16th PRIORITY PROJECT LIST REPORT

PREPARED BY:

LOUISIANA COASTAL WETLANDS CONSERVATION AND RESTORATION TASK FORCE

March 2007

Coastal Wetlands Planning, Protection and Restoration Act

16th Priority Project List Report

Table of Contents

VOLUME 1 MAIN REPORT
VOLUME 2 APPENDICES

MAIN REPORT – VOLUME 1

Coastal Wetlands Planning, Protection and Restoration Act

16th Priority Project List Report

Table of Contents

MAIN REPORT – LIST OF TABLES AND FIGURES

MAIN REPORT – LIST OF PLATES

APPENDICES – VOLUME 2

Coastal Wetlands Planning, Protection and Restoration Act

16th Priority Project List Report

Main Report – Volume 1

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 production and 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 in the state at a rate of 24 square miles per year, from 1990 to the present, continue to threaten the resource. In addition, significant land losses possibly occurred from the fall of 2004 to the fall of 2005 due to Hurricanes Katrina and Rita. A total of 118 square miles of new water appeared. The transformation of land to new water areas includes the entire coast of Louisiana from the Chandeleur Islands to the Sabine River. Moveover, the change from land to water in all of coastal Louisiana due to the 2005 hurricanes was 72.9 square miles, which exceeds the 60-square miles projected to occur through 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 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. An 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, 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 16th 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, 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 16.

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 planning, design, construction, and O & M cost estimates for consistency. The Economic Work Group performed the economic analysis, which included preparing fully funded cost estimates and 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.

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 (AAG) 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. 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 16TH PRIORITY PROJECT LIST

IDENTIFICATION & SELECTION OF CANDIDATE DEMONSTRATION PROJECTS

Regional Planning Team (RPT) meetings were held during the period of January 10 through January 12, 2006 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 propose projects and demonstration projects for the 16th PPL. A separate coast-wide voting meeting was held on February 1, 2006 to choose no more than two projects per hydrologic basin, except that three projects may be selected from Terrebonne and Barataria Basins because of the high loss rates in those basins. In addition, six demonstration projects were selected as nominees. One was subsequently withdrawn. A total of twenty projects and six demonstration projects (one withdrawn) were nominated. PPL15 candidate projects not selected by the Task Force on February 8, 2006 for Phase I funding were automatically made nominees under PPL16. These projects competed for Phase 0 candidate status with the other nominees selected at the coast-wide voting meeting. With the addition of one PPL15 rollover there were twenty-one nominees under PPL16. A schedule of meetings is shown in Table 1.

Table 1: RPT Meetings to Propose/Nominate Projects

Region 1: New Orleans, Louisiana	January 12, 2006
Region 2: New Orleans, Louisiana	January 12, 2006
Region 3: Morgan City, Louisiana	January 11, 2006
Region 4: Abbeville, Louisiana	January 10, 2006
Coast-wide Voting Meeting, Baton Rouge, Louisiana	February 1, 2006

The Engineering and Environmental Work Groups and the AAG met on February 22-23, 2006 to review and reach consensus on preliminary project features, benefits, and fully funded cost estimates for twenty newly 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 3, 2006. The matrix is included as Table 2.

