, the Task Force recognized the need to incorporate another invaluable resource: the state's academic community. The Task Force therefore retained the services of the Louisiana Universities Marine Consortium (LUMCON) to provide scientific advisors to aid the

Environmental Work Group in performing Wetland Value Assessments. This Academic Advisory Group also assisted in carrying out feasibility studies authorized by the Task Force. These include:

- The Louisiana Barrier Shoreline study – March 1995 - March 1999 (managed by the Louisiana Department of Natural Resources), and
- The Mississippi River Sediment, Nutrient, and Freshwater Redistribution study – March 1995 – July 2000 (managed by the Corps of Engineers).

Public Involvement. Even with its widespread membership, the Citizen Participation Group cannot represent all of the diverse interests concerned about Louisiana's coastal wetlands. The CWPPRA public involvement program provides an opportunity for all interested parties to express their concerns and opinions and to submit their ideas concerning the problems facing Louisiana's wetlands. The Task Force has held at least eight public meetings annually to obtain input from the public. In addition, the Task Force distributes a quarterly newsletter ("Watermarks") with information on the CWPPRA program and on individual projects.

II. PLAN FORMULATION PROCESS FOR THE 15TH PRIORITY PROJECT LIST

IDENTIFICATION & SELECTION OF CANDIDATE PROJECTS

Regional Planning Team (RPT) meetings were held during the period of February 1 through February 3, 2005 to provide a forum for the public and their local government representatives to identify potential projects for implementation under the priority list process. The RPT met to examine basin maps, discuss areas of need and Coast 2050 strategies and to choose no more than one project per hydrologic basin, except that two projects may be selected from Terrebonne and Barataria Basins because of the high loss rates in those basins. A total of up to eleven projects could be nominated. A schedule of meetings is shown in Table 1.

Table 1: RPT Meetings to Nominate Projects

Region 1: New Orleans, Louisiana	February 3, 2005
Region 2: New Orleans, Louisiana	February 3, 2005
Region 3: Morgan City, Louisiana	February 2, 2005
Region 4: Rockefeller Refuge, Louisiana	February 1, 2005

The Engineering and Environmental Work Groups and the Academic Advisory Group (AAG) met on March 7 and 8, 2005 to review and reach consensus on preliminary project features, benefits, and fully funded cost estimates for eleven nominated projects. The Engineering and Environmental Work Groups also identified any potential issues associated with each nominee. The Planning and Evaluation (P&E) Subcommittee prepared a matrix of nominated projects' cost estimates and benefits and furnished it to the Technical Committee and State Wetlands Authority (SWA) on March 10, 2005. The matrix is included as Table 2.

Table 2: 15th Project Priority List - Nominee Project Matrix by Basin

						Potential Issues				
Rg.	**Basin**	**Type**	**Project**	**Preliminary Fully Funded Cost Range**	**Preliminary Benefits (Net Acres Range)**	**Oysters**	**Land Rights**	**Pipelines/ Utilities**	**O&M**	**Other Issues**
1	PO	SP	East Orleans Landbridge Shoreline Protection	$10M - $15M	150-200			X	X	X Gulf Sturgeon
2	BS	FD	Bayou Lamoque Freshwater Diversion	$0M - $5M	500-550	X	X	X	X	
2	BA	MC	Lake Hermitage Marsh Creation	$15M - $20M	350-400		X	X		
2	BA	MC	Buras to Triumph Levee Fringe Marsh Restoration	$40M - $50M	450-500	X	X	X		
2	MR	MC/FD	Venice Ponds Marsh Creation and Crevasses	$10M - $15M	450-500		X	X		
3	TE	TR	South Terrebonne Parish Marsh Terracing	$15M - $20M	150-200	X	X	X	X	
3	TE	MC	North Lost Lake Marsh Creation	$10M - $15M	250-300			X		

						Potential Issues				
Rg.	**Basin**	**Type**	**Project**	**Preliminary Fully Funded Cost Range**	**Preliminary Benefits (Net Acres Range)**	**Oysters**	**Land Rights**	**Pipelines/ Utilities**	**O&M**	**Other Issues**
3	AT	SP	Point Chevreuil Shoreline Protection	$10M - $15M	100-150				X	
3	TV	MC/SP	Bird Island/Southwest Pass Marsh Creation and Shoreline Protection	$15M - $20M	150-200	X	X		X	
4	ME	HR	South Pecan Island Freshwater Introduction	$0M - $5M	50-100		X	X	X	
4	CS	SP	Holly Beach Breakwaters West Extension	$10M - $15M	50-100		X	X	X	X Erosion Shadow

Basin codes are: PO=Pontchartrain; BS=Breton Sound; MR=Mississippi River Delta; BA=Barataria; TE=Terrebonne; AT=Atchafalaya; TV=Teche/Vermilion; ME=Mermentau; CS=Calcasieu/Sabine.
Type codes: FD=Freshwater Diversion; HR=Hydrologic Restoration; MC=Marsh Creation; OM= Outfall Management; SP=Shoreline Protection; TR=Terracing.

The CWPPRA Technical Committee met publicly on March 16, 2005 to consider the preliminary costs, wetland benefits, and potential issues of the nominees. Six candidate projects were selected for detailed assessment by the Environmental, Engineering, and Economic Work Groups, and the AAG.

The deadline for nominating demonstration candidate projects was June 1, 2005. Thirteen demonstration projects were submitted for assessment by the Workgroups and the AAG.

Phase 0 analysis of the six candidate projects took place from May 2005 through August 2005. Interagency field visits were conducted during April and May 2005 at each project site/area with members of the Engineering and Environmental Work Groups, and the AAG. The Environmental and Engineering Work Groups and AAG met to refine the projects and develop boundaries on June 2, 2005, based on site visits. Detailed project information packages were developed by the Environmental, Engineering, and Economics Work Groups. These packages included fact sheets addressing "compatibility with Coast 2050," Project Information Sheets containing the benefits analyses, Preliminary Engineering and Design Reports containing the preliminary design and cost estimates, and Economic Analyses containing fully-funded twenty-year project costs. On July 6, 2005 and July 21, 2005, the Engineering Work Group met to review and approve the Phase I and II cost estimates developed by the agencies. In June and July 2005, the Environmental Work Group finalized Wetland Value Assessments (WVAs) for each project.

The Environmental and Engineering Work Groups and AAG reviewed and approved prioritization fact sheets and scores for each of the candidate projects at a meeting on August 2, 2005. The Economics Work Group reviewed cost estimates and developed annualized costs in the month of August 2005.

The Environmental and Engineering Work Groups and AAG also met on August 2-3, 2005 to perform evaluations on the thirteen demonstration projects. Demonstration projects were evaluated using defined parameters. Within each of these parameters a project was graded as either low, medium or high and assigned point scores of 1, 2, or 3, respectively. The summary of the evaluation from the Environmental and Engineering

Work Groups and AAG is shown in Table 3. The parameters used to evaluate the demonstration projects were:

(P_1) Innovativeness - The demonstration project should contain technology that has not been fully developed for routine application in coastal Louisiana or in certain regions of the coastal zone. The technology demonstrated should be unique and not duplicative in nature to traditional methods or other previously tested techniques for which the results are known. Techniques which are similar to traditional methods or other previously tested techniques should receive lower scores than those which are truly unique and innovative.

(P_2) Applicability or Transferability - Demonstration projects should contain technology which can be transferred to other areas of the coastal zone. However, this does not imply that the technology must be applicable to all areas of the coastal zone. Techniques, which can only be applied in certain wetland types or in certain coastal regions, are acceptable but may receive lower scores than techniques with broad applicability.

(P_3) Potential Cost Effectiveness - The potential cost-effectiveness of the demonstration project's method of achieving project objectives should be compared to the cost-effectiveness of traditional methods. In other words, techniques which provide substantial cost savings over traditional methods should receive higher scores than those with less substantial cost savings. Those techniques which would be more costly than traditional methods, to provide the same level of benefits, should receive the lowest scores. Information supporting any claims of potential cost savings should be provided.

(P_4) Potential Environmental Benefits - Does the demonstration project have the potential to provide environmental benefits equal to traditional methods? Somewhat less than traditional methods? Above and beyond traditional methods? Techniques with the potential to provide benefits above and beyond those provided by traditional techniques should receive the highest scores.

(P_5) Recognized Need for the Information to be Acquired - Within the restoration community, is there a recognized need for information on the technique being investigated? Demonstration projects which provide information on techniques for which there is a great need should receive the highest scores.

(P_6) Potential for Technological Advancement - Would the demonstration project significantly advance the traditional technology currently being used to achieve project objectives? Those techniques which have a high potential for completely replacing an existing technique at a lower cost and without reducing wetland benefits should receive the highest scores.

Table 3: Review of 15th Priority Project List Candidate Demonstration Projects

			Parameter (P_n)						
Demonstration Project Name	**Lead Agency**	**Total Fully Funded Cost**	**P_1**	**P_2**	**P_3**	**P_4**	**P_5**	**P_6**	**Total Score**
Enhancement of Barrier Island Vegetation Demonstration	EPA	$845,187	3	3	3	3	2	2	16
Barrier Island Sand Blowing Demonstration	USACE	$1,919,343	3	2	2	3	3	2	15
Nourishment of Permanently Flooded Cypress Swamps Through Dedicated Dredging Demonstration	FWS	$1,550,188	3	2	2	3	3	2	15
Dredge Containment System for Marsh Creation Demonstration	NRCS	$1,073,163	3	3	2	2	2	2	14
Evaluation of Bioengineered Reefs Performing as Submerged Breakwaters Demonstration	NMFS	$1,421,702	2	2	2	2	3	3	14
Thin Layer Dredge Disposal Demonstration	NMFS	$1,232,780	2	3	2	2	3	2	14
Floating Wave Attenuator Demonstration	EPA	$1,792,804	3	2	2	2	2	2	13
HESCO Concertainer Baskets for Shoreline Protection Demonstration	USACE	$1,462,854	2	2	3	2	2	2	13
Lake Pontchartrain Shoreline Protection and Habitat Enhancement Demonstration	USACE	$2,596,584	2	2	2	2	2	2	12
Backfilling Canals to Maximize Hydrologic Restoration Demonstration	EPA	$1,718,766	1	2	2	3	2	1	11
Delta Management Demonstration	FWS	$1,131,096	2	1	2	2	2	2	11
Flowable Fill Demonstration	NRCS	$926,986	3	1	1	2	1	2	10
Backshore and Dune Stabilization Demonstration	FWS	$883,536	1	1	2	2	1	1	8

Demonstration Project Parameters:
(P_1) Innovativeness; (P_2) Applicability or Transferability; (P_3) Potential Cost Effectiveness; (P_4) Potential Environmental Benefits; (P_5) Recognized Need for the Information to be Acquired; (P_6) Potential for Technological Advancement.
Parameter Grading as to effect: 1= low; 2 = medium; 3 = high

The Environmental and Engineering Work Groups prepared a candidate project information package for the CWPPRA Technical Committee, consisting of updated Project Information Sheets and matrix. The matrix included average annual habitat units (AAHUs), WVA results (acres created, restored, and/or protected), prioritization score, and costs. The matrix is included as Table 4.

Table 4: 15th Priority Project List Candidate Project Evaluation Matrix

Project Name	AAHUs	WVA Net Acres	Prioritization Score	Total Fully Funded Cost	Average Annual Cost (AAC)	Cost Effectiveness (AAC/AAHU)
Bayou Lamoque Freshwater Diversion	560	620	74.00	$5,375,741	$382,950	$684
Lake Hermitage Marsh Creation	191	438	58.45	$32,673,327	$2,556,021	$13,382
Venice Ponds Marsh Creation and Crevasses	153	511	67.20	$8,992,955	$702,079	$4,589
South Terrebonne Terracing	54	80	33.05	$7,477,864	$549,512	$10,176
Bird Island/Southwest Pass Marsh Creation and Shoreline Protection	62	133	35.30	$17,765,314	$1,245,320	$20,086
South Pecan Island Freshwater Introduction	100	98	51.50	$4,438,695	$331,331	$3,313

Two public meetings were scheduled for August 30 and 31, 2005 in Abbeville and New Orleans, respectively, to present projects for public comment. These meetings were rescheduled as a result of Hurricane Katrina which made landfall in southeast Louisian August 29, 2005. Two public meetings were held in Abbeville, LA, and Houma, LA, respectively, November 8 and 9, 2005, to present projects to the public for comment.

Because of the delay in presenting projects to the public, the CWPPRA Technical Committee and Task Force deviated from their schedule to select projects for Phase I funding at the September/October 2005 Technical Committee/Task Force meetings.

The CWPPRA Technical Committee met on December 7, 2005 to select projects for recommendation to the CWPPRA Task Force for Phase I funding. Each agency received a total of four weighted votes, used to rank the six candidate projects. Projects were ranked by number of agency votes first and total weighted score second. The top four projects were selected for recommendation to the CWPPRA Task Force for Phase I funding approval on February 8, 2006. The Technical Committee also ranked the thirteen demonstration projects. Each agency received a total of two weighted votes, used to rank the thirteen demonstration projects. The Technical Committee did not recommend any demonstration projects for funding. The results of the CWPPRA Technical Committee vote are outlined in Table 5. On February 8, 2006, the CWPPRA Task Force reviewed the Technical Committee recommendations and moved to adopt the recommendation without change.

Table 5: 15th Priority Project List Candidate Selection Process – Agency Voting Record

*Project No.	Nominee Project Name	Coast 2050 Region	EPA	COE	FWS	STATE	NRCS	NMFS	No. of Votes	Sum of Point Score
BA-42	**Lake Hermitage Marsh Creation**	R2	3	2	3	3	1	1	6	13
BS-13	**Bayou Lamoque Freshwater Diversion**	R2	4	3	4	4		4	5	19
MR-15	**Venice Ponds Marsh Creation and Crevasses**	R2	2	4	2			3	4	11
ME-23	**South Pecan Island Freshwater Introduction**	R4	1				4	2	3	7
+	**Bird Island/Southwest Pass Marsh Creation and Shoreline Protection**	R3			1	2	3		3	6
+	**South Terrebonne Terracing**	R3		1		1	2		3	4

Demonstration Projects

*Project No.	Demonstration Project Name	Coast 2050 Region	EPA	COE	FWS	STATE	NRCS	NMFS	No. of Votes
+	**Enhancement of Barrier Island Vegetation Demonstration**	N/A	1			1			2
+	**Nourishment of Permanently Flooded Cypress Swamps Through Dedicated Dredging Demonstration**	N/A			1			1	2
+	**Barrier Island Sand Blowing Demonstration**	N/A		1					1
+	**Dredge Containment System for Marsh Creation Demonstration**	N/A					1		1
+	**Evaluation of Bioengineered Reefs Performing as Submerged Breakwaters Demonstration**	N/A							0
+	**Thin Layer Dredge Disposal Demonstration**	N/A							0
+	**Floating Wave Attenuator Demonstration**	N/A							0
+	**HESCO Concertainer Baskets for Shoreline Protection Demonstration**	N/A							0
+	**Lake Pontchartrain Shoreline Protection and Habitat Enhancement Demonstration**	N/A							0
+	**Backfilling Canals to Maximize Hydrologic Restoration Demonstration**	N/A							0
+	**Delta Management Demonstration**	N/A							0
+	**Flowable Fill Demonstration**	N/A							0
+	**Backshore and Dune Stabilization Demonstration**	N/A							0

*Each selected project received a two-letter code to identify its basin; these codes are: PO-Ponchartrain; BS-Breton Sound, MR-Mississippi River Delta; BA-Barataria; TE-Terrebonne; AT-Atchafalaya; TV-Teche/Vermilion; ME-Mermentau; CS-Calcasieu/Sabine.
Projects below bolded line were not selected for funding.
+ These projects were not selected for funding.

EVALUATION OF CANDIDATE PROJECTS

Benefit Analysis (WVA). The WVA is a quantitative, habitat-based assessment methodology developed for use in prioritizing project proposals submitted for funding under the Breaux Act. The WVA quantifies changes in fish and wildlife habitat quality and quantity that are projected to emerge or develop as a result of a proposed wetland enhancement project. The results of the WVA, measured in AAHUs, can be combined with economic data to provide a measure of the effectiveness of a proposed project in terms of annualized cost per AAHU protected and/or gained.

The Environmental Work Group developed a WVA for each project. The WVA has been developed strictly for use in ranking proposed CWPPRA projects; it is not intended to provide a detailed, comprehensive methodology for establishing baseline conditions within a project area. It is a modification of the Habitat Evaluation Procedures (HEP) developed by the U.S. Fish and Wildlife Service (FWS) (U.S. Fish and Wildlife Service, 1980). HEP is widely used by the FWS and other federal and state agencies in evaluating the impacts of development projects on fish and wildlife resources. A notable difference exists between the two methodologies. The HEP generally uses a species-oriented approach, whereas the WVA uses a community approach.

The following coastal Louisiana wetland types can be evaluated using WVA models: fresh marsh (including intermediate marsh), brackish marsh, saline marsh, and cypress-tupelo swamp. Future reference in this document to "wetland" or "wetland type" refers to one or more of these four communities.

These models operate under the assumption that optimal conditions for fish and wildlife habitat within a given coastal wetland type can be characterized, and that existing or predicted conditions can be compared to that optimum to provide an index of habitat quality. Habitat quality is estimated or expressed through the use of a mathematical model developed specifically for each wetland type. Each model consists of the following components:

1. A list of variables that are considered important in characterizing fish and wildlife habitat:
    a. V_1--percent of wetland covered by emergent vegetation,
    b. V_2--percent open water dominated by submerged aquatic vegetation,
    c. V_3--marsh edge and interspersion,
    d. V_4--percent open water less than or equal to 1.5 feet deep,
    e. V_5--salinity, and
    f. V_6--aquatic organism access.
2. A Suitability Index graph for each variable, which defines the assumed relationship between habitat quality (Suitability Index) and different variable values; and
3. A mathematical formula that combines the Suitability Index for each variable into a single value for wetland habitat quality; that single value is referred to as the Habitat Suitability Index, or HSI.

The WVA models have been developed for determining the suitability of Louisiana coastal wetlands for providing resting, foraging, breeding and nursery habitat to a diverse

assemblage of fish and wildlife species. Models have been designed to function at a community level and therefore attempt to define an optimum combination of habitat conditions for all fish and wildlife species utilizing a given marsh type over a year or longer.

The output of each model (the HSI) is assumed to have a linear relationship with the suitability of a coastal wetland system in providing fish and wildlife habitat.

A comprehensive discussion of the WVA methodology is presented in Appendix B.

Designs and Cost Analysis. During the plan formulation process, each of the Task Force agencies assumed responsibility for developing designs, and estimates of costs and benefits for a number of candidate projects. The cost estimates for the projects were to be itemized as follows:

1. Construction Cost
2. Contingencies Cost (25%)
3. Engineering and Design
4. Environmental Compliance
5. Supervision and Administration (Federal and Non-Federal)
6. Supervision and Inspection (Construction Contract)
7. Real Estate
8. Operations and Maintenance
9. Monitoring

In addition, each lead agency provided a detailed itemized construction cost estimate for each project. These estimates are shown in Appendix C.

An Engineering Work Group was established by the P&E Subcommittee, with each federal agency and the State of Louisiana represented. The Engineering Work Group reviewed each estimate for accuracy and consistency.

When reviewing the construction cost estimates, the Engineering Work Group verified that each project feature had an associated cost and that the quantity and unit prices for those items were reasonable. In addition, the Engineering Work Group reviewed the design of the projects to determine whether the method of construction was appropriate and the design was feasible.

All of the projects were assigned a contingency cost of 25 % because detailed information such as soil borings, surveys, and – to a major extent – hydrologic data were not available, in addition to allowing for variations in unit prices. Engineering and design, environmental compliance, supervision and administration, and supervision and inspection costs were reviewed for reasonableness and consistency.

Economic Analysis. The Breaux Act directed the Task Force to develop a prioritized list of wetland projects "based on the cost-effectiveness of such projects in creating, restoring, protecting, or enhancing coastal wetlands, taking into account the quality of such coastal wetlands." The Task Force satisfied this requirement through the integration of a traditional time-value analysis of life-cycle project costs and other economic impacts and an evaluation of wetlands benefits using the WVA. The product of these two analyses was an Average Annual Cost per AAHU figure for each project. These values are used as the primary ranking criterion. The method permits incremental analysis of varying scales of

investment and also accommodates the varying salinity types and habitat quality characteristics of projected wetland outputs.