Table 2a: 16th 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	MC	Alligator Bend Marsh Restoration and Shoreline Protection	$20M - $25M	500-550	X				
1	PO	FD	Violet Siphon Enlargement	$40M - $50M	300-350	X	X	X	X	
2	MR	MC	Romere Pass Marsh Creation	$20M - $25M	350-400			X		
2	MR	MC	Delta National Wildlife Refuge Marsh Creation	$30M - $35M	500-550			X		
2	BS	MC/SP	Wills Point Marsh Creation	$35M - $40M	650-700	X		X		
2	BS	MC	Breton Landbridge Marsh Restoration	$30M - $35M	650-700			X		
2	BA	SP/MC	Jean Lafitte Shoreline Protection	$20M - $25M	400-450			X	X	
2	BA	MC/TR	Wisner Wildlife Management Area Marsh Creation	$25M - $30M	300-350	X	X			
2	BA	MC	Grand Liard Marsh and Ridge Restoration	$30M - $35M	250-300	X	X	X		
3	TE	MC/TR	Madison Bay Marsh Creation and Terracing	$20M - $25M	300-350	X		X	X	
3	TE	BI	West Belle Pass Barrier Headland Restoration	$20M - $25M	300-350			X		
3	TE	FD/TR	Falgout Canal Freshwater Enhancement	$5M - $10M	50-100		X		X	
3	AT	SP	Point Chevreuil Shoreline Protection	$10M - $15M	100-150				X	
3	AT	SD/MC	Deer Island Sediment Delivery	$5M - $10M	300-350		X		X	Potential navigation channel impact
3	TV	SP	Vermilion Bay Shoreline Protection	$0M - $5M	100-150				X	
3	TV	MC/HR	South Marsh Island Marsh Creation	$10M - $15M	250-300				X	
3	TV	MC/SP	Bird Island/Southwest Pass Marsh Creation and Shoreline Protection (PPL 15 rollover)	$15M - $20M	100-150	X	X		X	
4	CS	MC	Calcasieu River Ship Channel Sediment Bypass	$10M - $15M	0-50				X	Potential navigation channel impact
4	CS	MC/SP	North Black Lake Marsh Creation	$30M - $35M	450-500			X		
4	ME	MC	Restoration of Longshore Sediment Flow Across the Mouth of the Mermentau Ship Channel/Mermentau Ship Channel By-Pass	$10M - $15M	0-50			X	X	Potential navigation channel impact
4	ME	SP/MC	Southwest Louisiana Gulf Shoreline Nourishment and Protection	$15M - $20M	800-850			X	X	

Basin codes: AT=Atchafalaya; BA=Barataria; BS=Breton Sound; CS=Calcasieu/Sabine; PO=Pontchartrain; ME=Mermentau; MR=Mississippi River Delta; TE=Terrebonne; TV=Teche/Vermilion

Project type codes: BI=Barrier Island Restoration; CP=Vegetative Planting; FD=Freshwater Diversion; HC= Herbivory Control; HR=Hydrologic Restoration; MC=Marsh Creation; MM=Marsh Management; OM=Outfall Management; SD=Sediment Diversion; SP=Shoreline Protection; ST=Sediment Trapping; TR=Terracing; VP=Vegetative Planting

Table 2b: 16th Project Priority List Demonstration Nominee Project Matrix

Demonstration Project Name	Meets Demonstration Project Criteria?	Lead Agency	Total Fully Funded Cost	Technique Demonstrated
Sediment Containment System for Marsh Creation Demo	Yes	NRCS	$740,806	Demonstrates the effectiveness of a sediment trapping system to facilitate sedimentation in the outfall of freshwater diversion sites.
Enhancement of Barrier Island Vegetation Demo	Yes	EPA	$845,187	Tests several technologies and/or products (e.g., humic acid addition, fertilization, seed dispersal) to enhance the establishment and growth of barrier island and salt marsh vegetation.
Barrier Island Sand Blowing Demo	Yes	USACE	$1,919,343	Demonstrates the use of sand blowing technology for the purpose of mining sand sources in the dry and placing (unloading) the material in the dry for barrier island restoration.
Nourishment of Permanently Flooded Cypress Swamps Through Dedicated Dredging Demo	Yes	FWS	$1,550,188	Investigates the effects of deposition of dredged material in cypress swamp. Determines the effects on tree growth and regeneration. Several methods of planting cypress trees in the newly deposited dredged material would also be investigated.
Evaluation of Bioengineered Reefs Performing as Submerged Breakwaters Demo	Yes	NMFS	$1,421,702	Investigates specific designs of bioengineered reefs and their ability to mitigate shoreline erosion in poor soil environments. Performance of the reefs will be compared to traditional submerged rock breakwaters and their potential to serve as an oyster reef.

At the February 8, 2006 Task Force meeting, the Task Force decided to allow ten candidate projects to be considered under PPL16. The original number of candidates to be selected was set at six by the Task Force. The CWPPRA Technical Committee met publicly on March 15, 2006 to consider the preliminary costs, wetland benefits, and potential issues of the twenty-one nominees. Ten candidate projects were selected for detailed assessment by the Environmental, Engineering, and Economic Work Groups, and the AAG.