The major inputs to the cost effectiveness analysis are the products of the lead Task Force agencies and the Engineering and Environmental Work Groups. The various plans were refined into estimates of annual implementation costs and respective AAHUs.

Financial costs chiefly consist of the resources needed to plan, design, construct, operate, monitor, and maintain the project. These are the costs, when adjusted for inflation, which the Task Force uses in budgeting decisions. The economic costs include, in addition to the financial cost, monetary indirect impacts of the plans not accounted for in the financial costs. Examples would include impacts on dredging in nearby commercial navigation channels, effects on water supplies, and effects on nearby facilities and structures not reflected in right-of-way and acquisition costs.

The stream of costs for each project was brought to present value and annualized at the current discount rate, based on a 20-year project life. Beneficial environmental outputs were annualized at a zero discount rate and expressed as AAHUs. These data were then used to rank each plan based on cost per AAHU produced. Annual costs were also calculated on a per-acre basis. Costs were adjusted to account for projected levels of inflation and used to monitor overall budgeting and any future cost escalations in accordance with rules established by the Task Force.

Following the review by the Engineering Work Group, costs were expressed as first costs, fully funded costs, present worth costs, and average annual costs. The Cost per Habitat Unit criterion was derived by dividing the average annual cost for each wetland project by the AAHU for each wetland project. The average annual cost figures are based on price levels for the current year, the most current published discount rate, and a project life of 20 years. The fully funded cost estimates include operation and maintenance and other compensated financial costs. The fully funded cost estimates developed for each project were used to determine how many projects could be supported by the funds expected to be available in the current fiscal year.

Prioritization Criteria. The Breaux Act was initially authorized in November 1990, with three additional authorizations resulting in authority through 2019. The Consolidated Appropriations Act of 2005 (signed on December 8, 2004) provided a ten year extension of the Breaux Act Authority from 2009-2019. Prior to this ten year extension, it was expected that the funding requirements of all projects on the first 13 Priority Project Lists (PPL) would exceed the anticipated funding available in the program, with a projected shortfall of nearly $400 million. The initial purpose of the prioritization effort was to develop a process to prioritize those projects on PPLs 1-13 for which construction has not been authorized. The CWPPRA Task Force will continue to use the prioritization process as a tool in making future funding approval decisions within available funds. The process is not intended to suggest that some projects are not worthy of construction. It is intended to identify those projects that, based on their degree of support for the goals of the Louisiana Coastal Area (LCA) Feasibility Study, implementability and cost-effectiveness are the highest priority for funding using presently existing available monies. The Prioritization Criteria, discussed in more detail in the following paragraphs, are listed below:

I. Cost effectiveness
II. Address the area of need, high loss area
III. Implementability
IV. Certainty of benefits
V. Sustainability of benefits
VI. Consistent with hydrogeomorphic objective of increasing riverine input in the deltaic plain or freshwater input and saltwater penetration limiting in the Chenier plain
VII. Consistent with hydrogeomorphic objective of increased sediment input
VIII. Consistent with hydrogeomorphic objective of maintaining or establishing landscape features critical to a sustainable ecosystem structure and function

I. Cost-effectiveness

Scoring for this criterion should be based on the current estimated total fully-funded project cost and the net acres created/protected/restored at Target Year (TY) 20. The fully-funded cost estimate (100%) must be reviewed and approved by the Engineering and Economics Work Groups. Monitoring costs should be removed from the fully funded cost estimate, unless the project has a project-specific monitoring cost not covered by CRMS. The net acreage figure must be derived from the official WVA conducted for the project and any new figures must be reviewed and approved by the Environmental Work Group.

Less than $20,000/ net acre	10
Between $20,000 and $40,000/net acre	7.5
Between $40,000 and $60,000/net acre	5
Between $60,000 and $80,000/net acre	2.5
More than $80,000/net acre	1

Alternate Net Acres for Swamps: The "cost/net acre" approach used above does not work for swamp projects because the wetland loss rates estimated for Louisiana coastal wetlands using historical and recent aerial photography have not detected losses for swamps. However, future loss rates for swamps have been estimated by Coast 2050 mapping unit. This information, combined with other information regarding project details/benefits can be used to provide an "alternate net acres" estimate for swamp projects. *Attachment 1* contains a description of how alternate net acres will be derived for the purposes of assessing the cost-effectiveness of swamp projects, along with the assessment of alternate net acres for two listed swamp projects.

II. Address area of need, high loss area

The purpose of this criterion is to encourage the funding of projects that are located in basins undergoing the greatest loss. Additionally, projects should be located, to the maximum extent practicable, in localized "hot spots" of loss where they are likely to substantially reduce or reverse that loss. The appropriate basin determination on the following tables should be selected based on the location of the majority of the project benefits, and the project's Future Without Project (FWOP) loss rates should be applied. Either table or a combination of both tables (pro-rating) may be used for scoring depending upon what type of loss rates were developed for use in the WVA. Specific basins are

assigned to high, medium, and low categories based on recent basin-wide loss rates (1990 to 2001).

For projects with sub-areas affected by varying land loss rates, the score shall be a weighted average which reflects the proportion of the total emergent marsh acreage affected by each loss rate. *Example: Project located in Calcasieu/Sabine basin. The total emergent marsh acreage in the project area is 1,000 acres of which 200 acres are in Subarea 1 and experience an internal loss rate of 3%/yr, and 800 acres are in Subarea 2 with an internal loss rate of 1%/yr. The project would receive a weighted score of (0.2*7.5)+(0.8*5) = 5.5*

For project areas affected by both internal loss and shoreline loss, the score shall be a weighted average which reflects the proportion of the total emergent marsh acreage affected by each loss rate. *Example: Project located in Calcasieu/Sabine basin. The total emergent marsh acreage in the project area is 1,000 acres of which 200 acres are in Subarea 1 and experience a shoreline erosion rate of 30 feet/yr, and 800 acres are in Subarea 2 with an internal loss rate of 0.1%/yr. The project would receive a weighted score of (0.2*7.5)+(0.8*4) = 4.7*

INTERNAL LOSS RATE

Basin	**High ≥2.0%/yr**	**Medium < 2.0% to ≥ 0.5%/yr**	**Low < 0.5%/yr to ≥ 0.01%/yr**
Barataria and Terrebonne	10	7.5	5
Calcasieu/Sabine, Mermentau, and Pontchartrain	7.5	5	4
Breton, Mississippi River	5	4	3
Atchafalaya and Teche/Vermilion	4	3	1

SHORELINE EROSION RATE

Basin	**High ≥ 25 ft/yr**	**Medium ≥ 10 to < 25 ft/yr**	**Low 0 to < 10 ft/yr**
Barataria Terrebonne	10	7.5	5
Calcasieu/Sabine Mermentau Pontchartrain	7.5	5	4
Breton Mississippi River	5	4	3
Atchafalaya Teche/Vermilion	4	3	1

III. Implementability

Implementability is defined as the expectation that a project has no serious impediment(s) precluding its timely implementation. Impediments include issues such as design-related issues, landrights, infrastructure relocations, and major public concerns. The Work Groups will, by consensus or vote, agree on impediments which will warrant a point-score deduction. Other issues which sponsoring agencies believe may significantly affect implementability may also be identified.

The predominant landrights issue affecting implementability is identified as non-participating landowners (i.e., demonstrated unwillingness to execute required servitudes, rights-of-way, etc.) of tracts critical to major project features, *unless* the project is sponsored by an agency with condemnation authority which has confirmed its willingness to use such authority. Other difficult or time-consuming landrights issues (e.g., reclamation issues, tracts with many owners/undivided interests) are not defined as issues affecting implementability unless identified as such by the agency procuring landrights for the project. Infrastructure issues are generally limited to modifications/relocations for which project-specific funding is not included in estimated project costs, or if the infrastructure operator/owner has confirmed its unwillingness to have its operations/structures relocated/modified.

Significant concerns include issues such as large-scale flooding increases, significant navigation impacts, basin-wide ecological changes which would significantly affect productivity or distribution of economically- or socially-important coastal resources.

The project has no obvious issues affecting implementability 10 pts

Subtract 3 points for each identified implementability issue, negative scores are possible.

IV. Certainty of benefits

The Adaptive Management review indicated that some types of projects are more effective in producing the anticipated benefits. Factors that influence the certainty of benefits include soil substrate, operational problems, lack of understanding of causative factors of loss, success of engineering and design as well as construction, etc. Scoring for this criterion should be based on selecting project types which reflect the planned project features. If a project contains more than one type of feature, the relative contribution of each type should be weighed in the scoring, as in the example below.

*Example: A project in the Chenier Plain with two major project components: inland shoreline protection and hydrologic restoration. Approximately 80% of the anticipated benefits (i.e., net acres at TY20) are expected to result from shoreline protection features and approximately 20% of the benefits (i.e. net acres at TY 20) are anticipated to result from hydrologic restoration. Scoring for this project should be (0.8*10)+(0.2*5) = 9*

Certainty of Benefits Scores by Project Type

Inland shoreline protection - chenier plain	10
River diversions- deltaic plain	9
Terracing - chenier plain	8
Inland shoreline protection - deltaic plain	8
Marsh creation - chenier plain	7
Marsh creation - deltaic plain	7
Barrier island projects *	7
Gulf shoreline protection - chenier plain**	6
Gulf shoreline protection - deltaic plain**	5
Freshwater diversion -chenier plain	5

Freshwater diversion - deltaic plain	5
Hydrologic restoration - chenier plain	5
Vegetative plantings (low energy area)	5
Terracing - deltaic plain	3
Hydrologic restoration - deltaic plain	2
Vegetative plantings (high energy area)	2

* Refers to traditional barrier island projects which create marsh and dune habitats by dedicated dredging. If shoreline protection is a project component, then the score should be weighted by apportioning the benefits between shoreline protection (score of 5) and traditional dedicated dredging techniques (score of 7).

****** Gulf shoreline protection means typical structures currently being used around the state and nation such as breakwaters, revetments, concrete mats, etc. Does not include experimental structures being tested at various locations.

V. Sustainability of benefits

This criterion should be scored as follows: The TY20 net acres (i.e., TY20 FWP acres – TY20 FWOP acres) should be projected through TY30 based on application of FWOP conditions (i.e., internal loss). The percent decrease in net acres from TY20 to TY30 is used in the matrix below to produce an indicator of sustainability. Assume that, after TY20, project features such as water control structures would be locked open, controlled diversions and siphons would be closed, and shoreline protection structures would only provide full protection until the next projected maintenance event would be necessary (i.e., FWP conditions would continue from TY20 until the next maintenance event would be required).

For shoreline protection projects in the Deltaic Plain, effectiveness will be reduced by 50% from the year the next scheduled maintenance event is required until TY30. For shoreline protection projects in the Chenier Plain, effectiveness will be reduced by 25% from the year the next scheduled maintenance event is required until TY30. The effectiveness of shoreline protection projects utilizing concrete panels will be reduced by 10%. A 50% reduction in effectiveness will also be applied to barrier island projects using rock shoreline protection. Vegetative plantings used for shoreline protection return to FWOP erosion rates after TY20. For all shoreline protection projects, it is critical that information be provided to substantiate when the next projected maintenance event would occur.

Selected project types (e.g., uncontrolled sediment diversions) may be considered for continued application of FWP conditions provided that a valid rationale is provided.

SUSTAINABILITY SCORING CATEGORIES

% decrease in net acres between TY20 and TY30	**Score**
0 to 5% (or gain)	10
6 to 10%	8
11 to 15%	6
16 to 20%	4
21 to 30%	2
> 30%	1

VI. Consistent with hydrogeomorphic objective of increasing riverine input in the deltaic plain or freshwater input and saltwater penetration limiting in the Chenier plain

DELTAIC PLAIN PROJECTS	
The project would significantly increase direct riverine input into the benefited wetlands (structure capable of diverting $\geq$ 2,500 cfs).	10
The project would result in the direct riverine input of between 2,500 cfs and 1,000 cfs into the benefited wetlands.	7
The project would result in some minor increases of direct riverine flows into the benefited wetlands (structure or diversion <1,000 cfs).	4
The project would result in an increase of indirect riverine flows into the benefited wetlands.	2
The project will not result in increases in riverine flows.	0
CHENIER PLAIN PROJECTS	
The project will divert freshwater from an area where excess water adversely impacts wetland health to an area which would be benefited from freshwater inputs OR the project will provide a significant level of salinity control to an area where it is in need.	6
The project will result in increases in freshwater inflow to an area where it is in need OR the project may provide some minor and/or local salinity control benefits.	3
The project will not affect freshwater inflow or salinity.	0

VII. Consistent with hydrogeomorphic objective of increased sediment input

The purpose of this criterion is to encourage projects that bring in sediment from exterior sources (i.e., Atchafalaya River north of the delta, Mississippi River, Ship Shoal, or other exterior sources). Therefore, for projects to score on this criterion, they must have some outside sediment sources as project components. Large river diversions similar to Benneys Bay (i.e. >-12 ft bottom elevation) and large marsh creation projects (i.e. $\geq$ 5 million cubic yards) can be expected to input a substantial amount of sediment into areas of need and should rank higher than diversions and marsh creation projects of smaller magnitude. Quantities of sediment deposited by river diversions must be reviewed and approved by the Engineering Work Group. Mining sediment from outside systems should receive emphasis. Large scale mining of river sediments such as proposed in the Sediment Trap project represent a major input of sediment from outside the system. Major mining of Ship Shoal for use on barrier islands should also be considered to be more beneficial than dredging minor volumes of sediment for placement on barrier islands. Mining ebb tidal deltas should also receive less emphasis than major mining of Ship Shoal due to the limited quantity of high quality sand available from ebb tidal deltas. Ebb tidal deltas are sediment

sinks disconnected from input into the system and should be emphasized over flood tidal deltas or other similar interior bay borrow sites. In all cases, to receive any points, the source of the sediment should be considered to be exterior to, and have no natural sediment input into, the basin in which the project is located. Because of the recognized differences in logistics between river-source marsh creation projects/diversions and barrier island projects, a separate scoring category is used for barrier island projects. Projects which do not supply sediment from external sources cannot receive points for this criterion.

Scoring categories for diversions and marsh creation projects utilizing the Mississippi River or Atchafalaya River as a sediment source:

The project will result in the significant placement of sediment ($\geq$ 5 million cubic yards) from exterior sources.	10
The project will input some sediment (< 5 million cubic yards) from external sources.	5
The project will not increase sediment input over that presently occurring.	0

Scoring categories for barrier island projects utilizing offshore and ebb tidal delta sediment sources:

The project will result in the significant placement of sediment ($\geq$ 1 million cubic yards) from an offshore sediment source.	10
The project will input some sediment (> 2 million cubic yards) from an ebb tidal delta source.	5
The project will not increase sediment input over that presently occurring	0

VIII. Consistent with hydrogeomorphic objective of maintaining or establishing landscape features critical to a sustainable ecosystem structure and function

Certain landscape features provide critical benefits to maintaining the integrity of the coastal ecosystem. Such features include barrier islands, lake and bay rims/shorelines, cheniers, landbridges, and natural levee ridges. Projects which do not maintain or establish at least one of those features cannot receive points for this criterion.

The project serves to protect, for at least the 20 year life of the project, landscape features which are critical to maintaining the integrity of the mapping unit in which they are found or are part of an ongoing effort to restore a landscape feature deemed critical to a basin (e.g., Barataria landbridge, Grand and White Lake landbridge) or the coast in general (e.g., barrier islands)	10
The project serves to protect, for at least the 20 year life of the project, any landscape feature described above.	5

The project does not meet the above criteria. 0

Once the projects have been evaluated and scored by the Environmental and Engineering Work Groups, each score will be weighted using the following table and the following formula to create one final score. A maximum of 100 points is possible.

Weighting per criteria:

1.	Cost-Effectiveness	20%
2.	Area of Need	15%
3.	Implementability	15%
4.	Certainty of Benefits	10%
5.	Sustainability	10%
6.	HGM Riverine Input	10%
7.	HGM Sediment Input	10%
8.	HGM Structure and Function	10%
TOTAL		**100%**

(C1*2.0) + (C2*1.5) + (C3*1.5) + (C4*1.0) + (C5*1.0) + (C6*1.0) + (C7*1.0) + (C8*1.0)

Prioritization Criteria - Attachment 1

COST / "ALTERNATE NET ACRES" (SWAMP)

"COST / NET ACRE" does not work for swamp projects because the wetland loss rates estimated for Louisiana coastal wetlands using historical and recent aerial photography, have not detected losses for swamps. In spite of this, swamp ecologists and others know that the condition of many of swamps is very poor, and that the trend is for rapid decline. They also know that the ultimate result of this trend will be conversion of the swamps to open water. This conversion is expected to happen very quickly when swamp health reaches some critical low threshold. Because of this, it is not possible to estimate "net acres" as is done for marsh projects. However, future loss rates for swamps have been estimated by Coast 2050 mapping unit (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority 1998). This information, combined with other information regarding project details/benefits can be used to provide an **"alternate net acres"** estimate for swamp projects.

EXAMPLES

Maurepas Diversion Project: Wetland loss rates for the Coast 2050 Amite/Blind Rivers mapping unit for 1974-90 were estimated by USACE to be 0.83% per year for the swamps, and 0.02% per year for fresh marsh. Based on these rates, about 50% of the swamp, and 1.2% of the fresh marsh will be lost in 60 years (LCWCRTF 1998. Appendix C). For the purposes of this example, in order to be consistent with other approaches, one can estimate the acres that would be lost in the project area in 20 years without the project. The project area is 36,121 acres (Lee Wilson & Associates 2001). The Amite/Blind Rivers mapping unit consisted of 138,900 acres of swamp and 3,440 acres of fresh marsh in 1990 (LCWCRTF 1998. Appendix C). Since we don't have an estimate of the proportion of swamp and fresh marsh in our study area, we will assume the same proportions as in the Amite/Blind Rivers mapping unit, 98% swamp, 2% fresh marsh. Applying these

proportions and the loss rates for the mapping unit, to the project area, about 17,699 acres of swamp and about 9 acres of fresh marsh will be lost in 60 years in the Maurepas project area, without the project. With the project, we assume none of this will be lost. Assuming a linear rate of loss (not really the case for swamps), 5,900 acres of swamp and 3 acres of fresh marsh will be lost in 20 years without the project. With the project, we assume none of this will be lost, so the "alternate net acres" for this project are 5,903. COST / "ALTERNATE NET ACRES" is equal to the project cost estimate, $57,500,000, divided by 5,903 = $9,741. This then would fall within the "Less than $20,000 / net acre" category for a score of 10.

Small Diversion into NW Barataria Basin: This project is in the Coast 2050 Des Allemands mapping unit. It is estimated that 60% of the swamp and 30% of the marsh in this unit will be lost in 60 years (LCWCRTF 1998. Appendix D). The project area includes 4,057 acres of swamp and 20 acres of fresh marsh (USGS & LDNR 2000). Applying the estimated future loss rates from Coast 2050 to this project area, we estimate that 2,434 acres of swamp and 6 acres of fresh marsh will be lost in 60 years without the project. Assuming a linear rate of loss (not really the case for swamps), we estimate that 811 acres of swamp and 2 acres of fresh marsh will be lost in 20 years without the project. With the project, we assume none of this will be lost. In addition, this project will restore 200 acres of existing open water to swamp (U.S. EPA 2000), for a total "alternate net acres" for this project of 1,013 acres. COST / "ALTERNATE NET ACRES" is equal to the project cost estimate, $7,913,519, divided by 1,013 = $7,812. This then would fall within the "Less than $20,000 / net acre" category for a score of 10.

REFERENCES

Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority. 1998. Coast 2050: Toward a Sustainable Coastal Louisiana. Appendices C and D. Louisiana Department of Natural Resources. Baton Rouge, La.

Lee Wilson and Associates. 2001. Diversion Into the Maurepas Swamps. Prepared for U.S. EPA Region 6, Dallas, Texas.