Phase 0 analysis of the ten candidate projects took place from April 2006 through August 2006. Interagency field visits were conducted during April and May 2006 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 May 24, 2006, 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 20, 2006, the Engineering Work Group met to review and approve the Phase I and II cost estimates developed by the agencies for the ten PPL16 candidates and three PPL16 demonstration candidates. In July 2006, 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 2-3, 2006. The Environmental and Engineering Work Groups and AAG also met on August 2-3, 2006 to evaluate and rank the three demonstration projects. The Economics Work Group reviewed cost estimates and developed annualized costs in the month of August 2006.

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 16th Priority Project List Candidate Demonstration Projects

		Parameter (Pn)						
Demonstration Project Name	**Total Fully Funded Cost**	**P_1**	**P_2**	**P_3**	**P_4**	**P_5**	**P_6**	**Total Score**
Enhancement of Barrier Island Vegetation Demo	$919,599	3	3	3	3	2	2	16
Nourishment of Permanently Flooded Cypress Swamps Through Dedicated Dredging Demo	$1,132,576	3	3	2	2	2	2	14
Sediment Containment System for Marsh Creation Demo	$1,474,785	3	2	2	3	3	2	15

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: 16th 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)
Alligator Bend Marsh Restoration and Shoreline Protection	166	330	45.4	$19,620,813	$1,511,324	$9,104
Violet Siphon Enlargement	2,436	1,609	59.8	$53,184,577	$4,102,218	$1,684
Breton Landbridge Marsh Restoration	62	176	41.5	$13,566,683	$1,053,752	$16,996
Jean Lafitte Shoreline Protection	157	462	49.4	$29,836,540	$2,042,606	$13,010
Grand Liard Marsh and Ridge Restoration	167	285	51.0	$27,837,237	$2,190,749	$13,118
Madison Bay Marsh Creation and Terracing	242	372	45.9	$32,353,377	$2,512,603	$10,383
West Belle Pass Barrier Headland Restoration	180	299	59.3	$32,563,747	$2,463,461	$13,686
Deer Island Pass Sediment Delivery	68	216	54.4	$8,775,058	$501,660	$7,377
Vermilion Bay Shoreline Protection	44	132	41.4	$9,407,238	$615,896	$13,998
Southwest Louisiana Gulf Shoreline Nourishment and Protection	311	888	63.5	$36,922,487	$2,064,226	$6,637

Two public meetings were held in Abbeville, LA, and New Orleans, LA, respectively, August 30 and 31, 2006, to present projects to the public for comment.

The CWPPRA Technical Committee met on September 13, 2006 to select projects for recommendation to the CWPPRA Task Force for Phase I funding. Each agency cast a total of six weighted votes, used to rank the ten 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. The Technical Committee also ranked the three demonstration projects. Each agency cast one vote, used to rank the three demonstration projects. The Technical Committee recommended one demonstration project to the CWPPRA Task Force for funding. The results of the CWPPRA Technical Committee vote are outlined in Table 5. On October 18, 2006, the CWPPRA Task Force reviewed the Technical Committee recommendations and moved to adopt the recommendation without change.

Table 5: 16th 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
PO-34	Alligator Bend Marsh Restoration and Shoreline Protection	R1	3	6	3	5	5	3	6	25
ME-24	Southwest Louisiana Gulf Shoreline Nourishment and Protection	R4	2	5	6	2	4	1	6	20
TE-51	Madison Bay Marsh Creation and Terracing	R3	1	2	4	4	2	4	6	17
TE-52	West Belle Pass Barrier Headland Restoration	R3	5	1	5	3		5	5	19
+	Violet Siphon Enlargement	R1	6			6		6	3	18
+	Jean Lafitte Shoreline Protection	R2		4	2		3		3	9
+	Vermilion Bay Shoreline Protection	R3				1	6		2	7
+	Grand Liard Marsh and Ridge Restoration	R2	4					2	2	6
+	Deer Island Sediment Delivery	R3			1		1		2	2
+	Breton Landbridge Marsh Restoration	R2		3					1	3

Demonstration Projects

*Project No.	Demonstration Project Name	Coast 2050 Region	EPA	COE	FWS	STATE	NRCS	NMFS	No. of Votes
TE-53	Enhancement of Barrier Island Vegetation Demo	N/A	1	1		1			3
+	Sediment Containment System for Marsh Creation Demo	N/A					1	1	2
+	Nourishment of Permanently Flooded Cypress Swamps Through Dedicated Dredging Demo	N/A			1				1

*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 & DEMONSTRATION 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.