U.S. EPA Region 6. 2000. Wetland Value Assessment Project Information Sheet- Small Freshwater Diversion to the Northwestern Barataria Basin.

USGS & LDNR. 2000. Northwestern Barataria Basin Habitat Analysis.

III. DESCRIPTION OF CANDIDATE PROJECTS

This section provides a concise narrative of each candidate project. The project details provided include the Coast 2050 strategy, project location, problem, goals, proposed solution, benefits, costs, sponsoring agency and contact persons, and a map identifying the project area and features if applicable.

Project Name: Bayou Lamoque Freshwater Diversion

Coast 2050 Strategies: Coastwide: Restore/sustain marshes. Regional: Restore natural drainage patterns, gap spoil banks and plug canals in lower bay marshes.

Project Location: Region 2, Breton Sound Basin, Plaquemines Parish, American Bay Mapping Unit, along the east bank of the Mississippi River approx. 3.4 miles north of Empire across from "Sixty-mile Point."

Problem: Wetland loss rates are low, probably due to beneficial effects of occasional opening of the Bayou Lamoque structures, influence from the mouth of the Mississippi River, and possibly, stabilizing effect of being on the flanks of the Mississippi River natural levee. Two large freshwater diversion structures are located here. One was built in 1955 and is capable of diverting 4,000 cubic feet per second (cfs). The other was built in 1978 and is capable of diverting 8,000 cfs. Structures were operated periodically by the Louisiana Department of Wildlife and Fisheries until 1994. Neither structure is officially used any longer because of repair and operation issues and the lack of an interagency management plan. The structures are being operated "unofficially" to some extent, but it is not known how much. This proposed project area is best viewed not as having a problem, but as representing an opportunity to actually create new land by diverting Mississippi River water.

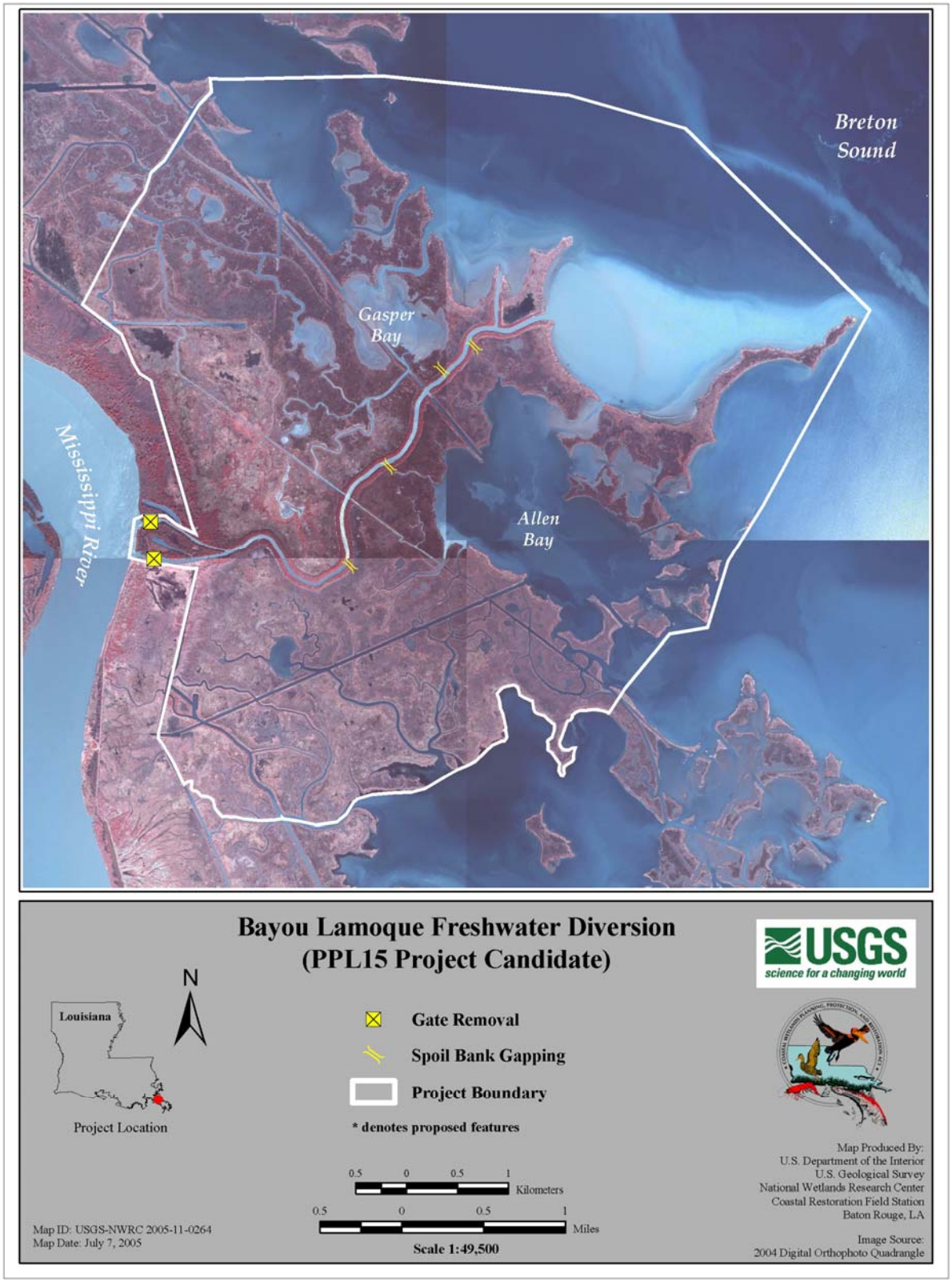
Goals: Achieve the following within 20 years, by continuously diverting up to 13,000 cfs (average 2500 cfs) of Mississippi River water into Bayou Lamoque, and by improving the distribution of diverted water in the benefit area by strategically gapping spoil banks along Bayou Lamoque: 1) Create approximately 620 acres of new marsh; 2) Increase the percent cover of aquatic vegetation in interior marsh ponds and channels; 3) Increase the area of shallow open water habitat in the project area; 4) Decrease mean salinity in the project area.

Proposed Solution: 1) Repair the Bayou Lamoque freshwater diversion structures through the removal of the gates and their mechanical operating systems to allow free-flowing diversion at the maximum capacity of both structures; 2) Construct gaps in the natural levee ridges or spoil banks on Bayou Lamoque at strategic locations to facilitate distribution of diverted water and to promote the accretion of new wetlands through the deposition of diverted river sediments.

Project Benefits: The project would benefit approximately 9,435 acres of intermediate marsh, brackish marsh, and open water habitats. Approximately 620 acres of marsh would be created/protected over the 20-year project life.

Project Costs: The total fully funded cost for the project is $5,375,741.
Fully funded first cost: $3,997,398.

Sponsoring Agency/Contact Person:
Chris Monnerjahn, USACE, (504) 862-2415,
Christopher.J.Monnerjahn@mvn02.usace.army.mil
Kenneth Teague, EPA, (214) 665-6687, Teague.Kenneth@epamail.epa.gov
Greg Miller, USACE, (504) 862-2310, Gregory.B.Miller@mvn02.usace.army.mil


Breton Sound
Gasper Bay
Allen Bay
Mississippi River
Bayou Lamoque Freshwater Diversion
(PPL15 Project Candidate)
USGS
science for a changing world
N
Louisiana
Project Location
Gate Removal
Spoil Bank Gapping
Project Boundary
* denotes proposed features
0.5 0 0.5 1
Kilometers
0.5 0 0.5 1
Miles
Scale 1:49,500
Map ID: USGS-NWRC 2005-11-0264
Map Date: July 7, 2005
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 Quadrangle

Project Name: Lake Hermitage Marsh Creation

Coast 2050 Strategy: Coastwide: Dedicated dredging to create, restore, or protect wetlands. Coastwide: Off-shore and riverine sand and sediment resources. Coastwide: Maintenance of Gulf, bay and lake shoreline integrity.

Project Location: Region 2, Barataria Basin, Plaquemines Parish, West Point a la Hache Mapping Unit, south and east of Lake Hermitage.

Problem: From 1932 to 1990, the West Point a la Hache Mapping Unit lost 38% of its marsh. Through 2050, 28% of the 1990 marsh acreage is expected to be lost. That loss is expected to occur even with operation of the West Point a la Hache Siphon and implementation of the West Point a la Hache Outfall Management Project. Significant marsh loss has occurred south and east of Lake Hermitage and along the eastern lake shoreline. Deterioration of the lake rim will expose interior marshes to the wave energy of Lake Hermitage and increase tidal exchange.

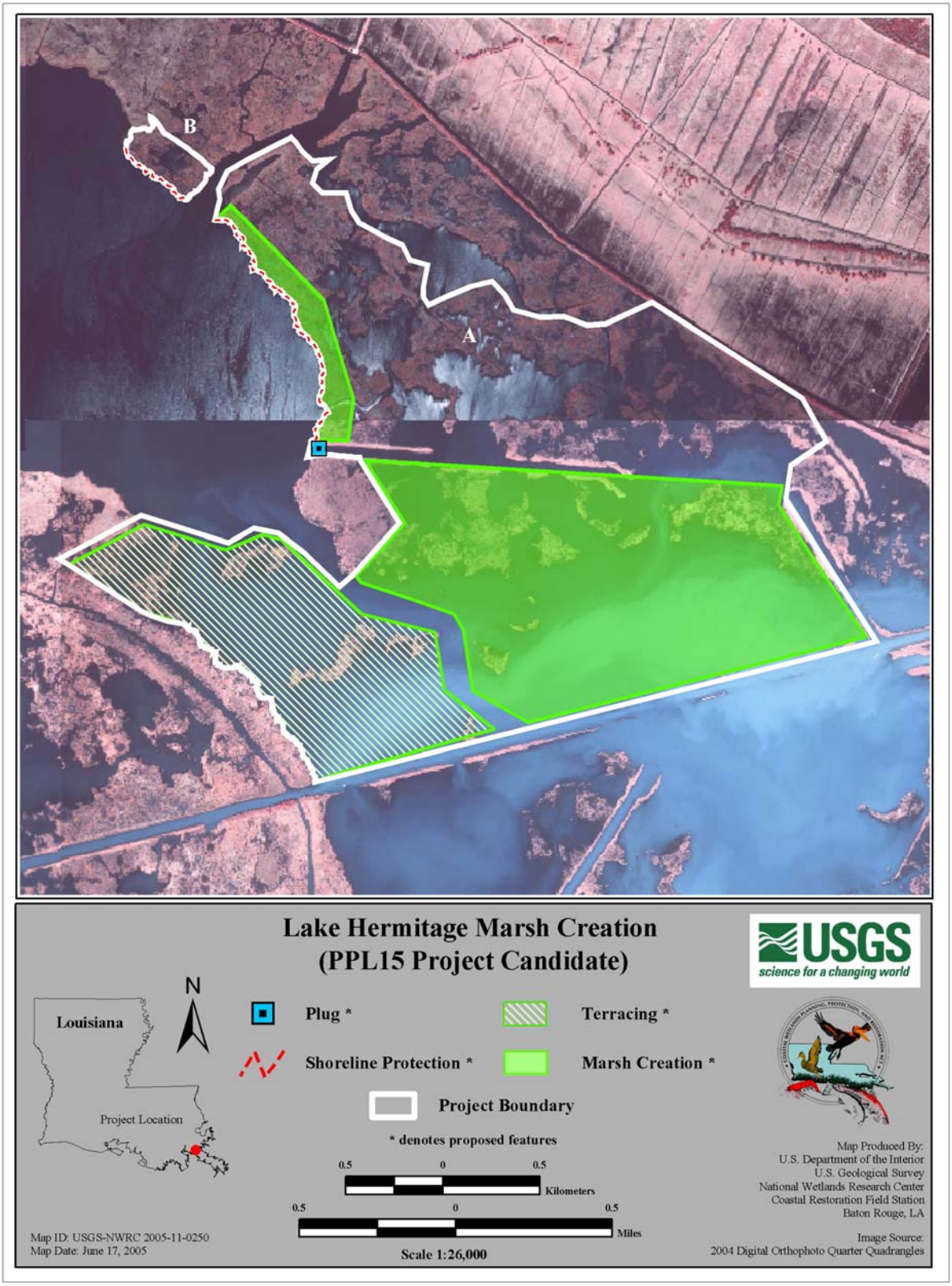
Goals: The goals of this project are to create approximately 593 acres of wetlands, reduce tidal exchange in marshes surrounding Lake Hermitage, and reduce fetch and turbidity to enhance open water habitats.

Proposed Solution: Riverine sediments will be hydraulically dredged and pumped via pipeline to create approximately 593 acres of marsh in the project area. Approximately 25,000 linear feet of terraces (16 acres) will be constructed to reduce fetch and turbidity and promote submerged aquatic vegetation. Approximately 6,000 linear feet of rock dike will be constructed along the eastern Lake Hermitage shoreline. An earthen plug will be constructed on an oil and gas canal to return tidal exchange to natural waterways within the project area.

Project Benefits: The project would benefit approximately 1,581 acres of brackish marsh and open water habitats. Approximately 438 acres of marsh would be created/protected over the 20-year project life.

Project Costs: The total fully funded project cost is $32,673,327.
Fully funded first cost: $30,367,462.

Sponsoring Agency/Contact Person:
Kevin Roy, U.S. Fish and Wildlife Service, (337) 291-3120, kevin_roy@fws.gov


B
A
Lake Hermitage Marsh Creation
(PPL15 Project Candidate)
USGS
science for a changing world
N
Louisiana
Project Location
Plug *
Terracing *
Shoreline Protection *
Marsh Creation *
Project Boundary
* denotes proposed features
0.5 0 0.5
Kilometers
0.5 0 0.5
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Map ID: USGS-NWRC 2005-11-0250
Map Date: June 17, 2005
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

Project Name: Venice Ponds Marsh Creation and Crevasses

Coast 2050 Strategy: Coastwide: Dedicated dredging to create, restore, or protect wetlands. Coastwide: Off-shore and Riverine Sand and Sediment Resources.

Project Location: Region 2, Mississippi River Delta Basin, Plaquemines Parish, south of Venice, Louisiana, adjacent to the Red, Tiger, and Grand Passes.

Problem: Between 1932 and 1974, the mapping unit lost 38,400 acres of the original 59,640 acres of marsh as a result of subsidence, tropical storm activity, canal creation, and maintenance and hydrologic modification. Between 1974 and 1990 another 13,260 acres of land had been lost (LCWCRTF & WRCA 1998b). It is estimated that without restoration efforts over 91% of the remaining land would be lost by the year 2050. The project would create marsh in open water areas that were nearly solid wetlands in 1956 by construction of crevasses and performing dedicated dredging.

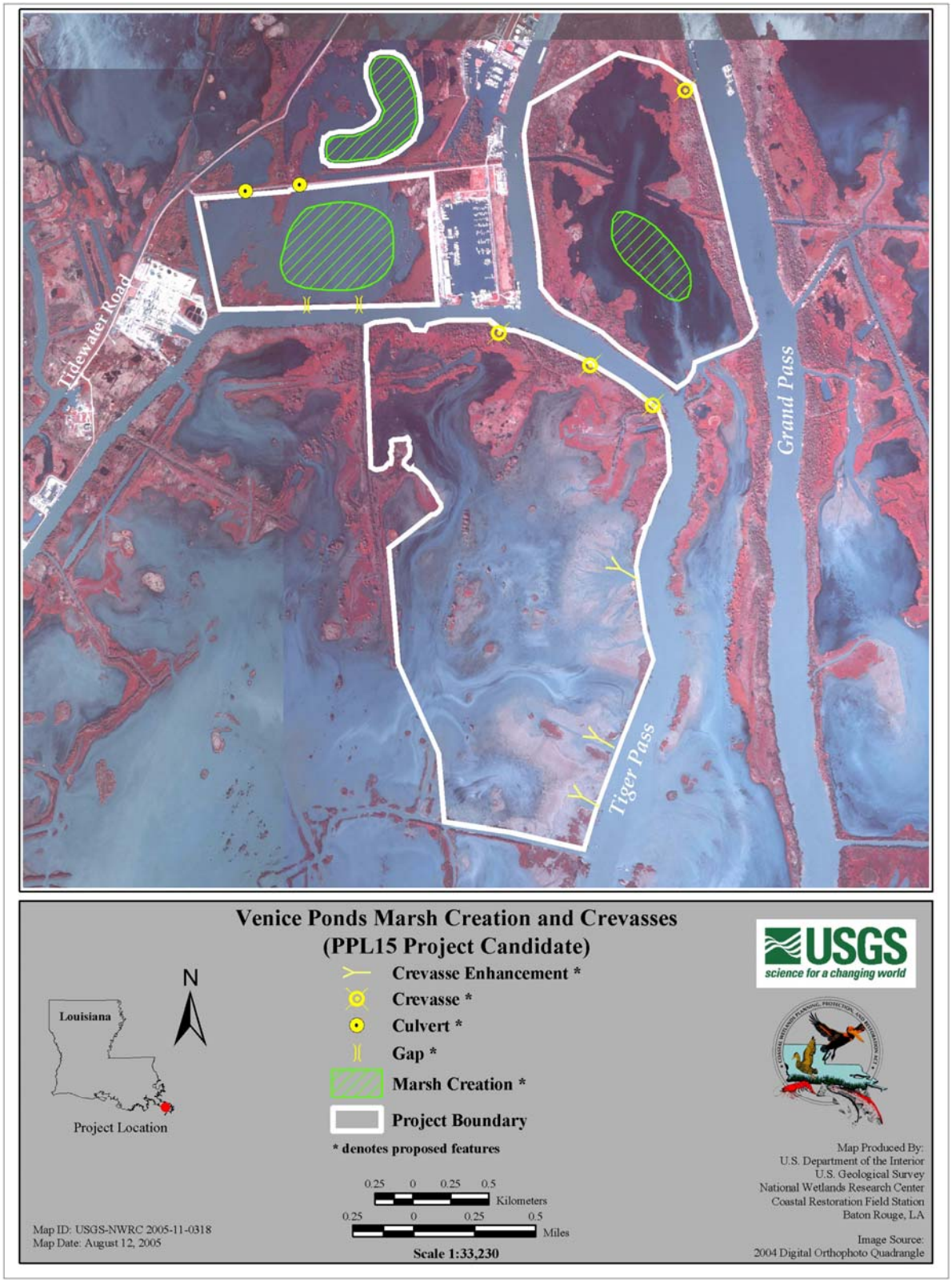
Goals: The goals of the project are to create, maintain, nourish, and replenish existing deteriorating wetlands through dedicated dredging, hydrologic restoration, crevasse construction, and crevasse enhancement.

Proposed Solution: 178 acres of marsh will be created in Sites 1, 2 and 3 (see Project Map) by hydraulically dredging material from Grand and Tiger Passes. The target elevation after one year in the Sites will be a maximum of +2.5 ft. NAVD88 and a minimum of +0.5 ft. NAVD88. The marsh creation areas will be pumped unconfined into the open water areas identified in Sites 1, 2, and 3. Existing marsh boundaries will also aid in the retention of dredged material and re-establishment of marsh habitat. Four crevasses, one into Site 3 and three into Site 4, will convey the sediment laden waters of Grand and Tiger Passes into the benefit areas. Three existing crevasses off of Tiger Pass that discharge into Site 4 will be improved through bifurcation dredging. Two sets of 2-36" diameter culverts will be installed under Venice Marina Road thereby increasing the hydrologic connection between Sites 1 and 2. Two gaps will be installed between Pass Tante Phine and Site 2 thereby increasing hydrologic connectivity.

Project Benefits: The project would benefit approximately 1,944 acres of fresh marsh and open water. Approximately 511 acres of marsh would be created/protected over the 20-year project life.

Project Costs: The total fully funded cost for the project is $8,992,955.
Fully funded first cost: $7,875,748.