A 25% contingency was applied to construction, operations and maintenance costs on all projects because detailed project specific information such as soil borings, surveys, and hydrologic data were not collected. Construction unit costs, engineering and design, environmental compliance, real estate acquisition, supervision and administration, and supervision and inspection costs were reviewed for reasonableness.

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 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 PPLs 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 is discussed in more detail in Appendix B.

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

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: Alligator Bend Marsh Restoration and Shoreline Protection

Coast 2050 Strategy: Regional – Maintain East Orleans Landbridge by marsh creation and shoreline protection. Regional – Maintain shoreline integrity of Lake Borgne.

Project Location: Region 1, Pontchartrain Basin, Orleans Parish, along the East Orleans Landbridge on the northwest shoreline of Lake Borgne. The project area is located between the Chef Pass, the Gulf Intracoastal Waterway (GIWW), Unknown Pass, and Lake Borgne.

Problem: The landfall of hurricane Katrina in southeast Louisiana destroyed thousands of acres of marsh and other coastal habitats in the Lake Pontchartrain basin. Along the shorelines of Lake Borgne the storm created breaches between the lake and interior marshes and in some cases removed large expanses of wetlands. Loss of wetlands in the Alligator Bend area has created more than 1,000 acres of open water in a complex that formerly supported relatively stable brackish marshes. Post-storm aerial photographs show the most significant losses occurred along the flanks of Bayou Platte. The current landscape configuration has left a large area of open water between eroding shorelines on Lake Borgne and along the GIWW. Continued shoreline erosion and future storms could create a direct path of open water connecting the GIWW and Lake Borgne and threaten the integrity of this important landbridge.

Goals: The purpose of the project is to restore critical wetlands destroyed by hurricane Katrina and to prevent breaching of degraded marshes between the GIWW and Lake Borgne.

Proposed Solution: Two restoration techniques will be employed for this project – dedicated dredging for marsh creation and vegetation planting for shoreline protection. A hydraulic dredge would be used to mine material from a nearby borrow area and pump the material into two sites within the project area. The dredge would pump 2,988,700 cubic yards into the area to restore and nourish brackish marsh in a 410-acre portion of the project. The restored marsh area would be planted with smooth cordgrass to jumpstart colonization of the marsh plant community in the restored area. The second technique to be used in this project is vegetation planting along 38,140 feet of the Lake Borgne shoreline (protecting an 84 acre portion of the project area).

Project Benefits: The project would benefit about 494 acres of fresh marsh and open water. Approximately 330 acres of marsh would be created/protected over the 20-year project life.

Project Costs: The total fully funded cost for the project is $ 19,620,813.

Preparers of Fact Sheet:
Gregory Miller, Corps of Engineers, (504) 862-2310, Gregory.B.Miller@usace.army.mil
Marty Floyd, NRCS, (318) 473-7690, marty.floyd@la.usda.gov

Alligator Bend Marsh Restoration and Shoreline Protection
(PPL Project Candidate)

Shoreline Protection *
Containment Dike *
Marsh Creation *
Marsh Nourishment *
Project Boundary

* denotes proposed features

0.4 0 0.4 Kilometers
0.4 0 0.4 Miles

Scale 1:51,000

USGS science for a changing world

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

Image Source:
2005 Digital Orthophoto Quarter Quadrangle

Map ID: USGS-NWRC 2006-11-0374
Map Date: June 26, 2006

Project Name: Violet Siphon Enlargement

Coast 2050 Strategy: Wetland sustaining diversion from the Mississippi River near Violet

Project Location: Region 1, Lake Pontchartrain Basin, St. Bernard Parish, Central Wetlands Mapping Unit, near Violet, LA.