Sponsoring Agency/Contact Person:
Chris Monnerjahn, USACE, (504) 862-2415,
christopher.j.monnerjahn@mvn02.usace.army.mil


Tidewater Road
Grand Pass
Tiger Pass
Venice Ponds Marsh Creation and Crevasses
(PPL15 Project Candidate)
Crevasse Enhancement *
Crevasse *
Culvert *
Gap *
Marsh Creation *
Project Boundary
* denotes proposed features
N
Louisiana
Project Location
0.25 0 0.25 0.5
Kilometers
0.25 0 0.25 0.5
Miles
Scale 1:33,230
USGS
science for a changing world
Map ID: USGS-NWRC 2005-11-0318
Map Date: August 12, 2005
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 Quadrangle

Project Name: South Terrebonne Terracing

Coast 2050 Strategies: Terracing; Maintain marshes along Timbalier Bay.

Project Location: Region 3, Terrebonne Parish; Madison Bay, Bayou Terrebonne, and Lake Boudreaux

Problem: These areas have experienced tremendous wetland loss due to a variety of forces including subsidence, saltwater intrusion, a lack of sediment supply, and oil and gas activities. The proposed project would re-establish marsh and some bay edge habitat. Loss rates range from –0.41%/yr to –4.9%/yr for the project subareas. The Boudreaux and Montegut mapping units have a 1.1 to 2.0 ft/century subsidence rate. Loss rates based on newer analyses of both aerial infrared photography and satellite imagery and evaluation of sediment cores support rapid loss predominantly caused by subsidence.

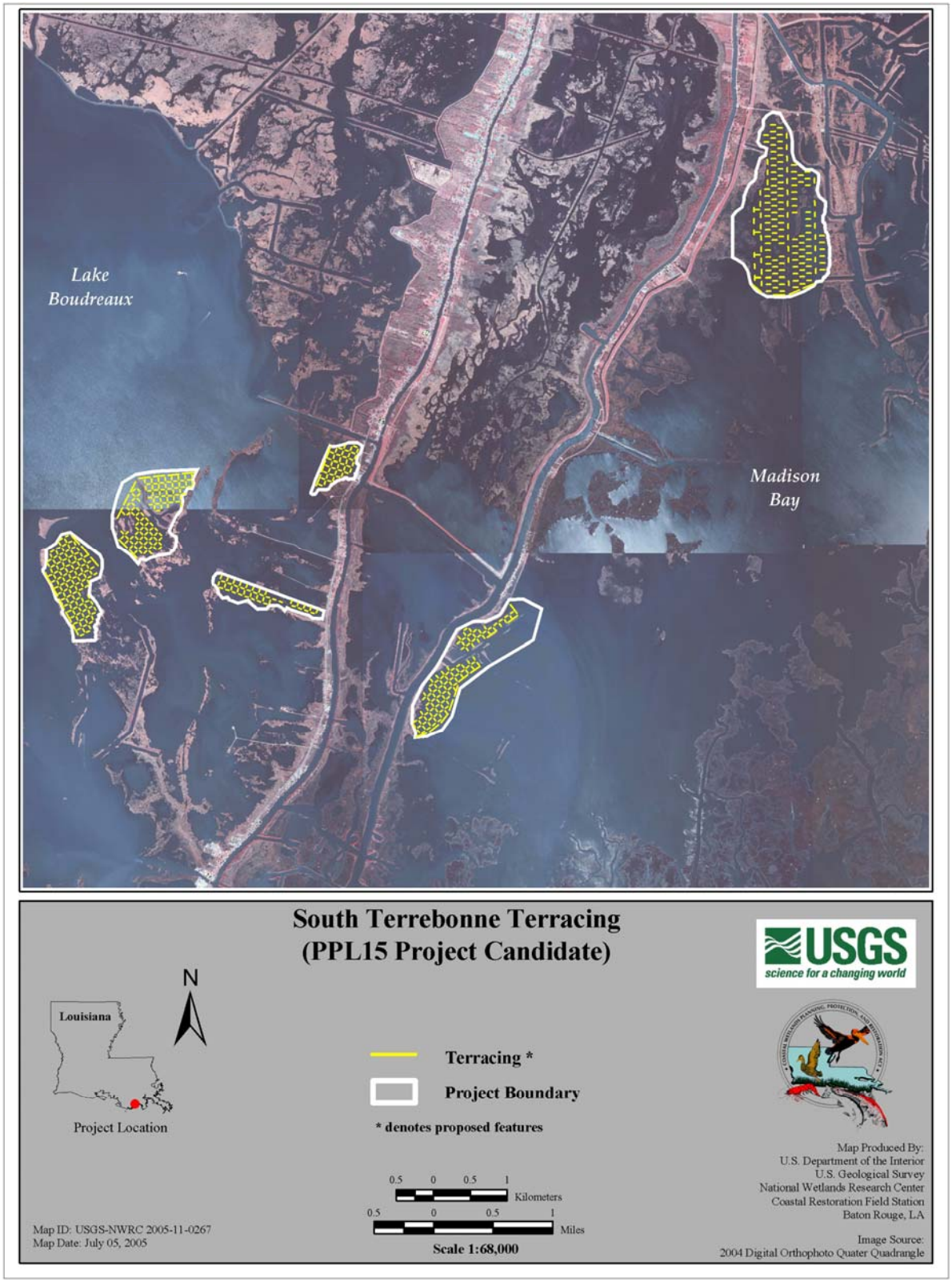
Goals: Project goals include creating emergent marsh and associated edge habitat and reduce the wave erosion of marshes along the fringes of Lake Boudreaux, Lake Quitman, and Madison Bay by constructing terraces and secondarily promote conditions more conducive to the colonization of submerged aquatic vegetation (SAV) than presently exist. Specific phase 0 goals include constructing approximately 113,340 ft of terraces, which would create a net of 60 acres of intertidal, and supratidal marsh elevations from the terraces and reducing shoreline erosion would protect 20 acres of existing marsh. Lastly, the percent cover of SAV is projected to increase in the project area.

Proposed Solution: Based on the survey information obtained, areas with an average water depth of 3.0 ft or less were targeted. Approximately 95,340 ft of small or interior terraces would be constructed and 18,000 ft of large or exterior terraces would be constructed near Madison Bay, Bayou Terrebonne, and Lake Boudreaux. The terraces would have a 1:4 side slope, an initial height of +4.0 ft NAVD88, and a settled height of +2.5 ft NAVD88. The small terraces would have 10 ft crown and the large terraces would have a 25 ft crown. The terraces would be planted with four rows of smooth cordgrass (i.e., 2 rows per side) and 2 rows of marshhay cordgrass on the crown. Sufficient funds are included in the cost estimate for replacement of 30% of the original terrace volumes at target year 14.

Project Benefits: The project would benefit approximately 1,369 acres of brackish marsh, saline marsh, and open water habitats. Approximately 80 acres of marsh would be created/protected over the 20-year project life.

Project Costs: The total fully funded cost for the project is $7,477,864.
Fully funded first cost: $5,962,681.

Sponsoring Agency/Contact Person:
Patrick Williams, NMFS, (225) 389-0508, Patrick.Williams@noaa.gov
Chris Monnerjahn, USACE, (504) 862-2415,
Christopher.J.Monnerjahn@mvn02.usace.army.mil


Lake
Boudreaux
Madison
Bay
South Terrebonne Terracing
(PPL15 Project Candidate)
USGS
science for a changing world
N
Louisiana
Project Location
Terracing *
Project Boundary
* denotes proposed features
0.5 0 0.5 1
Kilometers
0.5 0 0.5 1
Miles
Scale 1:68,000
Map ID: USGS-NWRC 2005-11-0267
Map Date: July 05, 2005
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 Quater Quadrangle

Project Name: Bird Island/Southwest Pass Marsh Creation and Shoreline Protection

Coast 2050 Strategy: Maintain shoreline integrity and stabilize critical areas of Teche-Vermilion Bay systems including the Gulf shorelines. Dedicated delivery of sediment for marsh building by any feasible means.

Project Location: Region 3, Teche/Vermilion Basin, between the Marsh Island Wildlife Refuge in Iberia Parish, and Paul J. Rainey Wildlife Sanctuary in Vermilion Parish.

Problem: The shorelines associated with Lighthouse Point and Southwest Point have an average erosion rate of 13.5 feet per year and 9.5 feet per year respectively. This is reducing the ability of those landmasses to maintain a mainland barrier against Gulf storm surges, wave energies, and tidal fluctuations. An existing colonial wading bird rookery (Bird Island) located north of Tojan Island within Southwest Pass has also sustained severe subsidence and erosion. Such impacts have reduced that island's effectiveness in providing nesting habitat for wading birds. Shoreline erosion of the Tojan Island land mass in combination with interior north/south oriented tidal creeks increase the vunerability of the island to withstand storm surges which threaten the peninsula's integrity.

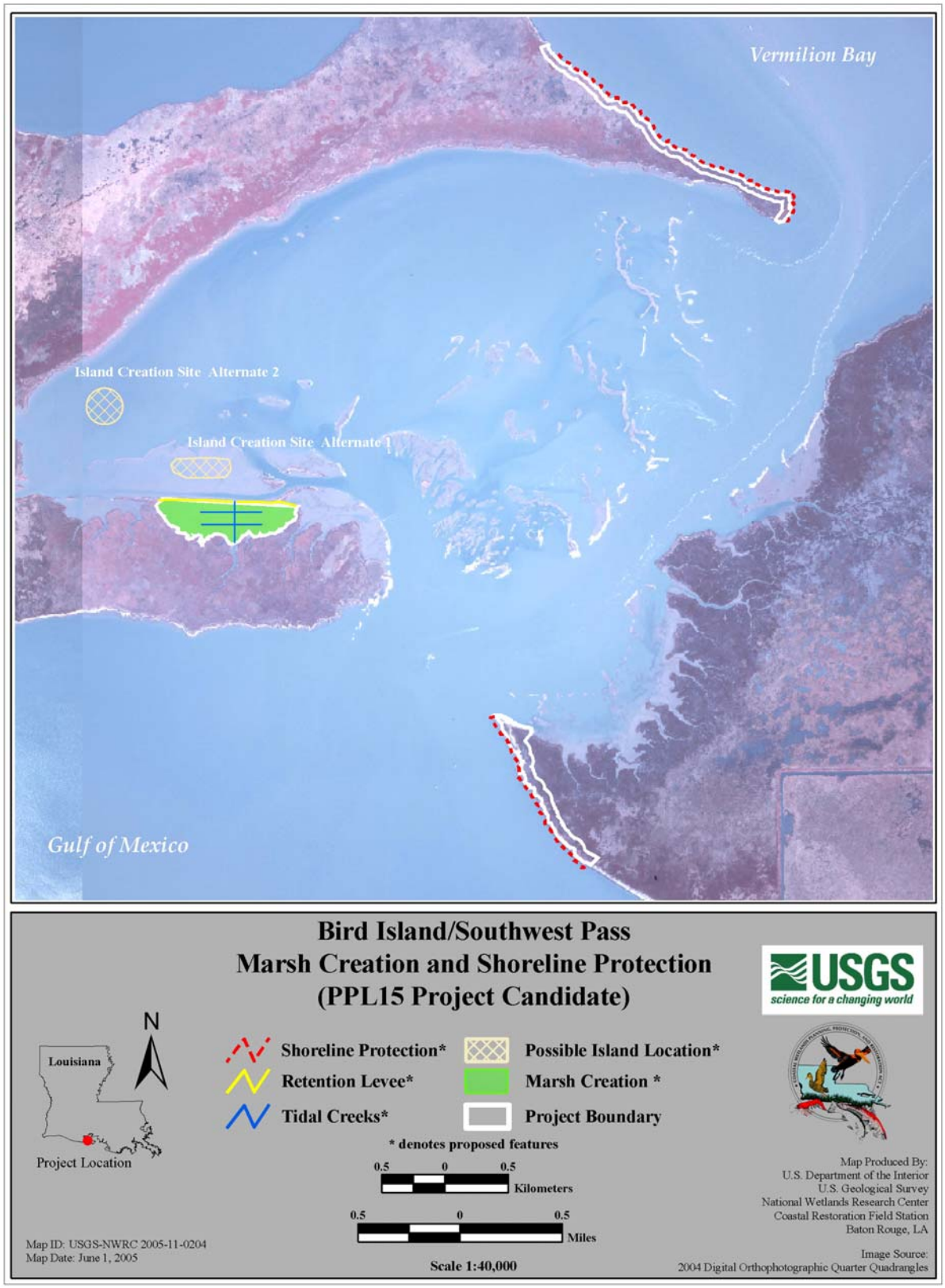
Goals: The project goals are to protect and stabilize critical points within Southwest Pass and create wildlife habitat associated with emergent marsh.

Proposed Solution: The shoreline protection would consist of armored shoreline protection with onshore revetment at Southwest Point along the south shoreline of Vermilion Bay (8,759 linear ft), and a foreshore rock dike at the north shoreline of the Gulf of Mexico at Lighthouse Point (4,619 linear ft). The foreshore rock dike would be constructed near and parallel to the existing shoreline. Marsh creation would provide additional stabilization to this area and would be accomplished by hydraulically dredging material to an elevation that would settle at marsh height on Tojan Island, and one foot above marsh height on the New Bird Island.

Project Benefits: The project would benefit approximately 149 acres of brackish marsh and open water. Approximately 133 acres of marsh would be created/protected over the 20-year project life.

Project Costs: The total fully funded cost for the project is $17,765,314.
Fully funded first cost: $12,848,741.

Sponsoring Agency/Contact Person:
Loland Broussard, NRCS, (337) 291-3060, Loland.Broussard@la.usda.gov
Troy Mallach, NRCS, (337) 291-3064, Troy.Mallach@la.usda.gov


Vermilion Bay
Island Creation Site Alternate 2
Island Creation Site Alternate 1
Gulf of Mexico
Bird Island/Southwest Pass
Marsh Creation and Shoreline Protection
(PPL15 Project Candidate)
USGS
science for a changing world
N
Louisiana
Project Location
Shoreline Protection*
Retention Levee*
Tidal Creeks*
Possible Island Location*
Marsh Creation *
Project Boundary
* denotes proposed features
0.5 0 0.5
Kilometers
0.5 0 0.5
Miles
Scale 1:40,000
Map ID: USGS-NWRC 2005-11-0204
Map Date: June 1, 2005
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 Orthophotographic Quarter Quadrangles

Project Name: South Pecan Island Freshwater Introduction

Coast 2050 Strategy: Move water from north to south across Highway 82 with associated drainage improvements south of Highway 82. Maintain Lake's Subbasin target water level.

Project Location: Region 4, Mermentau Basin, Vermilion Parish, Conveyance channel from White Lake under LA Highway 82 into CWPPRA Pecan Island Terracing Project (ME-14).

Problem: The Chenier Subbasin south of Hwy 82 has been experiencing saltwater intrusion due to lack of freshwater and sediment input from the Lakes Subbasin north of Hwy 82, while north of the highway water is retained. Although culverts were installed in some areas along the highway during construction, those have filled in over the years and recent attempts to restore hydrology have been isolated.

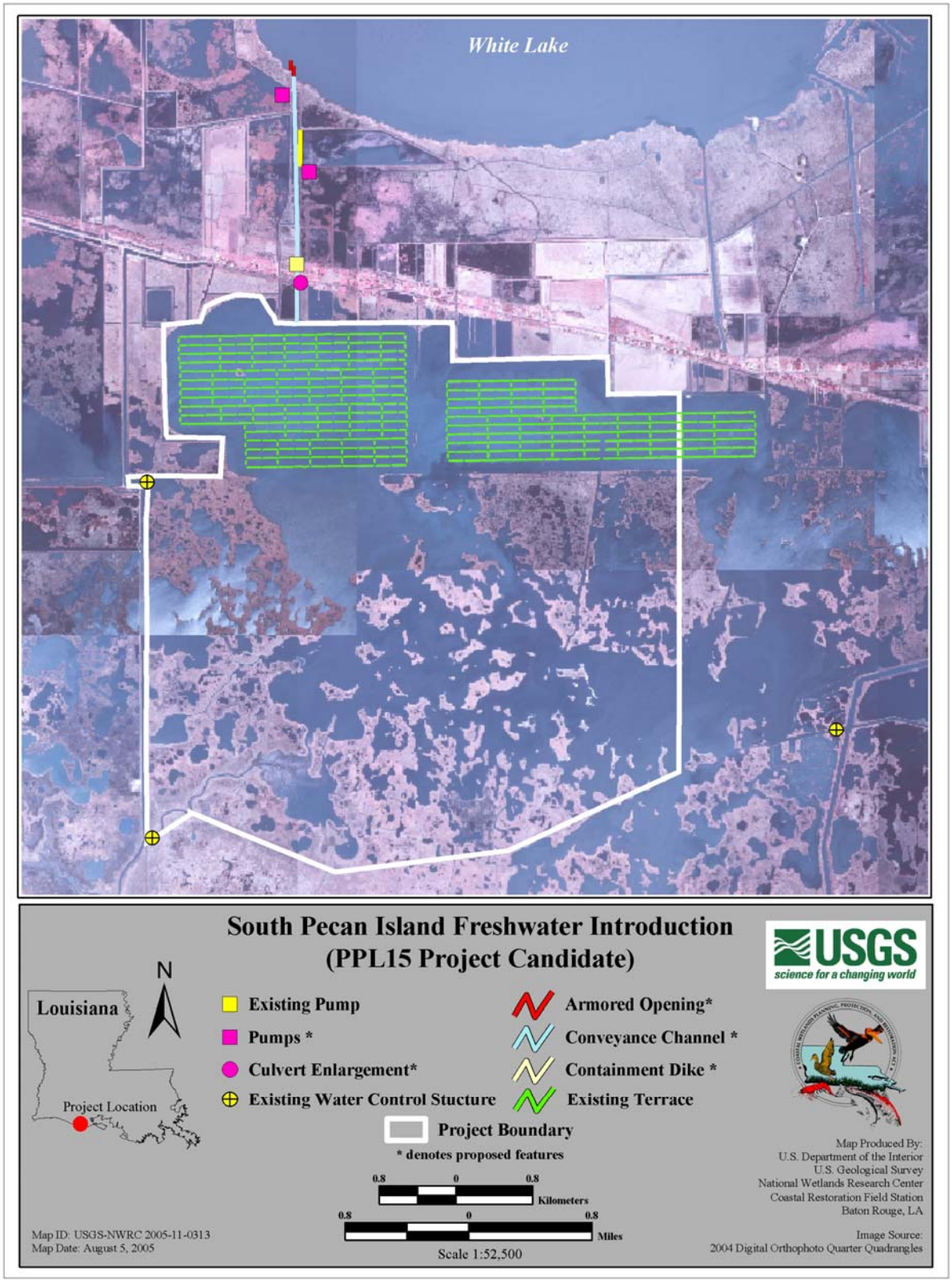
Goals: Provide freshwater flow over 200cfs to 7,000 acres for at least 3 months/year, and create 98 acres of marsh.

Proposed Solution: The project would be constructed to allow excess freshwater to drain, while preventing saltwater intrusion into the Lakes Subbasin. At Hwy 82, four 48" pipes would be installed with south facing flap gates to allow freshwater and sediment introduction from White Lake into the marsh south of Hwy 82. To prevent erosion, 200 ft on each side of the new structure would be rock armored. An existing 7,000 linear ft channel north of Hwy 82 would be excavated approximately 4 ft with a 25 ft bottom width (40 ft top width). The excavated material would be used to build a 1,300 ft section of bank needed along the northeast portion of the channel, and to refurbish existing banks. An existing plug would be removed at White Lake and rock armoring installed at the entrance. A pump would be relocated and an additional pump installed to maintain the landowners existing drainage needs that would be affected by the conveyance channel.

Project Benefits: The project would benefit approximately 7,005 acres of brackish marsh, submerged aquatic vegetation, and open water. Approximately 98 acres of marsh would be created over the 20-year project life.

Project Costs: The total fully funded cost for the project is $4,438,695.
Fully funded first cost: $3,802,097.

Sponsoring Agency/Contact Person:
John Foret, NMFS, (337) 291-2109, john.foret@noaa.gov


White Lake
South Pecan Island Freshwater Introduction
(PPL15 Project Candidate)
N
Louisiana
Project Location
Existing Pump
Pumps *
Culvert Enlargement*
Existing Water Control Stucture
Armored Opening*
Conveyance Channel *
Containment Dike *
Existing Terrace
Project Boundary
* denotes proposed features
0.8 0 0.8
Kilometers
0.8 0 0.8
Miles
Scale 1:52,500
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 2005-11-0313
Map Date: August 5, 2005

IV. DESCRIPTION OF CANDIDATE DEMONSTRATION PROJECTS

This section provides a concise narrative of each demonstration project. The project details provided include the Coast 2050 strategy, project location, problem, goals, proposed solution, benefits, costs, sponsoring agency, and contact persons.