Problem: This area has experienced wetland loss and dramatic changes in vegetative communities due to a variety of factors including filling, subsidence, saltwater intrusion, lack of sediment and nutrient input, tropical storm activity, canal dredging and maintenance, and hydrologic modifications (impoundment).

Goals: Reduce wetland losses in existing marshes in the project area, create marsh in the project area, increase SAV cover in the project area, maintain area of shallow water habitat in the project area, decrease salinity in the project area and beyond.

Proposed Solution: Reintroduction of freshwater, sediment, and nutrients is proposed to maintain and nourish existing and created marshes. The proposed diversion structure would be constructed in the same location as the existing siphon. Project features include a gated structure with 4,000 - 5,000 cfs capacity. The project also includes beneficial use of all earthen materials excavated during project construction to create about 49 acres of marsh in shallow open water within the project area. The feasibility and benefits of outfall management features, including coordinated operation of the proposed diversion and existing flood gates, would be evaluated during Phase One.

Project Benefits: The project would benefit over 18,000 acres of brackish and intermediate marsh and open water. Approximately 1,609 acres of marsh would be created/protected over the 20-year project life.

Project Costs: The total fully funded cost for the project is $ 53,184,577.

Preparers of Fact Sheet:
Kenneth Teague, EPA, (214) 665-6687, Teague.Kenneth@epa.gov
Rachel Sweeney, NMFS, (225) 389-0508, rachel.sweeney@noaa.gov
Bren Haase, NMFS, (225) 389-0508, bren.haase@noaa.gov
Shannon Haynes, LDNR, (225) 342-9424, ShannonH@dnr.state.la.us

Violet Siphon Enlargement (PPL16 Project Candidate)

Siphon *

Project Boundary

* denotes proposed features

0.4 0 0.4 Kilometers

0.4 0 0.4 Miles

Scale 1:104,000

Map ID: USGS-NWRC 2006-11-0463
Map Date: June 27, 2006

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:
2005 Digital Orthophoto Quarter Quadrangle

Project Name: Breton Landbridge Marsh Restoration

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

Project Location: Region 2, Breton Basin, Plaquemines Parish, Caernarvon mapping unit, between MRGO and the Mississippi River.