Project Name: Enhancement of Barrier Island and Salt Marsh Vegetation Demonstration Project

Coast 2050 Strategy: Coastwide Common Ecosystem Strategy; Restore/Maintain Barrier Islands, Headlands, Shorelands. Region 2, Strategy # 17 Caminada Bay – Maintain Shoreline Integrity e.g. vegetative plantings of mangroves or marsh. Region 3, Regional Ecosystem Strategy; Protect Bay/Lake Shorelines, #10 Maintain shoreline integrity and stabilize critical areas of Teche/Vermillion Bay Systems including the Gulf Shorelines (bay/lake/gulf).

Project Location: There are multiple projects planned and ongoing that fit within the strategies listed above, most of which include use of vegetative plantings on barrier islands. One possible project site in Region 3 is the Timbalier Island Dune and Marsh Restoration project (TE-40) that recently completed planting nearly 110,000 plants, eight different species. Additional project locations are available in Regions 2 and 3.

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

Goals: Test several technologies and/or products to enhance the cost-effective establishment and growth of key barrier island and salt marsh vegetation.

Proposed Solution: Humic acid and broadcast fertilization regimes will be applied. Humic acid benefits will be demonstrated in both intertidal and supratidal plantings, whereas broadcast fertilization benefits will only be demonstrated in supratidal plantings. Each product (humic acid and fertilizer) will be commercially available and off-the-shelf. Enhancing the establishment of woody vegetation (black mangrove and groundsel bush) will be achieved via high-density dispersal techniques of propagule and seeds. All treatment test sections and reference planting areas will be visually inspected and sampled quarterly (plant and soil variables) and compared to the reference area to develop recommendations for future planting projects.

Project Benefits: The humic acid amendment and broadcast fertilization regime techniques are intended to "jump start" and facilitate the rapid establishment and expansion of vegetation. Establishing woody vegetation (black mangrove and groundsel bush) via propagules and seeds is a cost-saving alternative to planting container-grown transplants of these trees. If successful, these techniques can be applied coastwide.

Project Costs: The total fully funded cost for the project is $845,187.
Fully funded first cost: $665,265.

Sponsoring Agency/Contact Person:
Patricia A. Taylor, P.E. EPA Region 6, (214) 665-6403, taylor.patricia-a@epa.gov

Project Name: Barrier Island Sand Blowing Demonstration Project

Coast 2050 Strategy: Region 1: Revised Strategy 14, Restore and maintain barrier islands.

Project Location: It is recommended demonstrating this technology at Breton Island, although any other barrier island in Louisiana could be selected.

Problem: Barrier islands are rapidly disappearing as a result of tropical storm and hurricane activity. Storms cause surge that over-wash and often breach the islands. Many times breaches or gaps form in the island that continue to erode and eventually form large cuts in the island. Closing barrier island breaches quickly with high quality sediments is the easiest and least expensive strategy to maintain shoreline integrity. One of the challenges in barrier island restoration is finding the most cost effective and highest quality borrow source available. When a source of sand is found it is often times encumbered by pipeline networks and covered by layers of silts or organics and/or may be too far from the restoration site for cost effective mining and placement.

Goals: To demonstrate the use of the sand blowing technology for the purposes of mining sand sites in the dry and placing (unloading) the sand in the dry. To demonstrate the cost effectiveness of using confined upland disposal sites as a potential source of sand for barrier island restoration projects. To demonstrate the effectiveness of using this placement method to close newly formed gaps (breaches) and/or over-wash areas resulting from major storm events such as tropical storms and hurricanes. To demonstrate the effectiveness of using this placement method to place high quality sediments in precise areas, such as breaches or beaches, on eroding barrier islands

Proposed Solution: The demonstration project involves the mining of high quality sand (dry) from a USACE, Mobile District's upland confined disposal site using the sand blowing method. The sand will then be placed on a barge and towed to Breton Island. The sand will then be offloaded from the barges and placed on Breton Island using the sand blowing method. The sand will be used to close breaches or areas of over-wash on the island.

Project Benefits: This project allows use of material not being used beneficially, would decrease impacts to water quality at the disposal site, and avoid impacts resulting from containment dike construction.

Project Costs: The total fully funded cost for the project is $1,919,343.
Fully funded first cost: $1,847,849.

Sponsoring Agency/Contact Person:
Chris Monnerjahn, USACE, (504) 862-2415,
Christopher.J.Monnerjahn@mvn02.usace.army.mil

Project Name: Nourishment of Permanently Flooded Cypress Swamps Through Dedicated Dredging Demonstration Project

Coast 2050 Strategy: Dedicated dredging for wetland creation

Project Location: Either side of the Houma Navigation Channel and multiple locations in Barataria Basin and Penchant Basin.

Problem: 1) Many cypress/tupelo swamps in coastal Louisiana have experienced altered hydrology either through the loss of sediments (i.e., flood control levees along the Mississippi river) causing increased subsidence rates or through impoundments (i.e., roads, levees, etc.). These swamps are also affected by saltwater intrusion (due to the construction of canals). These trees slowly die when they are exposed to prolonged, deep flooding for longer than normal duration and regeneration of new trees cannot occur under these flooded conditions. 2) Several State and Federal agencies have denied the possible use of dredged material to rehabilitate permanently flooded cypress/tupelo swamps because of the perception that it would harm those trees.

Goals: To demonstrate how the deposition of differing amounts (depths) of dredged material within a cypress/tupelo swamp would affect the growth of cypress trees and how that would affect the ability of those cypress trees to naturally regenerate. Survival rates of several methods of tree planting in newly deposited dredged material would be tested.

Proposed Solution: 1) Containment dikes at each of 3 study sites will be constructed to provide 3 contiguous 3-acre blocks (27 acres) with similar pre-project hydrology. Each study site will have 1 control block consisting of 3 acres (9 acres total). To the greatest degree possible dredge disposal areas will be chosen to include a range of bald cypress size classes (and hopefully age classes) in both stressed and healthy conditions within each block. At each study site the 3 blocks will be filled with 1 ft (30 cm), 2 ft (60 cm) and 3 ft (90 cm) of sediment. Only 1 sediment treatment per block will be used due to the cost of dike construction. 2) Certain physiological and morphological measurements would be preformed pre/post sediment placement on selected mature trees within each plot to document the effects of placing sediment at differing depths on mature trees. Also, a detailed soil analysis will be carried out within each plot. 3) Areas within these units with very little tree cover would be used to test methods of tree planting. Areas with mature trees will determine the effects of the addition of soil to natural regeneration.

Project Benefits: The total acres of forested wetlands in coastal Louisiana are over 500,000. Much of these cypress swamps are not currently sustainable because of the significant increase in the number of days flooded per year. This project would test the applicability of beneficially using dredged material in subsiding cypress swamp and answer questions ask in the Coastal Wetland Forest Conservation and Use Science Working Group, which was endorsed by Governor Blanco.

Project Costs: The total fully funded cost for the project is $1,550,188.
Fully funded first cost: $1,216,095.

Sponsoring Agency/Contact Person:
Robert Dubois, USFWS, (337) 291-3127, Robert_dubois@fws.gov

Project Name: Dredge Containment System for Marsh Creation Demonstration Project

Coast 2050 Strategy: Coastwide Stategy: Dedicated dredging for wetland creation.

Project Location: Coastwide

Problem: Containment is one of the most critical and costly aspects associated with designing a beneficial use dredged material project. If the environment in which the material is to be discharged does not have features conducive to natural containment, such as spoil banks, ridges, or enclosed marsh, then containment must be constructed using rock or earthen levee created from on-site materials. The problem with such containment is that it 1) requires heavy equipment, which increases cost; 2) is dependant upon the soil condition upon which it is placed; and 3) may be limited by subsurface features (e.g. pipelines) that prevent the building of containment by conventional means.

Goals: The overall goal of the project is to demonstrate a cost-effective alternative to traditional containment methods for beneficial use dredging, which potentially expands the feasibility of dredging in areas previously considered unsuitable by soil conditions or obstruction.

Proposed Solution: Net Gains LLC recently patented a new cost-effective containment technology. The containment system, which can be constructed in 2-3 feet of open water, consists of a filter cloth or geotextile fabric that is anchored by a chain and floated on the surface by an absorbent boom. The containment can be deployed from a small watercraft, such as an outboard or airboat, with minimal labor. To fasten the containment wall in place during hydraulic dredging anchoring poles are deployed around the perimeter of the containment boom. As sediments are introduced into the containment area, dewatering occurs via a stop-log weir located on the periphery of the boom. Boards are added to the weir to contain the material as sediment accretion occurs. Upon completion of the dredging, the material is allowed to settle and dewater and subsequently may be planted with vegetation. Once vegetation becomes established, the containment cloth as well as the flotation boom may be cut away and the anchor poles removed.

Project Benefits: The project provides a potentially cost-effective alternative to traditional containment systems and may also expand options for dredge projects in areas limited by poor soil conditions or contains obstructions such as pipelines.

Project Costs: The total fully funded cost for the project is $1,073,163.
Fully funded first cost: $1,003,453.

Sponsoring Agency/Contact Person:
Ron Boustany, NRCS (337) 291-3067, ron.boustany@la.usda.gov

Project Name: Evaluation of Bioengineered Reefs Performing as Submerged Breakwaters Demonstration Project

Coast 2050 Strategy: Stabilize Gulf of Mexico shoreline from old Mermentau River to Dewitt Canal, preserve and stabilize the Gulf shoreline, maintain integrity of Gulf of Mexico shoreline where needed.

Project Location: Region 4, Mermentau Basin, Cameron/Vermilion Parish, Rockefeller Refuge west of Rollover Bayou.

Problem: Louisiana's coastline has received national attention for the past 2-3 decades due to its rapid erosion rates. Poor soil load bearing capacities is one example that could limit the use of more traditional restoration techniques along many areas of coastal Louisiana.

Goals: The goal of this project is to investigate specific designs of bioengineered reefs and their ability to mitigate erosion. Additional goals focus on environmental benefits both at the time of installation and over the development life of the oysterbreak; and investigation of stability and growth of the structures over time.

Proposed Solution: Many locations in coastal Louisiana would be appropriate. Because this is intended to be a biologically dominated engineered structure, there is a need for sufficient oyster spat and appropriate growing conditions. Maturity will be influenced by oyster growth rates. Thus, areas of high oyster growth would be preferred. The technology termed an "oysterbreak" is designed to stimulate the growth of biological structures in the shape of submerged breakwaters. The project would entail construction of a near-shore break-water along the Gulf of Mexico shoreline. The break-water would extend from the western bank of Joseph's Harbor canal westward for 600 feet. It would be designed to attenuate shoreline retreat along this stretch of Gulf shoreline, as well as promote shallowing, settling out, and natural vegetative colonization of over-wash material landward of the proposed structure. The resultant design would be placed offshore along the –3' contour. The crest height of the proposed structure would be 6 feet above the Gulf floor, with a 10 foot crown and 1:3 slope on both sides.

Project Benefits: This project is anticipated to benefit 2.4 acres of saline marsh (600 ln ft X 35 ft/yr X 5 yrs).

Project Costs: The total fully funded cost for the project is $1,421,702.
Fully funded first cost: $453,989.

Sponsoring Agency/Contact Person:
John Foret, NMFS, (337) 291-2107; john.foret@noaa.gov

Project Name: Thin Layer Dredge Disposal Demonstration Project

Coast 2050 Strategy: Beneficial Use of Dredged Material or Dedicated Dredging to Create, Restore or Protect Wetlands

Project Location: This project could be built in any deteriorating marsh in coastal Louisiana, Regions 1 - 4. Project areas will be sited in saline and/or possibly brackish marsh.

Problem: Wetland loss often begins with deterioration and fragmentation of wetland areas, however, most restoration projects to date have not focused on restoring deteriorating areas but rather re-creating wetlands that have converted to open water. Thin layer sediment nourishment has the potential to restore deteriorating marshes, reduce project costs, minimize adverse impacts and be more constructible. However, thin layer sediment nourishment use has been limited, in part due to lack of standard information regarding applicability, design, and implementation.

Goals: The project goal is evaluate the effectiveness of thin layer marsh nourishment designs and construction methods to develop design and implementation guidance and specifications. Technical guidance would assist in designing and implementing projects that optimize the benefits of this little used restoration technique while minimizing adverse impacts to existing marsh.

Proposed Solution: Construction of four to six, small (i.e., 5 to 10 acres each) controlled, unconfined, thin layer sediment nourishment projects. The nourishment projects will be constructed using three (high, medium and low) sediment-to-water slurry concentrations. Post-construction performance assessments (using elevation surveys, vegetative monitoring and aerial photography) will be conducted to determine the relationship between slurry concentration, geographical extent of sediment influence, and level of benefits. Technical guidance regarding project design, construction techniques, and construction implementation will be developed.

Project Benefits: The nourishment of approximately 20 - 60 acres of deteriorating marsh through the construction of four to six small (5 to 10 acres each) controlled, unconfined, thin layer sediment nourishment projects. Additionally, more widespread and successful application of this little used technique will be encouraged by the development of design guidance and construction management practices that optimize wetland benefits.

Project Costs: The total fully funded cost for the project is $1,232,780.
Fully funded first cost: $877,669

Sponsoring Agency/Contact Person:
Rachel Sweeney, NMFS, (225) 389-0508, rachel.sweeney@noaa.gov
Greg Grandy, LDNR, (225) 342-6412, gregoryg@dnr.state.la.us
Patrick Williams, NMFS (225) 389-0508, patrick.williams@noaa.gov

Project Name: Floating Wave Attenuator System Demonstration Project

Coast 2050 Strategy: Coastwide Common Strategy; Maintenance of bay and lake shoreline integrity, stabilization of major navigation channels. Region 1 Regional Ecosystem Strategy; maintain shoreline integrity of Lake Borgne and Biloxi Marsh, maintain Eastern Orleans Landbridge by marsh creation and shoreline protection, Stabilize the entire north bank of the MRGO. Region 2 Regional Ecosystem Strategy; construct wave absorber at the heads of bays, build entire Breaux Act landbridge shore protection project, preserve bay and lake shoreline integrity on the landbridge. Region 3 Regional Ecosystem Strategy; maintain shoreline integrity and stabilize critical areas of Teche-Vermilion Bay systems including the gulf shorelines, maintain shoreline integrity of marshes adjacent to Caillou, Terrebonne, and Timbalier Bays. Region 4 Regional Ecosystem Strategy; stabilize Grand Lake and White Lake shorelines, stabilize Gulf of Mexico shoreline in the vicinity of Rockefeller Refuge, stabilize Gulf of Mexico shoreline from Calcasieu Pass to Johnson's Bayou.

Project Location: There are multiple projects planned and ongoing that fit within the strategies listed above. One possible application is in Region 1, Pontchartrain Basin, St. Bernard Parish, EPA's Lake Borgne Shoreline Protection Project (PO-30) near Bayou Dupre.

Problem: Shorelines throughout coastal Louisiana are eroding and exposing the interior marsh to breaches that form channels to convey saltwater into the interior marshes. The most common means of addressing this situation is installation of expensive rock dikes on or near the eroding shorelines. The poor soils common throughout the area result in sinking of the rock dikes, requiring maintenance and rebuilding in many cases. In addition, the installation of rock dikes often requires dredging of flotation channels, which can be problematic when there are submerged cultural or ecological resources in the area.

Goals: Test several floating wave attenuation systems with different mooring systems to determine the efficacy of this type of product in protecting shoreline.

Proposed Solution: Install three or four 500-foot long sections of floating wave attenuator systems as part of a project. Each product should be installed according to the specific manufacturer's installation recommendations, visually inspected once a year for structural integrity, sediment accretion, and wave energy reduction.

Project Benefits: If successful, the systems will protect the shorelines at a cost comparable to rock dikes, with less site disturbance and perhaps less operation and maintenance costs. In some cases, the system may be manufactured locally within Louisiana rather than importing stone from other states, resulting in a more environmentally preferred and sustainable alternative.

Project Costs: The total fully funded cost for the project is $1,792,804.
Fully funded first cost: $1,228,467.

Sponsoring Agency/Contact Person:
Patricia A. Taylor, P.E. EPA Region 6, (214) 665-6403, taylor.patricia-a@epa.gov

Project Name: HESCO Concertainer Baskets for Shoreline Protection Demonstration Project

Coast 2050 Strategy: Coastwide strategy: Maintenance of bay and lake shoreline integrity
Regional strategy: Maintain shoreline integrity of Lake Pontchartrain.

Project Location: The proposed demonstration could take place at almost any location in the coastal zone where eroding shorelines are a problem except along the Gulf shoreline. The team working on the application of the system feels that high potential exists for demonstrating the technique in areas with poor soil conditions with low to moderate wave energies. Several locations in the Pontchartrain Basin along the East Orleans Landbridge have been evaluated. These sites include locations on Lake Pontchartrain, The Rigolets and in Lake St. Catherine.

Problem: The proposed demonstration would be used to address shoreline erosion in areas with generally poor soil conditions and that experience shoreline erosion as a result of moderate and low wave conditions. Land loss and shoreline change maps in the Pontchartrain basin have documented erosion rates ranging from 10 feet per year to 60 feet per year in various locations. Specific data along the shorelines of the East Orleans Landbridge show shoreline change rates of 54 feet per year at Chef Pass, 10 feet per year at Grand Coin Pocket, and 15 feet per year at Saw Mill Pass.

Goals: This project is intended to demonstrate that HESCO baskets can be employed to reduce or eliminate shoreline erosion in areas with low to moderate wave energies and poor soil conditions.

Proposed Solution: This demonstration project involves deploying HESCO concertainer baskets to evaluate their effectiveness in preventing shoreline erosion. HESCO baskets would be deployed in several configurations (single line, double line, and three units stacked) in locations with varying wave conditions. During deployment the baskets would be placed in approximately two feet of water and filled with sediment borrowed from adjacent onsite sources. The baskets are available in several sizes including the proposed 3 ft x 3 ft x 3ft group. The units can be bound in multiple lengths and are flexible to allow conformity to shorelines and depth contours.

Project Benefits: The system potentially offers a cost competitive advantage over traditional rock breakwater techniques without sacrificing long-term performance in combating erosion problems.

Project Costs: The total fully funded cost for the project is $1,462,854.
Fully funded first cost: $975,390.

Sponsoring Agency/Contact Person:
Gregory Miller, USACE, (504) 862-2310, Gregory.B.Miller@mvn02.usace.army.mil.

Project Name: Lake Pontchartrain Shoreline Protection and Habitat Enhancement Demonstration Project

Coast 2050 Strategy: #10 - Maintain shoreline integrity of Lake Pontchartrain to protect regional ecosystem values. Mapping unit strategy - Restore submerged aquatic vegetation beds and stabilize lake rim marshes and beaches.

Project Location: Region 1, Pontchartrain Basin, Jefferson Parish, several areas along the southern shoreline of Lake Pontchartrain, Louisiana.

Problem: Shoreline marshes in Lake Pontchartrain have been highly impacted through human development and natural erosion. While thousands of acres of wetland existed along the original southern shoreline of Lake Pontchartain, the Lake Pontchartrain Environmental Atlas indicates that less than six acres of shoreline marsh remains along the lake between the Parish Line Canal in Jefferson and Paris Road in Orleans.

Goals: The goal is to test new materials (reef balls, HESCO concetainers, geo-textile sediment bags) and configurations (multiple tiering on a shoreline with different materials) for shoreline protection and compare the results and prices for each against traditionally used materials (limestone rocks, rip-rap) in a large lake with high energy. Some of these materials and configurations have never been tested for these purposes in Louisiana. The reason for placing these materials near shore is to encourage sediment accretion, wetland creation and subsequent protection of these created wetlands along the southern shore of Lake Pontchartrain in Jefferson Parish. If successful, these techniques can be applied on a large scale in other similar areas in Louisiana.