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

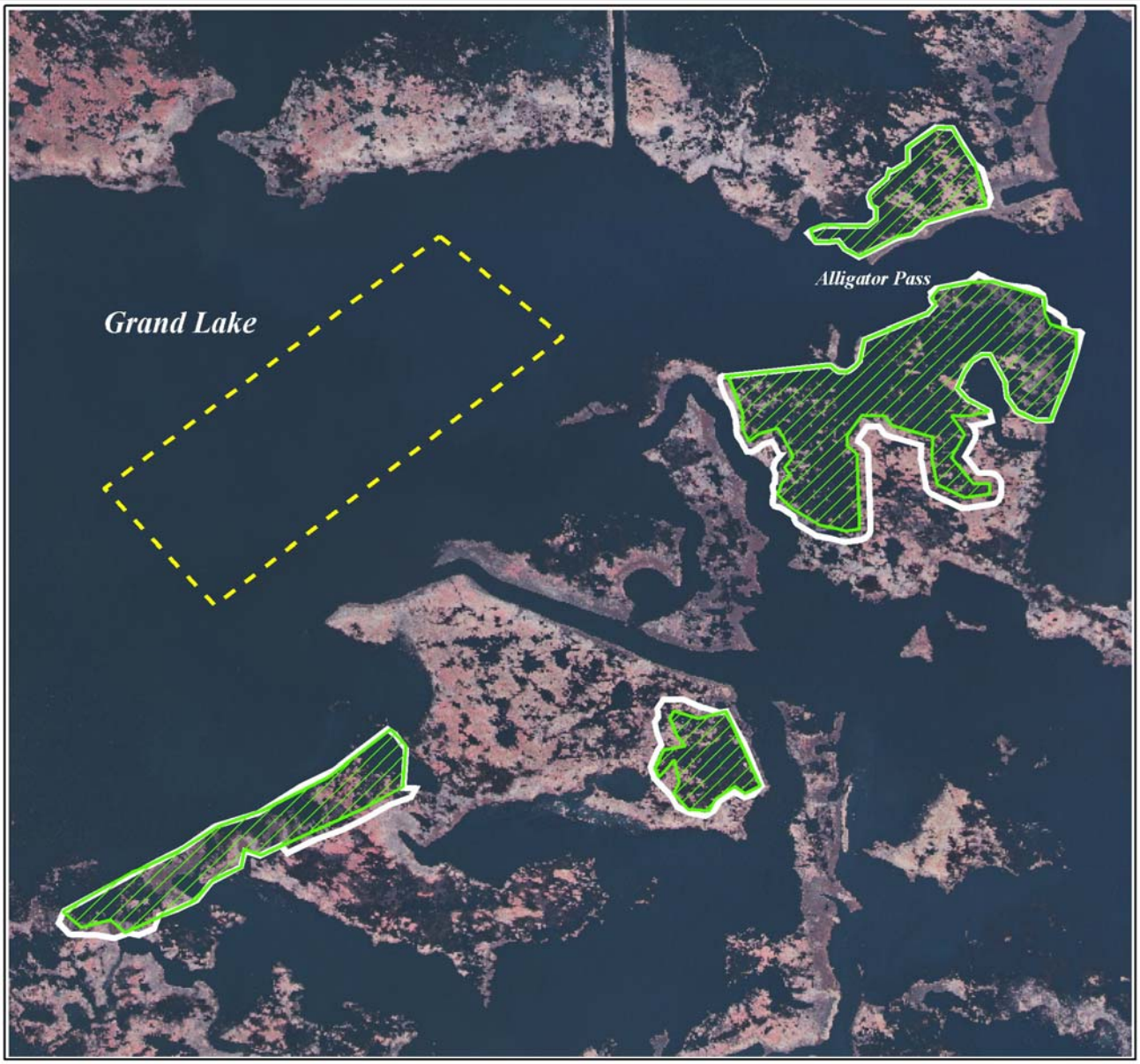
Goals: The goal of this project is to maintain the landbridge between the Bayou Terre aux Boeufs and River aux Chenes ridges and restore critical wetlands destroyed by Hurricane Katrina.

Proposed Solution: Sediments will be hydraulically dredged from a 282-acre borrow area in Grand Lake and pumped via pipeline to create approximately 356 acres of marsh in the project area. Containment dikes will be constructed as necessary (approximately 94,000 LF), mainly in those areas where created marsh would be directly exposed to a large body of water (ie., lake or bayou). The containment dikes would be built two feet above the established healthy marsh within the project area. At present, the proposed design is to place the dredged material to a fill height of +2.0 NAVD 88. Final target elevations will depend on the results of geotechnical investigations in the borrow and fill sites. Dewatering and compaction of dredged sediments should produce marsh elevations conducive to the establishment of emergent marsh within the intertidal range.

Project Benefits: The project would help retain the landbridge between Bayou Terre aux Boeufs and River aux Chenes and create/ restore approximately 176 acres of marsh over the 20-year project life.

Project Costs: The total fully funded cost for the project is $ 13,566,683.

Preparer of Fact Sheet:
Robert Dubois, USFWS, (337) 291-3127, robert_dubois@fws.gov



Breton Landbridge Marsh Restoration (PPL16 Project Candidate)

N

Louisiana

Project Location

Marsh Creation *

Borrow Site *

Project Boundary

* denotes proposed features

0.25 0 0.25 0.5 Kilometers

0.25 0 0.25 0.5 Miles

Scale 1:25,500

Map ID: USGS-NWRC 2006-11-0464
Map Date: June 29, 2006

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:
2005 Digital Orthophoto Quater Quadrangle

Project Name: Jean Lafitte Shoreline Protection Project

Coast 2050 Strategy: Maintain shoreline integrity along lakes in the Cataouatche/Salvador Mapping unit.

Project Location: The project is located in Region 2, in the Barataria Basin. The project site is located along the southeast portion of Lake Salvador at the Barataria Preserve of Jean Lafitte National Historical Park and Preserve, and lands south of Bayou Villars in Jefferson Parish, LA.