Proposed Solution: Construct innovative shoreline protection measures to reduce wave energy and promote sediment accretion and vegetation colonization. Segments of the southern shoreline of Lake Pontchartrain contain patches of smooth cordgrass and submerged aquatic vegetation that have colonized small coves and other protected areas. The natural colonization of marsh vegetation in these areas indicates the ability of plants to grow on the southern lake shoreline given the proper low energy conditions. The objective of the project is to mimic these natural success stories through the construction of engineered features that would reduce wave energies. Potential construction methods include reef balls in shallow water, HESCO Concertainer baskets, sediment-filled geo-textile bags ("boudin-bags"), etc. Besides using unique materials, the configuration would be staggered shoreward to provide a more gradual breaking of the wave energy.

Project Benefits: These shoreline protection systems potentially offer a cost competitive advantage over traditional rock breakwater techniques without sacrificing long-term performance in combating erosion problems.

Project Costs: The total fully funded cost for the project is $2,596,584.
Fully funded first cost: $2,109,120.

Sponsoring Agency/Contact Person:
Gregory Miller, USACE, (504) 862-2310, Gregory.B.Miller@mvn02.usace.army.mil

Project Name: Backfilling Canals to Maximize Hydrologic Restoration Demonstration Project

Coast 2050 Strategy: Coastwide: Restore/sustain marshes. Regional: Restore natural drainage patterns, gap spoil banks and plug canals in lower bay marshes.

Project Location: This is a broadly applicable technique. Examples include: 1) Region 3, Teche/Vermilion Basin, Vermilion Parish, East of Onion Lake, between GIWW and Green Island Bayou; 2) Region 3, Atchafalaya Basin, St. Mary Parish, Marone Point area, west of Hwy 317.

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

Goals: 1) To reverse damage done to coastal marshes by canal dredging and spoil bank placement. 2) To create marsh on former spoil bank areas and establish marsh or SAV in canals. 3) To restore natural hydrologic conditions and allow for more natural flooding and draining of marsh which would allow for marsh creation in surrounding open water areas. 4) To strategically target a cluster of canals at a given location to learn about the biological, geological and sociological opportunities for backfilling.

Proposed Solution: This project will backfill canals in strategic landscape positions to maximize the restoration of natural hydrologic conditions. Backfilling has been successful in the past at restoring single canals in a variety of locations, but it has never been attempted as a strategy to restore open water areas surrounding the canal. Removing the spoil banks in a strategic manner will allow the natural marsh drainage networks to reemerge, and allow for higher marsh sedimentation through a more natural flooding cycle. This would be done in phases: identification of clusters of canals that could be backfilled, working with landowners/agencies to rank identified sites, engineering cost, implementation, and monitoring. Monitoring of project success would include aerial photography analysis of land/water ratios every 5 years for 10-15 years.

Project Benefits: Emergent wetland, shallow water habitat, and submerged aquatic vegetation would be created. Degraded wetlands behind spoil banks would be restored over time.

Project Costs: The total fully funded cost for the project is $1,718,766.
Fully funded first cost: $1,525,464.

Sponsoring Agency and Contact Persons:
Kenneth Teague, EPA, (214) 665-6687, Teague.Kenneth@epamail.epa.gov

Project Name: Delta Management Demonstration Project

Coast 2050 Strategy: Region 3, Strategy # 2: Maximize land building in Atchafalaya Bay,
Region 2, Strategy #6: Enrich existing diversions with sediment,
Region 2, Strategy #7: Continue building and maintaining delta splays,
Region 2, Strategy #8: Construct most effective small diversions,
Region 2, Strategy #10: Construct a delta-building diversion at Myrtle Grove,
Region 2, Strategy #11: Construct delta-building diversion in Bastion Bay,
Region 2, Strategy #12: Construct delta-building diversion into Benny's Bay,
Region 2, Strategy #13: Construct delta-building diversion into American Bay,
Region 2, Strategy #14: Construct delta-building diversion at Quarantine Bay

Project Location: Region 3, Atchafalaya Basin, St. Mary Parish, Atchafalaya and/or Wax Lake Deltas.

Problem: Growth of the Atchafalaya River and Wax Lake Outlet Deltas provides an opportunity to offset wetland loss occurring in other areas. Excluding sediment supply issues, growth of those deltas is diminished by the partial erosion during fall/winter high wave energy events of recently deposited subaqueous sediments. This in turn reduces formation of marsh along developing distributary and crevasse channels. Marsh formation and retention of valuable suspended sediments within the delta could be accelerated by installing sediment trapping features at the distal ends of distributary channels to facilitate sediment capture and associated vegetative colonization.

Goals: This demonstration project would seek to develop cost-efficient means for accelerating natural levee formation and possibly increasing sediment deposition within interdistributary areas. Accelerated natural levee formation would in turn provide opportunities for constructing crevasses to nourish interdistributary areas. Information gained through this project could be applied to future sediment diversion projects as well as in existing deltas.

Proposed Solution: This demonstration project would seek to develop cost-efficient means for accelerating natural levee formation and possibly increasing sediment deposition within interdistributary areas. Accelerated natural levee formation would in turn provide opportunities for constructing crevasses to nourish interdistributary areas. Information gained through this project could be applied to future sediment diversion projects as well as in existing deltas.

Project Benefits: In addition to increasing emergent wetlands, shallow water habitat, and submerged aquatic vegetation, the project, if successful, would provide the knowledge needed to increase the effectiveness of deltaic land-building and sediment diversion projects. If the most effective techniques are of low cost as hoped, then use of those techniques might also be applied as mitigation for development projects.

Project Costs: The total fully funded cost for the project is $1,131,096.
Fully funded first cost: $965,949.

Sponsoring Agency/Contact Person:
Ronny Paille, USFWS, (337) 291-3117, Ronald_Paille@fws.gov

Project Name: Flowable Fill Demonstration Project

Coast 2050 Strategy: Maintenance of Bay and Lake Shoreline Integrity; Stabilization of Major Navigation Channels; Protect Wave/Wake Absorbers

Project Location: This project has one distinct location within Coast 2050, Region 3. The potential site would be the rock structure associated with the TV-11b Freshwater Bayou Bank Stabilization Project located in Vermilion Parish, Louisiana.

Problem: Several post constructed projects suffer from high maintenance due to rock slippage caused by storms, incessant wave energy or high tides coupled with high wake energy which shear off the top-most part of rock structures. A rock structure which has been bonded together will also be resistant to vandalism. These scenarios sometimes call for the affected works to be repaired or have intensive maintenance soon after initial construction.

Goals: The goal of this demonstration is to test a technique whereby rock structures have increased integral strength without adding to overall structure weight.

Proposed Solution: For rock structures, slippage can be controlled by injecting/applying a flowable, fill material consisting of Portland cement, sand, water, and a plasticizer. This material will bond rocks together and reduce the incidence of re-working or adding new material to the structure due to rock loss, an example of which is occurring at the structure along Freshwater Bayou. This material has an approximate weight of 2,615 lbs/cu yd and an approximate strength of 1,500 pounds per square inch (psi) and will set-up and cure in underwater applications. Flowable Fill could eliminate or reduce maintenance on existing and future projects.

Project Benefits: Eliminate or minimize post construction (re-working) or yearly maintenance of structures built for the control of shoreline erosion. The application of flowable fill over existing or new rock type structures will assist in bonding the structure together resulting in less rock slippage and eventual loss which diminishes the effectiveness of the structures designed use and results in increased costs during the operation/maintenance phase of the project.

Project Costs: The total fully funded cost for the project is $926,986.
Fully funded first cost: $822,960.

Sponsoring Agency/Contact Person:
Loland Broussard, NRCS, (337) 291-3060, loland.broussard@la.usda.gov

Project Name: Backshore and Dune Stabilization Demonstration Project

Coast 2050 Strategy: Stabilize Gulf of Mexico Shoreline (Regional Strategies 16 and 17)

Project Location: Region 4, Calcasieu-Sabine and Mermentau Basins, Cameron and Vermilion Parishes. A preferred site would be the Long Beach area in Cameron Parish, west of the existing Holly Beach to Constance Beach segmented breakwaters.

Problem: The problem is Gulf of Mexico shoreline erosion in the Chenier Plain and the need for a cost-effective shoreline stabilization technique that does not interfere with long shore sediment processes. Past solutions included the construction of hard shoreline stabilization structures (i.e., segmented breakwaters, jetties and groins) parallel or perpendicular to the Gulf shoreline that increased shoreline erosion down drift from those structures.

Goals: The goal of this project is to stop Gulf shoreline erosion without disturbing the natural long shore hydrologic and sediment processes.

Proposed Solution: Install 3,000 linear feet of wire sediment confinement (concertainers) structures (dimensions 2x2x10 feet, 3x3x15 feet, or 4x3x15 feet) in the backshore or dune/ridge beach area, fill with in situ materials, and then cover them with sand to create a natural dune/berm profile. The design consists of three units; two at the base and a third unit placed on top of the base layer. The concertainers would strengthen and stabilize the backshore preventing it from being eroded during storm events. The concertainers consist of rectangular galvanized coated wire baskets (life 38 years), lined with a polypropylene or other material geotextile fabric. Concertainers would be placed at the base of existing dune/berms, filed with in situ beach/shore materials (sand, broken shell, clays), and covered with imported sand. Concertainers come in a folded condition and are easily transported to the construction site reducing construction costs. The filled concertainers would add additional strength and integrity to the existing dune/berm shore.

Project Benefits: The small 3,000-foot demonstration project would protect 14 to 28 acres of beach shoreline in a 20-year life at existing shoreline erosion rates of 10 to 20 feet per year. The concertainer technique could prove to be a cost-effective Gulf shoreline stabilization method that does not interfere with natural beach and near shore geomorphic processes.

Project Costs: The total fully funded cost for the project is $883,536.
Fully funded first cost: $844,244.

Sponsoring Agency/Contact Person:
Darryl Clark, USFWS, (337) 291-3111, Darryl_Clark@fws.gov

V. PROJECT SELECTION

On February 8, 2006, the CWPPRA Task Force made its selection for the 15th PPL. The CWPPRA Task Force selection for the 15th PPL is shown in Table 6.

Table 6: The 15th Priority Project List

1	2	3	4	5	6	7	8	9	10	11	12
Project Number	Project Name	Physical Type	Sponsoring Agency	Fully Funded Total Cost	Fully Funded Phase I Total Cost	Cumulative Fully Funded Phase I Total Cost	Fully Funded Phase II Total Cost	Cumulative Fully Funded Phase II Total Cost	Phase II/Increment 1	Cumulative Phase II /Increment 1	Average Annual Habitat Units (AAHUs)
BS-13	Bayou Lamoque Freshwater Diversion	FD	COE/ EPA	$5,375,741	$1,205,354	$1,205,354	$4,170,387	$4,170,387	$2,905,873	$2,905,873	560
BA-42	Lake Hermitage Marsh Creation	MC	FWS	$32,673,327	$1,197,590	$2,402,944	$31,475,737	$35,646,124	$30,315,147	$33,221,020	191
MR-15	Venice Ponds Marsh Creation and Crevasses	MC /FD	COE/ EPA	$8,992,955	$1,074,522	$3,477,466	$7,918,433	$43,564,557	$6,820,875	$40,041,895	153
ME-23	South Pecan Island Freshwater Introduction	HR	NMFS	$4,438,695	$1,102,043	$4,579,509	$3,336,652	$46,901,209	$2,726,720	$42,768,615	100
	TOTALS			$51,480,718		$4,579,509		$46,901,209		$42,768,615	1004

Project Physical Type:
FD=Freshwater Diversion
HR=Hydrologic Restoration
MC=Marsh Creation
OM=Outfall Management
SP=Shoreline Protection
TR=Terracing

Sponsoring Agencies:
COE=US Army Corps of Engineers
EPA=Environmental Protection Agency
NMFS=National Marine Fisheries Service
NRCS=Natural Resources Conservation Service
FWS=US Fish and Wildlife Service

VI. DESCRIPTION OF PROJECTS SELECTED FOR PHASE I FUNDING

This section provides a concise narrative of each selected project that was funded for Phase I. The project details provided include the Coast 2050 strategy, project location, problem, goals, solution, benefits, costs, sponsoring agency and contact persons, and a map identifying the project area and features if applicable.

Project Name: Bayou Lamoque Freshwater Diversion

Coast 2050 Strategies: Coastwide: Restore/sustain marshes; Regional: Restore natural drainage patterns, gap spoil banks and plug canals in lower bay marshes

Project Location: Region 2, Breton Sound Basin, Plaquemines Parish, American Bay Mapping Unit, along the east bank of the Mississippi River approx. 3.4 miles north of Empire across from "Sixty-mile Point."

Problem: Wetland loss rates are low, probably due to beneficial effects of occasional opening of the Bayou Lamoque structures, influence from the mouth of the Mississippi River, and possibly, stabilizing effect of being on the flanks of the Mississippi River natural levee. Two large freshwater diversion structures are located here. One was built in 1955 and is capable of diverting 4,000 cubic feet per second (cfs). The other was built in 1978 and is capable of diverting 8,000 cfs. Structures were operated periodically by the Louisiana Department of Wildlife and Fisheries until 1994. Neither structure is officially used any longer because of repair and operation issues and the lack of an interagency management plan. The structures are being operated "unofficially" to some extent, but it is not known how much. This proposed project area is best viewed not as having a problem, but as representing an opportunity to actually create new land by diverting Mississippi River water.

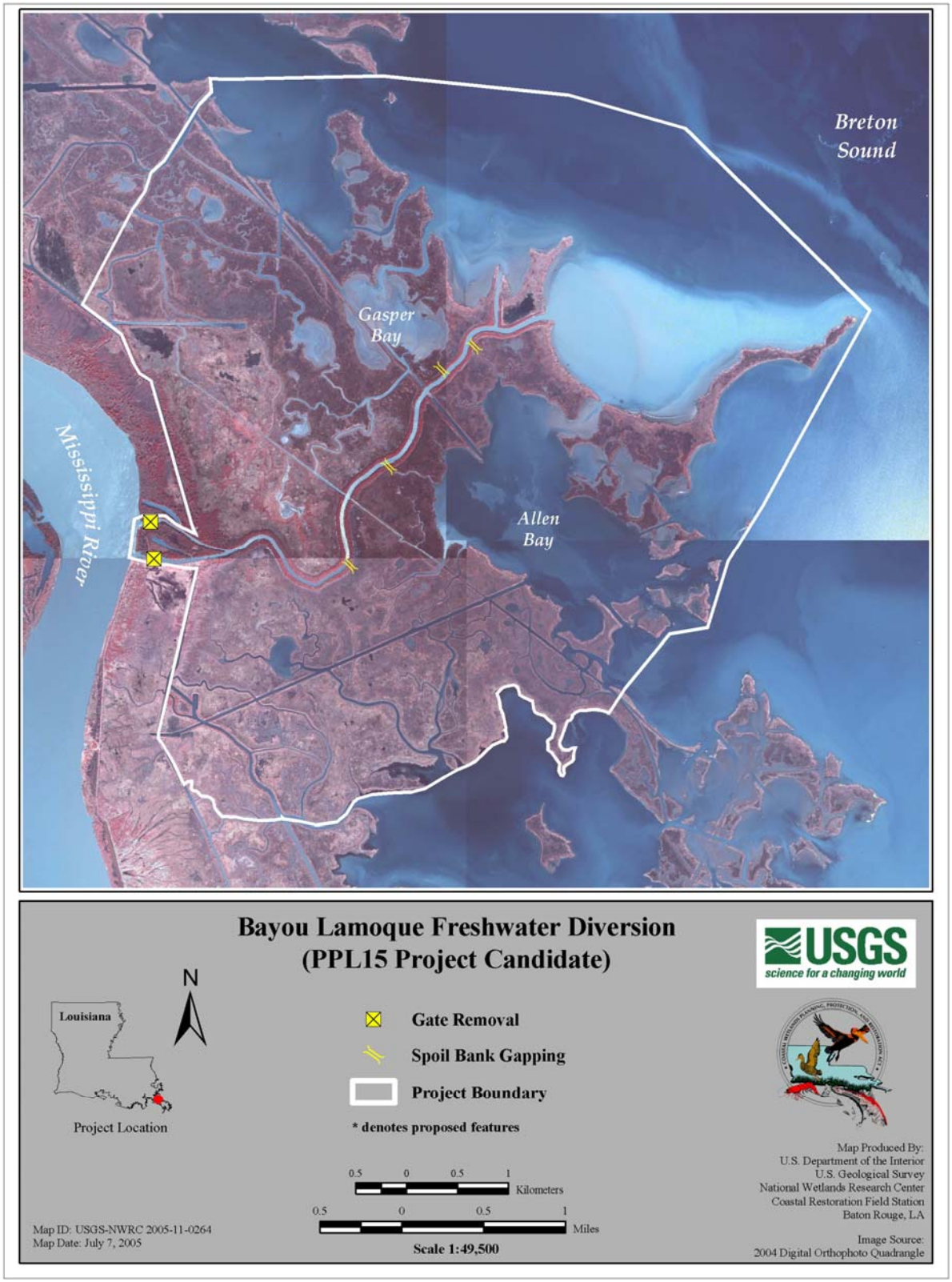
Goals: Achieve the following within 20 years, by continuously diverting up to 13,000 cfs (average 2500 cfs) of Mississippi River water into Bayou Lamoque, and by improving the distribution of diverted water in the benefit area by strategically gapping spoil banks along Bayou Lamoque: 1) Create approximately 620 acres of new marsh; 2) Increase the percent cover of aquatic vegetation in interior marsh ponds and channels; 3) Increase the area of shallow open water habitat in the project area; 4) Decrease mean salinity in the project area.

Proposed Solution: 1) Repair the Bayou Lamoque freshwater diversion structures through the removal of the gates and their mechanical operating systems to allow free-flowing diversion at the maximum capacity of both structures; 2) Construct gaps in the natural levee ridges or spoil banks on Bayou Lamoque at strategic locations to facilitate distribution of diverted water and to promote the accretion of new wetlands through the deposition of diverted river sediments.

Project Benefits: The project would benefit approximately 9,435 acres of intermediate marsh, brackish marsh, and open water habitats. Approximately 620 acres of marsh would be created/protected over the 20-year project life.

Project Costs: The total fully funded cost for the project is $5,375,741.
Fully funded first cost: $3,997,398.

Sponsoring Agency/Contact Person:
Chris Monnerjahn, USACE, (504) 862-2415,
Christopher.J.Monnerjahn@mvn02.usace.army.mil
Kenneth Teague, EPA, (214) 665-6687, Teague.Kenneth@epamail.epa.gov
Greg Miller, USACE, (504) 862-2310, Gregory.B.Miller@mvn02.usace.army.mil


Breton Sound
Gasper Bay
Allen Bay
Mississippi River
Bayou Lamoque Freshwater Diversion
(PPL15 Project Candidate)
N
Louisiana
Project Location
Gate Removal
Spoil Bank Gapping
Project Boundary
* denotes proposed features
0.5 0 0.5 1
Kilometers
0.5 0 0.5 1
Miles
Scale 1:49,500
Map ID: USGS-NWRC 2005-11-0264
Map Date: July 7, 2005
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 Quadrangle

Project Name: Lake Hermitage Marsh Creation

Coast 2050 Strategy: Coastwide: Dedicated dredging to create, restore, or protect wetlands. Coastwide: Off-shore and riverine sand and sediment resources. Coastwide: Maintenance of Gulf, bay and lake shoreline integrity

Project Location: Region 2, Barataria Basin, Plaquemines Parish, West Point a la Hache Mapping Unit, south and east of Lake Hermitage.

Problem: From 1932 to 1990, the West Point a la Hache Mapping Unit lost 38% of its marsh. Through 2050, 28% of the 1990 marsh acreage is expected to be lost. That loss is expected to occur even with operation of the West Point a la Hache Siphon and implementation of the West Point a la Hache Outfall Management Project. Significant marsh loss has occurred south and east of Lake Hermitage and along the eastern lake shoreline. Deterioration of the lake rim will expose interior marshes to the wave energy of Lake Hermitage and increase tidal exchange.

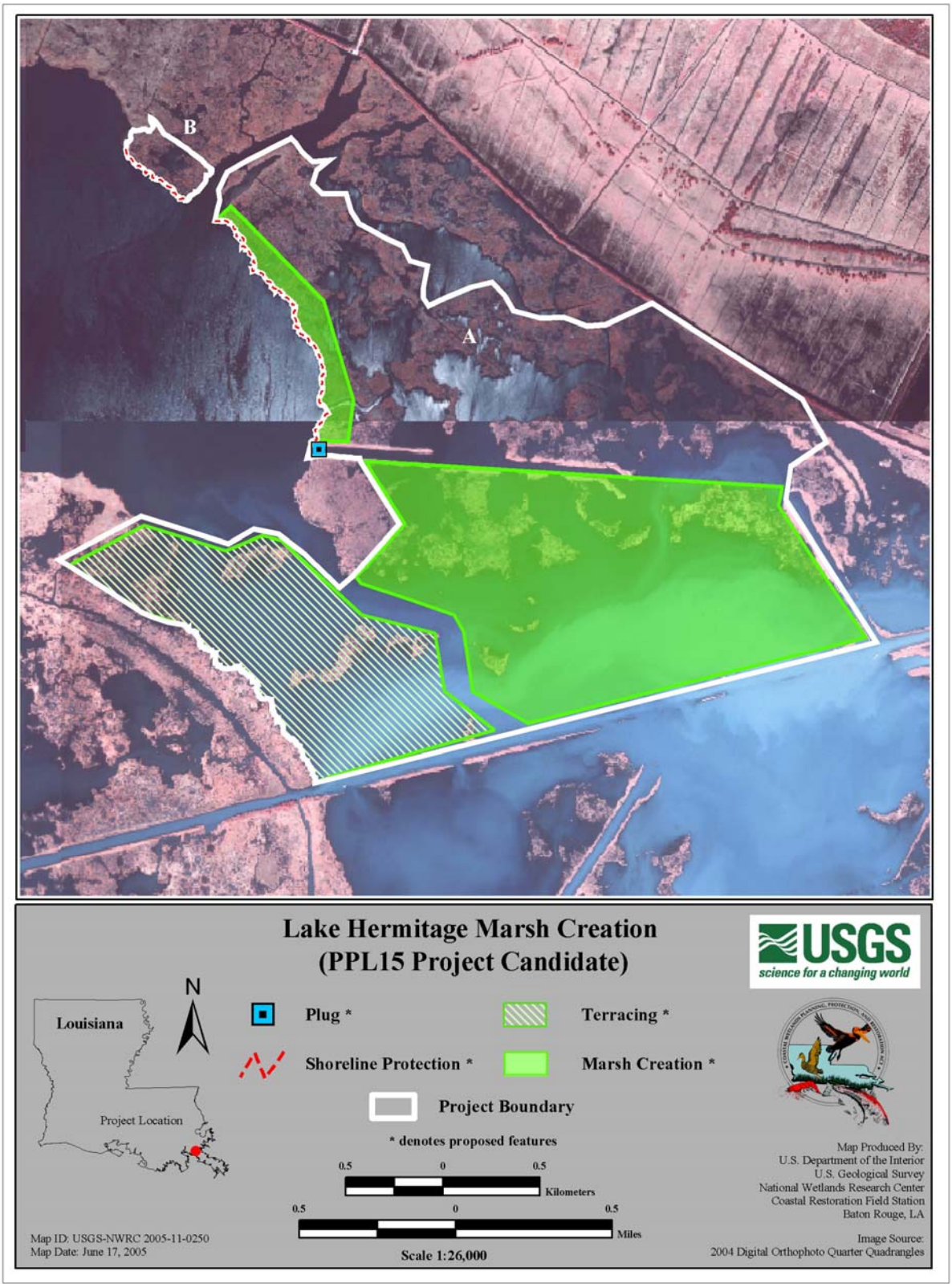
Goals: The goals of this project are to create approximately 593 acres of wetlands, reduce tidal exchange in marshes surrounding Lake Hermitage, and reduce fetch and turbidity to enhance open water habitats.

Proposed Solution: Riverine sediments will be hydraulically dredged and pumped via pipeline to create approximately 593 acres of marsh in the project area. Approximately 25,000 linear feet of terraces (16 acres) will be constructed to reduce fetch and turbidity and promote submerged aquatic vegetation. Approximately 6,000 linear feet of rock dike will be constructed along the eastern Lake Hermitage shoreline. An earthen plug will be constructed on an oil and gas canal to return tidal exchange to natural waterways within the project area.

Project Benefits: The project would benefit approximately 1,581 acres of brackish marsh and open water habitats. Approximately 438 acres of marsh would be created/protected over the 20-year project life.

Project Costs: The total fully funded project cost is $32,673,327.
Fully funded first cost: $30,367,462.

Sponsoring Agency/Contact Person:
Kevin Roy, U.S. Fish and Wildlife Service, (337) 291-3120, kevin_roy@fws.gov


B
A
Lake Hermitage Marsh Creation
(PPL15 Project Candidate)
USGS
science for a changing world
N
Louisiana
Project Location
Plug *
Terracing *
Shoreline Protection *
Marsh Creation *
Project Boundary
* denotes proposed features
0.5 0 0.5
Kilometers
0.5 0 0.5
Miles
Scale 1:26,000
Map ID: USGS-NWRC 2005-11-0250
Map Date: June 17, 2005
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

P**roject Name:** Venice Ponds Marsh Creation and Crevasses

Coast 2050 Strategy: Coastwide: Dedicated dredging to create, restore, or protect wetlands. Coastwide: Off-shore and Riverine Sand and Sediment Resources.

Project Location: Region 2, Mississippi River Delta Basin, Plaquemines Parish, south of Venice, Louisiana, adjacent to the Red, Tiger, and Grand Passes.

Problem: Between 1932 and 1974, the mapping unit lost 38,400 acres of the original 59,640 acres of marsh as a result of subsidence, tropical storm activity, canal creation, and maintenance and hydrologic modification. Between 1974 and 1990 another 13,260 acres of land had been lost (LCWCRTF & WRCA 1998b). It is estimated that without restoration efforts over 91% of the remaining land would be lost by the year 2050. The project would create marsh in open water areas that were nearly solid wetlands in 1956 by construction of crevasses and performing dedicated dredging.

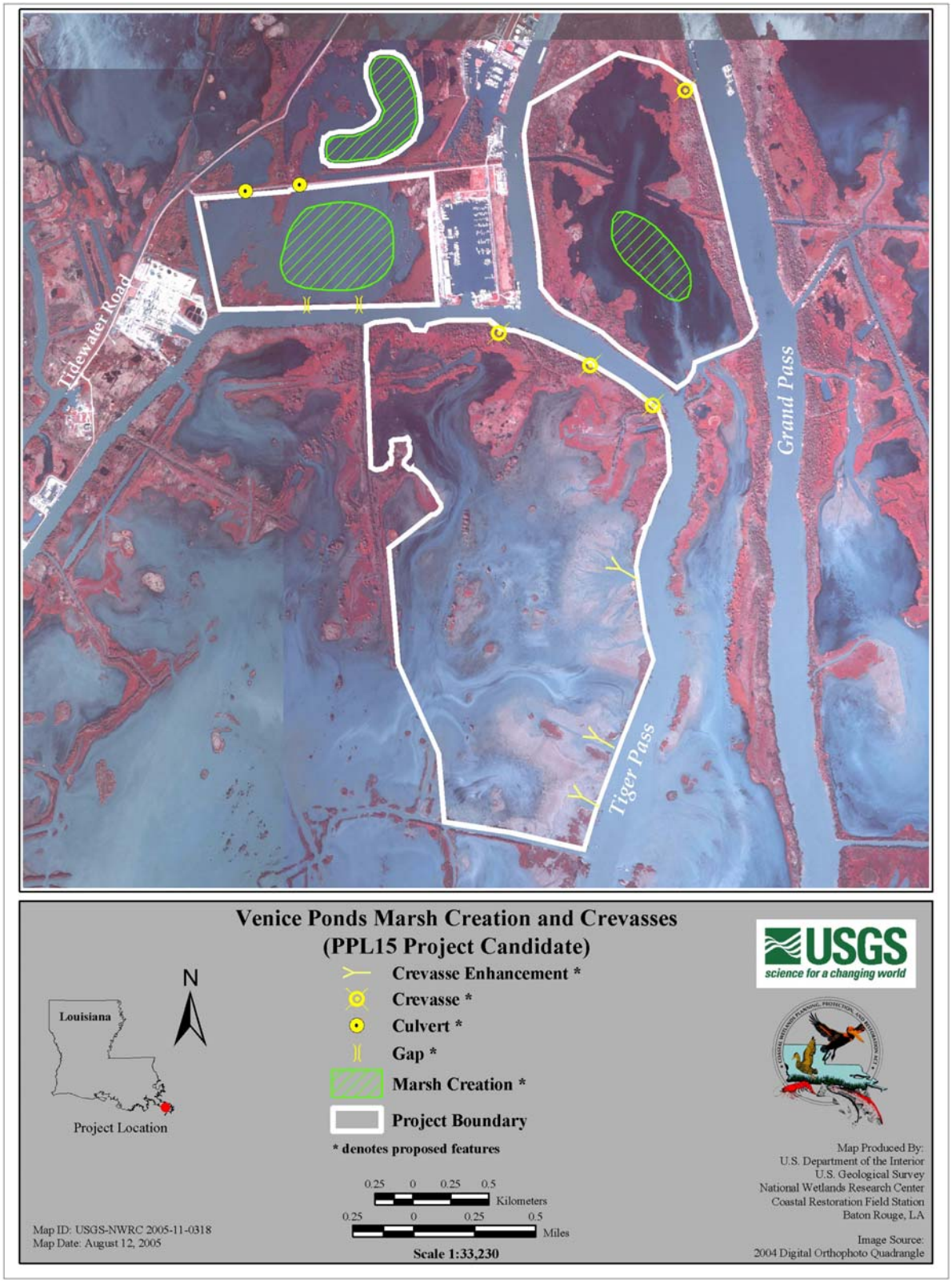
Goals: The goals of the project are to create, maintain, nourish, and replenish existing deteriorating wetlands through dedicated dredging, hydrologic restoration, crevasse construction, and crevasse enhancement.

Proposed Solution: 178 acres of marsh will be created in Sites 1, 2 and 3 (see Project Map) by hydraulically dredging material from Grand and Tiger Passes. The target elevation after one year in the Sites will be a maximum of +2.5 ft. NAVD88 and a minimum of +0.5 ft. NAVD88. The marsh creation areas will be pumped unconfined into the open water areas identified in Sites 1, 2, and 3. Existing marsh boundaries will also aid in the retention of dredged material and re-establishment of marsh habitat. Four crevasses, one into Site 3 and three into Site 4, will convey the sediment laden waters of Grand and Tiger Passes into the benefit areas. Three existing crevasses off of Tiger Pass that discharge into Site 4 will be improved through bifurcation dredging. Two sets of 2-36" diameter culverts will be installed under Venice Marina Road thereby increasing the hydrologic connection between Sites 1 and 2. Two gaps will be installed between Pass Tante Phine and Site 2 thereby increasing hydrologic connectivity.

Project Benefits: The project would benefit approximately 1,944 acres of fresh marsh and open water. Approximately 511 acres of marsh would be created/protected over the 20-year project life.

Project Costs: The total fully funded cost for the project is $8,992,955.
Fully funded first cost: $7,875,748.

Sponsoring Agency/Contact Person:
Chris Monnerjahn, USACE, (504) 862-2415,
christopher.j.monnerjahn@mvn02.usace.army.mil


Tidewater Road
Grand Pass
Tiger Pass
Venice Ponds Marsh Creation and Crevasses
(PPL15 Project Candidate)
Crevasse Enhancement *
Crevasse *
Culvert *
Gap *
Marsh Creation *
Project Boundary
* denotes proposed features
N
Louisiana
Project Location
0.25 0 0.25 0.5
Kilometers
0.25 0 0.25 0.5
Miles
Scale 1:33,230
Map ID: USGS-NWRC 2005-11-0318
Map Date: August 12, 2005
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 Quadrangle

Project Name: South Pecan Island Freshwater Introduction

Coast 2050 Strategy: Move water from north to south across Highway 82 with associated drainage improvements south of Highway 82. Maintain Lake's Subbasin target water level.

Project Location: Region 4, Mermentau Basin, Vermilion Parish, Conveyance channel from White Lake under LA Highway 82 into CWPPRA Pecan Island Terracing Project (ME-14).

Problem: The Chenier Subbasin south of Hwy 82 has been experiencing saltwater intrusion due to lack of freshwater and sediment input from the Lakes Subbasin north of Hwy 82, while north of the highway water is retained. Although culverts were installed in some areas along the highway during construction, those have filled in over the years and recent attempts to restore hydrology have been isolated.

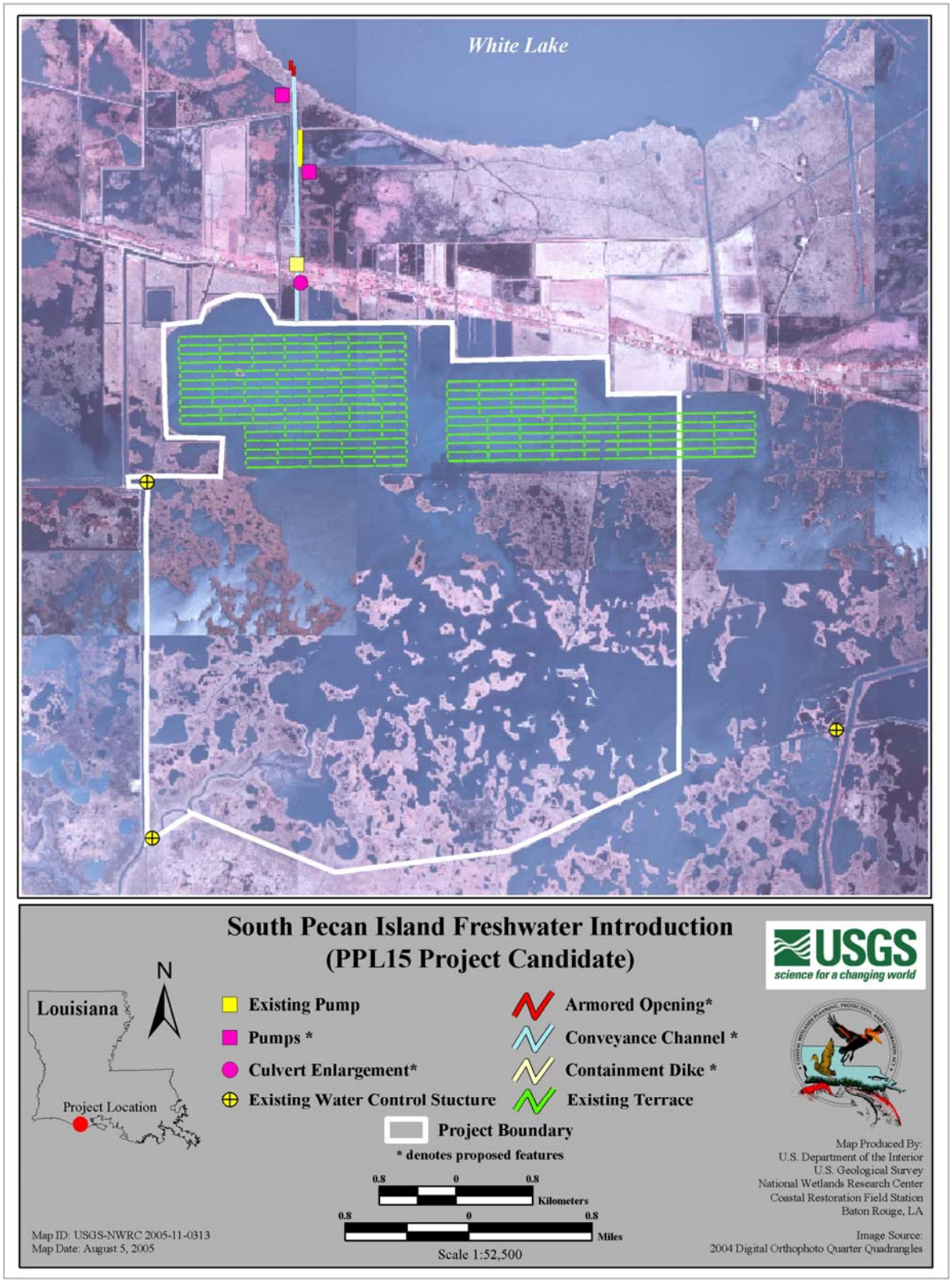
Goals: Provide freshwater flow over 200cfs to 7,000 acres for at least 3 months/year, and create 98 acres of marsh.

Proposed Solution: The project would be constructed to allow excess freshwater to drain, while preventing saltwater intrusion into the Lakes Subbasin. At Hwy 82, four 48" pipes would be installed with south facing flap gates to allow freshwater and sediment introduction from White Lake into the marsh south of Hwy 82. To prevent erosion, 200 ft on each side of the new structure would be rock armored. An existing 7,000 linear ft channel north of Hwy 82 would be excavated approximately 4 ft with a 25 ft bottom width (40 ft top width). The excavated material would be used to build a 1,300 ft section of bank needed along the northeast portion of the channel, and to refurbish existing banks. An existing plug would be removed at White Lake and rock armoring installed at the entrance. A pump would be relocated and an additional pump installed to maintain the landowners existing drainage needs that would be affected by the conveyance channel.

Project Benefits: The project would benefit approximately 7,005 acres of brackish marsh, submerged aquatic vegetation, and open water. Approximately 98 acres of marsh would be created over the 20-year project life.

Project Costs: The total fully funded cost for the project is $4,438,695.
Fully funded first cost: $3,802,097.

Sponsoring Agency/Contact Person:
John Foret, NMFS, (337) 291-2109, john.foret@noaa.gov


White Lake
South Pecan Island Freshwater Introduction
(PPL15 Project Candidate)
N
Louisiana
Project Location
Existing Pump
Pumps *
Culvert Enlargement*
Existing Water Control Stucture
Armored Opening*
Conveyance Channel *
Containment Dike *
Existing Terrace
Project Boundary
* denotes proposed features
0.8 0 0.8
Kilometers
0.8 0 0.8
Miles
Scale 1:52,500
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 2005-11-0313
Map Date: August 5, 2005

VII. SUMMARY AND CONCLUSIONS

The 15th PPL consists of 4 projects, for a Phase I cost of $4,579,509 and a Phase II cost of $46,901,209, which will be funded as these projects mature. The total benefits of the projects are estimated to be 1004 AAHUs, based on a comparison of future with and without-project conditions over the 20 year project life.

The CWPPRA Task Force believes the recommended projects represent the best strategy for addressing the immediate needs of Louisiana's coastal wetlands. The CWPPRA Task Force will conduct a final review of the plans and specifications for each project prior to the award of construction contracts by the lead Task Force agency and the allocation of construction funds by the Task Force chairman.