Problem: The project area has lost more than 650 acres of wetlands along the southeast shore of Lake Salvador over the last fifty years. Since the late 1950's, annual shoreline erosion rates at the Barataria Preserve averaged 21 linear feet with a high exceeding 90 feet. Since 1958, the shoreline has retreated approximately 2,400 feet (55 feet per year) at the southern end of the Pipeline Canal. Powerful winds and storm surge caused by Hurricanes Katrina and Rita accelerated shoreline retreat and wetland loss. Within the project area, these storms caused 100 feet of shoreline retreat in places and the interior marsh was compacted or torn apart creating open water ponds. The high loss of wetlands that has occurred could also be partially responsible for flooding of the neighboring communities of Crown Point, Jean Lafitte, and Barataria. Shoreline stabilization and marsh restoration would protect natural resources, communities and infrastructure.

Mapped land loss by the USACE indicates sustained high shoreline erosion rates for this reach of Lake Salvador. Average shoreline retreat in the project area is 21 ft/year for the period 1930 to 2001. In the northern portion of the project area, Lake Salvador has nearly broken through to the Bayou Segnette Waterway, leaving only a thin portion of the spoil bank, treeless in some places. Maximum retreat nearer the mouth of Bayou Villars for the same 71 year period is 38 ft/year. Shoreline retreat appears to be accelerating with rates for the 1983 to 1990 period as great as 89 ft/year. Shoreline retreat along the southern bank of Bayou Villars is nearing the GIWW.

Goals: Stop shoreline erosion along 48,000 linear feet of shoreline, along the southeast portion of Lake Salvador at the Barataria Preserve of Jean Lafitte National Historical Park and Preserve and lands south of Bayou Villars, in Jefferson Parish.

Proposed Solution: Construct approximately 48,000 linear feet of rock shoreline dike on shore in two segments, north and south of Bayou Villars, Area A to the North ≈15,000 feet, and Area B to the south ≈ 33,800 feet. An estimated 168,000 tons of rock would be installed with a 3-foot crown width and at an elevation of +3.0 feet NAVD. The dike would include a berm 2-feet thick and 5 feet wide.

Project Benefits: Approximately 462 acres (Area A = 90 acres, Area B = 372 acres) of fresh marsh would be protected from erosion over the 20-year project life.

Project Costs: The total fully funded cost for the project is $ 29,836,540.

Preparers of Fact Sheet:
Melanie Goodman, Corps of Engineers, (504) 862-1940, melanie.l.goodman@mvn02.usace.ary.mil
John Petitbon, Corps of Engineers, (504) 862-2732, john.b.petitbon@mvn02.usace.army.mil

Jean Lafitte Shoreline Protection
(PPL16 Project Candidate)

Shoreline Protection *

Project Boundary

* denotes proposed features

1 0 1 Kilometers

1 0 1 Miles

Scale 1:70,000

Map ID: USGS-NWRC 2006-11-0435
Map Date: June 20, 2006

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:
2005 Digital Orthophoto Quarter Quadrangles

Project Name: Grand Liard Marsh and Ridge Restoration

Coast 2050 Strategy: Dedicated dredging to create, restore or protect wetlands, off-shore and Riverine Sand and sediment delivery systems, Vegetative Plantings.

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

Problem: The Bastion Bay and Grand Liard mapping units were historically structured by a series of north south bayous and associated ridges (i.e., Bayou Long, Dry Cypress Bayou). Currently, the majority of these bayou ridges have eroded. The Grand Liard ridge is the most prominent remaining ridge, and separates the open bays of the Bastian Bay and Grand Liard mapping units. Land loss projections suggest that the remaining bayou bank wetlands will be completely converted to open water by 2050. The USGS land loss rate for 1988 to 2005 is 4.0%/yr. The rate of subsidence for the Grand Liard mapping unit is 2.1 to 3.5 ft/century.