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Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Hydrologic Basins and Coast 2050 Regions

Vernon
Rapides
Avoyelles
Concordia
West Feliciana
East Feliciana
Pointe Coupee
Beauregard
Allen
Evangeline
St Landry
East Baton Rouge
West Baton Rouge
Tangipahoa
Livingston
St Tammany
Pontchartrain Basin
Jefferson Davis
Acadia
Calcasieu
Lafayette
St Martin
Iberville
Ascension
St John the Baptist
St James
Orleans
Region 1
St Bernard
Region 4
Calcasieu/Sabine Basin
Cameron
Mermentau Basin
Vermilion
Iberia
Assumption
St Charles
Jefferson
Region 2
Barataria Basin
St Martin
Teche/Vermilion Basin
Region 3
St Mary
Lafourche
Terrebonne Basin
Breton Sound Basin
Atchafalaya Basin
Plaquemines
Terrebonne
Mississippi River Delta Basin

Gulf of Mexico

1:1,346,500
20 0 20
Kilometers
20 0 20
Miles

N

Region Boundary
Hydrologic Basin
Parish Boundary

Image Source:
2000 Thematic Mapper Imagery

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

Map ID: USGS-NWRC 2005-11-0319
Map Date: August 17, 2005

Plate 1

PLATE 2. SUMMARY OF PROJECTS 1-15 PRIORITY PROJECT LISTS

1st Priority Project List (deauthorized = *underlined*)

U.S. Environmental Protection Agency
TE-20 Eastern Isle Dernieres Barrier Island Restoration Demonstration
U.S. Department of the Army
MR-03 West Bay Sediment Diversion
PO-17 Bayou LaBranche Wetland Marsh Creation
BA-19 Barataria Bay Waterway Marsh Creation
TV-03 Vermillion River Cutoff Bank Protection
U.S. Department of Commerce
BA-18 Fourchon Hydrologic Restoration
TE-19 Lower Bayou La Cache Wetland Hydrologic Restoration
U.S. Department of Agriculture
BA-02 G.I.W.W. to Clovelly Hydrologic Restoration
TE-18 Vegetative Plantings -Timbalier Island Planting Demonstration
TE-17 Vegetative Plantings - Falgout Canal Planting Demonstration
CS-19 Vegetative Plantings - West Hackberry Vegetative Planting
ME-08 Vegetative Plantings - Dewitt-Rollover Shore Protection Demonstration
(Vegetative Planting de-authorized)
U.S. Department of the Interior
PO-16 Bayou Sauvage NWR Hydrologic Restoration
ME-09 Cameron Prairie Refuge NWR Erosion Prevention
CS-18 Sabine National Wildlife Refuge Erosion Protection

2nd Priority Project List

U.S. Environmental Protection Agency
TE-24 Isle Dernieres Island Restoration
U.S. Department of the Army
TE-23 West Belle Pass Headland Restoration
CS-22 Clear Marais Shore Protection
U.S. Department of Commerce
AT-02 East Atchafalaya Crevasse Creation
TE-22 Point Au Fer Canal Plugs
AT-03 Big Island Sediment Distribution
U.S. Department of Agriculture
CS-09 Brown Lake Hydrologic Restoration
ME-04 Freshwater Bayou Wetland Protection
BA-20 Jonathan Davis Wetlands Protection
CS-20 East Mud Lake Hydrologic Restoration
CS-21 Hwy. 384 Hydrologic Restoration
PO-06 Fritchie Marsh Creation
TV-09 Vermillion Bay / Boston Canal Shoreline Stabilization
BS-03a Caernarvon Diversion Outfall Management
U.S. Department of the Interior
PO-18 Bayou Sauvage NWR Hydrologic Restoration

3rd Priority Project List (deauthorized = *underlined*)

U.S. Environmental Protection Agency
TE-27 Whiskey Island Restoration
PO-20 Red Mud Demonstration
U.S. Department of the Army
PO-19 M.R.G.O. Disposal Area Marsh Protection
MR-06 Channel Armor Gap Crevasse
MR-07 Pass-a-Loutre Crevasse
U.S. Department of Commerce
BA-21 Restoration of Bayou Perot / Bayou Rigolettes Marsh
TE-25 East Timabalier Sediment Restoration, Phase 1
TE-26 Lake Chapeau Marsh Creation and Hydrologic Restoration, Pointe au Fer Isle
BA-15 Lake Salvador Shoreline Protection Demonstration
U.S. Department of Agriculture
BA-04c West Pointe-a-la-Hache Outfall Management
TV-04 Cote Blanche Marsh Management
CS-04a Cameron – Creole Maintenance
BS-04a White's Ditch Outfall Management
TE-28 Brady Canal Hydrologic Restoration
PO-9a Violet Freshwater Distribution
ME-12 Southwest Shore White Lake Shore Protection Demonstration
U.S. Department of the Interior
CS-23 Replace Hog Island, West Cove and Headquarters Canal at Sabine Refuge Water Control Structures

4th Priority Project List (deauthorized = *underlined*)

U.S Environmental Protection Agency
CS-26 Compost Demonstration
U.S. Department of the Army
BS-07 Grand Bay Crevasse
MR-08 Beneficial Use of Hopper Dredged Material Demonstration
U.S. Department of Commerce
PO-21 Eden Isles Marsh Sediment Restoration
TE-30 East Timbalier Barrier Island Sediment Restoration, Phase 2
U.S. Department of Agriculture
CS-24 Perry Ridge Shore Protection
BA-22 Bayou L'Ours Ridge Hydrologic Restoration
BA-23 Barataria Bay Waterway Bank Protection (west)
CS-25 Plowed Terraces Demonstration
TE-31 Flotant Marsh Fencing Demonstration

5th Priority Project List

U.S. Environmental Protection Agency
BA-25 Bayou Lafourche Siphon Inc. (w/o cutoff structure)
U.S. Department of the Army
PO-22 Marsh Creation at Bayou Chevee
U.S. Department of Commerce
TV-12 Little Vermilion Bay Sediment Trapping
BA-25 Siphon at Myrtle Grove
U.S. Department of Agriculture
BA-03c Naomi Outfall Management
CS-11b Sweet Lake/ Willow Lake Hydrologic Restoration
TE-29 Raccoon Island Breakwater Demonstration
ME-13 Freshwater Bayou Bank Stabilization
U.S. Department of the Interior
TE-10 Grand Bayou Hydrologic Restoration

6th Priority Project List (deauthorized = *underlined*)

U.S Environmental Protection Agency
TE-33 Bayou Boeuf Pump Station Increment 1
U.S. Department of the Army
TV-14 Marsh Island Hydrologic Restoration
TE-35 Marsh Creation E. of the Atchafalaya River – Avoca Island
MR-10 Flexible Dustpan (DEMO) at Head of Passes
U.S. Department of Commerce
CS-27 Black Bayou Hydrologic Restoration
MR-09 Delta-Wide Crevasses
TV-15 Sediment Trapping at "The Jaws"
U.S. Department of Agriculture
TE-34 Penchant Basin Natural Resources Plan, Increment I
TV-13a Oaks/Avery Canals Hydrologic Restoration Increment I (Bank stabilization)
BA-26 Barataria Bay Waterway "Dupre Cut" Bank Protection (east)
TV-16 Cheniere au Tigre Sediment Trapping Device
U.S. Department of the Interior
TE-32a Lake Boudreaux Basin Freshwater Introduction
LA-03a Nutria Harvest for Wetland Restoration

7th Priority Project List

U.S. Department of Commerce
BA-28 Vegetative Planting of Dredged Material Disposal Site on Grande Terre Island
ME-14 Pecan Island Terracing
U.S. Department of Agriculture
BA-27 Barataria Basin Landbridge, Shoreline Stabilization – Phase 1
TE-36 Thin Mat Flotant Marsh Demonstration

8th Priority Project List (deauthorized = *underlined*)

U.S. Department of the Army
CS-28-1 Sabine Refuge Marsh Creation, Cycle 1
CS-28-2 Sabine Refuge Marsh Creation, Cycle 2
CS-28-3 Sabine Refuge Marsh Creation, Cycle 3
CS-28-4 Sabine Refuge Marsh Creation, Cycle 4
CS-28-5 Sabine Refuge Marsh Creation, Cycle 5
U.S. Department of Commerce
PO-25 Bayou Bienvenue Pump Outfall Management and Marsh Creation
PO-24 Hopedale Hydrologic Restoration
U.S. Department of Agriculture
BA-27 Barataria Basin Landbridge, Shoreline Protection, Phase 2 Increment A
BA-27 Barataria Basin Landbridge, Shoreline Protection, Phase 2 Increment B
BA-27 Barataria Basin Landbridge, Shoreline Protection, Phase 2 Increment C
(These projects were merged with BA-27 after PPL 8 approval and are subsequently numbered as BA-27)
ME-11 Humble Canal Hydrologic Restoration
BS-09 Upper Oak River Freshwater Introduction Siphon
TV-17 Lake Portage Landbridge

9th Priority Project List

U.S Environmental Protection Agency
BA-29 LA Highway 1 Marsh Creation
TE-40 Timbalier Island Dune/Marsh Restoration
TE-37 New Cut Dune / Marsh Restoration
U.S. Department of the Army
PO-26 Opportunistic Use of the Bonnet Carre Spillway
TV-11b Freshwater Bayou Bank Stabilization—Belle Isle Canal to Lock
MR-11 Periodic Introduction of Sediment and Nutrients at Selected Diversion Sites
TV-19 Weeks Bay/Commercial Canal / GIWW
U.S. Department of Commerce
PO-27 Chandeleur Islands Restoration
TV-18 Four-Mile Cut/Little Vermilion Bay HR
AT-04 Castille Pass Sediment Delivery
PO-28 LaBranche Wetlands Terracing/Plantings
BA-30 East Grand Terre Islands Restoration
U.S. Department of Agriculture
TE-39 South Lake DeCade Freshwater Introduction
CS-29 Black Bayou Bypass Culverts
CS-30 GIWW Bank Stabilization (Perry Ridge to Texas)
ME-17 Little Pecan Bayou Hydrologic Restoration
BA-27c Barataria Basin Landbridge Shore Protection Phase 3
U.S. Department of the Interior
ME-16 FW Introduction South of Hwy. 82
TE-41 Mandalay Bank Protection Demonstration

10th Priority Project List

U.S. Environmental Protection Agency
PO-30 Lake Borgne Shoreline Protection
BA-34 Small Freshwater Diversion to the NW Barataria Basin
U.S. Department of the Army
MR-13 Benneys Bay 50,000 cfs Diversion
BA-33 Delta Building Diversion at Myrtle Grove
BS-10 Delta Building Diversion North of Fort St. Phillip
U.S. Department of Commerce
ME-18 Rockefeller Refuge Gulf Shoreline Stabilization
U.S. Department of Agriculture
TE-43 GIWW Bank Restoration of Critical Areas in Terrebonne
U.S. Department of the Interior
ME-19 Grand-White Lake Landbridge Protection Project
TE-44 North Lake Mechant Landbridge Restoration
BS-11 Delta Management at Fort St. Phillip
CS-32 East Sabine Lake Hydrologic Restoration (with Terraces)
TE-45 Terrebonne Bay Shore Protection Demonstration

11th Priority Project List

U.S Environmental Protection Agency
PO-29 River Reintroduction into Maurepas Swamp
PO-31 or PO-11-1 Lake Borgne Shoreline Protection at Bayou Dupre
(This project merged with PO-30 after PPL 11 approval and is subsequently numbered as PO-30)
TE-47 Ship Shoal: West Flank Restoration
U.S. Department of the Army
ME-21 Grand Lake Shoreline Protection
U.S. Department of Commerce
BA-35 Pass Chaland to Grand Bayou Pass Barrier Island Restoration
BA-37 Little Lake Shoreline Protection/Dedicated Dredging near Round Lake
BA-38 Barataria Barrier Island: Pelican Island and Pass La Mer to Chaland Pass
U.S. Department of Agriculture
BA-27d Barataria Basin Landbridge Shoreline Protection (northeast only), Phase 4
LA-03b Coastwide Nutria Control Program
CS-31 Holly Beach Sand Management
TE-48 Raccoon Island Shoreline Protection/Marsh Creation
U.S. Department of the Interior
BA-36 Dedicated Dredging on the Barataria Basin Landbridge
ME-20 South Grand Chenier Hydrologic Restoration
TE-46 W. Lake Boudreaux Shoreline Protection and Marsh Creation

12th Priority Project List

U.S Environmental Protection Agency
BA-39 Bayou Dupont Marsh Creation
U.S. Department of the Army
TE-49 Avoca Island Diversion and Land Building
PO-32 Lake Borgne and MRGO Shoreline Protection
ME-22 South White Lake Shoreline Protection
MR-12 Mississippi River Sediment Trap
U.S. Department of Agriculture
LA-05 Freshwater Floating Marsh Demonstration

13th Priority Project List

U.S Environmental Protection Agency
TE-50 Whiskey Island Back Barrier Marsh Creation
U.S. Department of the Army
MR-14 Spanish Pass Diversion
LA-06 Shoreline Protection Foundation Improvements Demonstration
U.S. Department of Agriculture
TV-20 Bayou Sale Ridge Protection
U.S. Department of the Interior
PO-33 Goose Point/Point Platte Marsh Creation

14th Priority Project List

U.S. Environmental Protection Agency
TV-21 East Marsh Island Marsh Creation
U.S. Department of Commerce
BA-40 Riverine Sand Mining/Scofield Island Restoration
U.S. Department of Agriculture
BS-12 White Ditch Resurrection
BA-41 South Shore of The Pen Shoreline Protection and Marsh Creation

15th Priority Project List

U.S. Department of the Army/ U.S. Environmental Protection Agency
BS-13 Bayou Lamoque Freshwater Diversion
MR-15 Venice Ponds Marsh Creation and Crevasses
U.S. Department of the Interior
BA-42 Lake Hermitage Marsh Creation
U.S. Department of Commerce
ME-23 South Pecan Island Freshwater Introduction

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Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-15 and Coast 2050 Regions

Region 1

Region 2

Region 3

Region 4

Gulf of Mexico

PPL1
PPL 2
PPL 3
PPL 4
PPL 5
PPL 6
PPL 7
PPL 8
PPL 9
PPL 10
PPL 11
PPL 12
PPL 13
PPL 14
PPL 15

Region Boundary

1:1,346,500
20 0 20
Kilometers
20 0 20
Miles

N

Image Source:
2000 Thematic Mapper Imagery

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

Map ID: USGS-NWRC 2006-11-0100
Map Date: February 14, 2006

Plate 3

Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-15 Coast 2050 Region 1

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Tangipahoa
St Tammany
Livingston
East Baton Rouge
Pontchartrain Basin
Lake Maurepas
Lake Pontchartrain
PO-33
PO-06
Ascension
PO-29
PO-18
PO-22
St John the Baptist
St James
PO-17
PO-28
PO-27
PO-16
Orleans
Lake Borgne
PO-26
PO-30
St Bernard
PO-30
Assumption
St Charles
Jefferson
Terrebonne
PO-32
PO-24
PO-19
Lake Salvador
Mississippi River
Plaquemines
Chandeleur Sound
Gulf of Mexico
Breton Sound

PPL1 PO-16, PO-17	PPL 6 None	PPL 11 PO-29
PPL 2 PO-06, PO-18	PPL 7 None	PPL 12 PO-32
PPL 3 PO-19	PPL 8 PO-24	PPL 13 PO-33
PPL 4 None	PPL 9 PO-26, PO-27, PO-28	PPL 14 None
PPL 5 PO-22	PPL 10 PO-30	PPL 15 None

1:584,000

10 0 10 Kilometers

10 0 10 Miles

N

Region 1 Boundary

CWPPRA Hydrologic Basin Boundary

Parish Boundary

Image Source:
2000 Thematic Mapper Imagery

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

Map ID: USGS-NWRC 2006-11-0101
Map Date: February 14, 2006

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Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-15 Coast 2050 Region 2

St John the Baptist
St James
Lake Pontchartrain
Orleans
Assumption
St Charles
Jefferson
St Bernard
St Martin
Barataria Basin
St Mary
Breton Sound Basin
Lafourche
Breton Sound
Terrebonne
Plaquemines
Barataria Bay
Timbalier Bay
Gulf of Mexico
Mississippi River Delta Basin
Lake Salvador

BA-34
BA-15
BA-20
BA-27d
BA-25b
BA-03c
BS-03a
BS-12
BA-41
BA-39
BA-27
BA-25b
BA-25b
BA-33
BA-24
BA-42
BA-04c
BA-36
BA-02
BA-27c
BA-23
BA-26
BA-25b
BA-37
BS-13
BS-10
BS-11
BA-25b
BA-28
BA-35
MR-09
MR-13
BA-40
MR-14
MR-12
MR-15
MR-03
BA-29
BA-19
BA-30
BA-38
MR-12
MR-06
MR-09
MR-10

PPL1 BA-02, BA-19, MR-03	PPL 6 BA-26, MR-09, MR-10	PPL 11 BA-27d, BA-35, BA-36, BA-37, BA-38
PPL 2 BA-20, BS-03a	PPL 7 BA-27, BA-28	PPL 12 BA-39, MR-12
PPL 3 BA-04c, BA-15, MR-06	PPL 8 None	PPL 13 MR-14
PPL 4 BA-23	PPL 9 BA-27c, BA-29, BA-30	PPL 14 BA-40, BA-41, BS-12
PPL 5 BA-03c, BA-24, BA-25b	PPL 10 BA-33, BA-34, BS-10, BS-11, MR-13	PPL 15 BA-42, BS-13, MR-15

1:625,000
10 0 10 Kilometers
10 0 10 Miles

N

Region 2 Boundary
CWPPRA Hydrologic Basin Boundary
Parish Boundary

Image Source:
2000 Thematic Mapper Imagery

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

Map ID: USGS-NWRC 2006-11-0102
Map Date: February 14, 2006

Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-15 Coast 2050 Region 3

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Assumption
St Martin
Lafourche
St Charles
Terrebonne Basin
Lake Salvador
Vermilion
Vermilion Bay
West Cote Blanche Bay
East Cote Blanche Bay
Atchafalaya Basin
St Mary
Teche/Vermilion Basin
Iberia
Atchafalaya Bay
Gulf of Mexico
Terrebonne
Terrebonne Bay
Timbalier Bay

TV-13a, TV-19, TV-03, TV-09, TV-12, TV-18, TV-11b, TV-17, TV-16, TV-15, TV-04, TV-20, TV-14, TV-21

TE-49, TE-43, BA-25b, TE-41, TE-34, TE-32a, TE-42, TE-10, TE-17, TE-28, TE-44, TE-39, TE-46, TE-45, TE-26, TE-22

AT-03, AT-02, AT-04

TE-48, TE-29, TE-50, TE-47, TE-24, TE-27, TE-37, TE-20, TE-40, TE-18, TE-25, TE-30, TE-23

PPL1 TE-17, TE-18, TE-20, TV-03	PPL 6 TE-32a, TE-34, TV-13a, TV-14, TV-15, TV-16	PPL 11 TE-46, TE-47, TE-48
PPL 2 AT-02, AT-03, TE-22, TE-23, TE-24, TV-09	PPL 7 None	PPL 12 TE-49
PPL 3 TE-25, TE-26, TE-27, TE-28, TV-04	PPL 8 TV-17	PPL 13 TE-50, TV-20
PPL 4 TE-30	PPL 9 AT-04, TE-37, TE-39, TE-40, TE-41, TE-42, TV-11b, TV-18, TV-19	PPL 14 TV-21
PPL 5 BA-25b, TE-10, TE-29, TV-12	PPL 10 TE-43, TE-44, TE-45	PPL 15 None

1:525,275

10 0 10 Kilometers

10 0 10 Miles

N

Region 3 Boundary

CWPPRA Hydrologic Basin Boundary

Parish Boundary

Image Source:
2000 Thematic Mapper Imagery

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

Map ID: USGS-NWRC 2006-11-0103
Map Date: February 14, 2006

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Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-15 Coast 2050 Region 4

Calcasieu
Jefferson Davis
Vermilion
Cameron
Calcasieu/Sabine Basin
Mermentau Basin
Lake Calcasieu
Grand Lake
White Lake
Gulf of Mexico

CS-30 CS-24 CS-25 CS-27 CS-22 CS-09 CS-29 CS-21 CS-19 CS-28 CS-32 CS-18 CS-23 CS-11b CS-17 CS-04a CS-20 CS-31 ME-09 ME-11 ME-19 ME-21 ME-20 ME-17 ME-18 ME-13 ME-04 LA-06 ME-22 ME-14 ME-16 ME-23

PPL1 CS-17, CS-18, CS-19, ME-09	PPL 6 CS-27	PPL 11 CS-31, ME-20, ME-21
PPL 2 CS-09, CS-20, CS-21, CS-22, ME-04	PPL 7 ME-14	PPL 12 ME-22
PPL 3 CS-04a, CS-23	PPL 8 CS-28, ME-11	PPL 13 LA-06
PPL 4 CS-24, CS-25	PPL 9 CS-29, CS-30, ME-16, ME-17	PPL 14 None
PPL 5 CS-11b, ME-13	PPL 10 CS-32, ME-18, ME-19	PPL 15 ME-23

Region 4 Boundary
CWPPRA Hydrologic Basin Boundary
Parish Boundary

N

1:460,000

10 0 10 Kilometers

10 0 10 Miles

Image Source:
2000 Thematic Mapper Imagery

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

Map ID: USGS-NWRC 2006-11-0104
Map Date: February 14, 2006