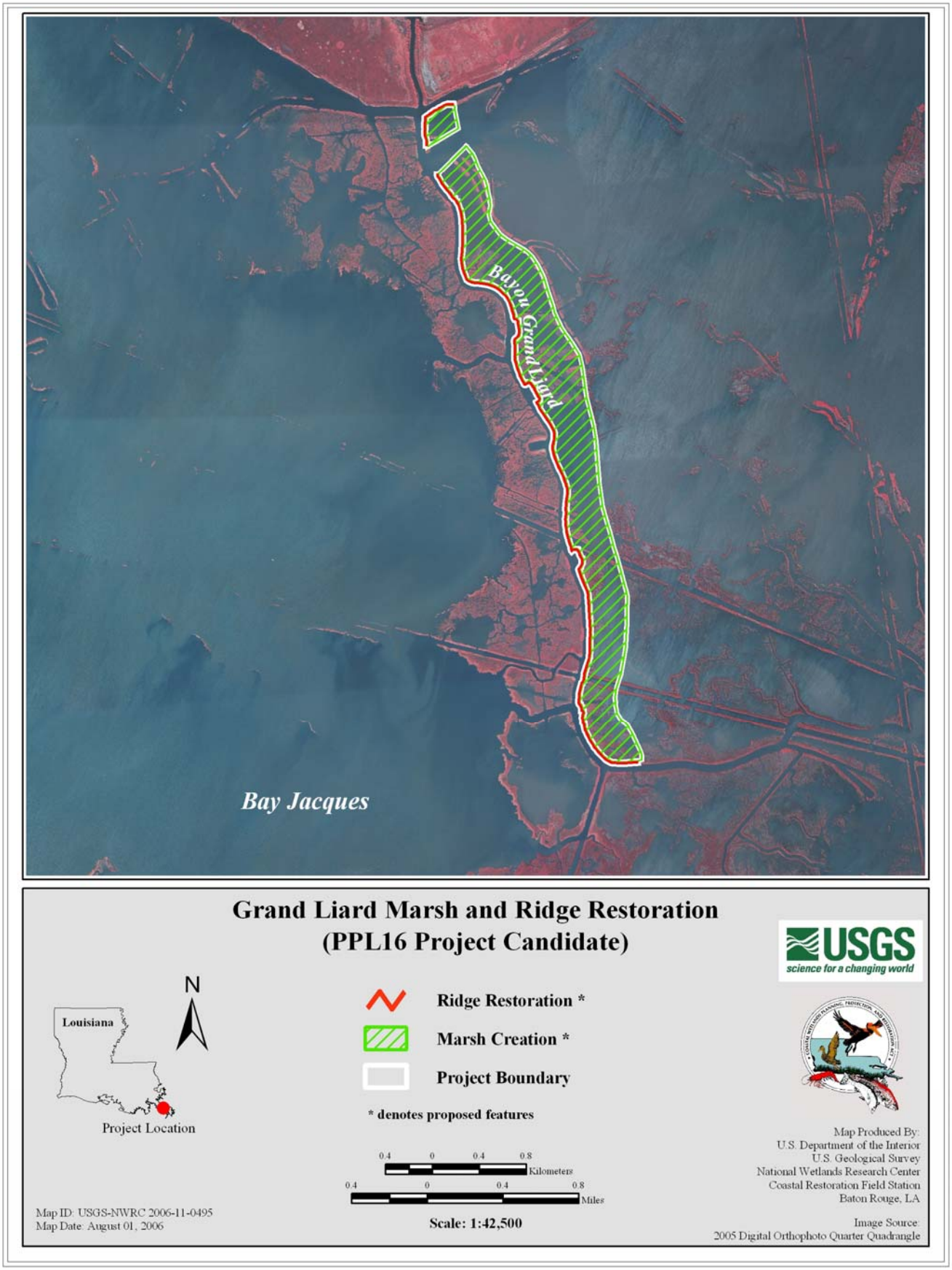
Goals: Project goals include 1) creating/nourishing marsh and associated edge habitat for aquatic species through pipeline sediment delivery, and 2) restoring the Grand Liard ridge to reduce wave and tidal setup and provide fallout habitat for neotropical migrant birds. Specific phase 0 goals include creating 342 acres saline marsh, nourishing 140 acres of saline marsh and constructing about 20,000 linear feet (LF) or 31 acres of maritime ridge habitat.

Proposed Solution: Approximately 342 acres of marsh would be created and 140 acres nourished with an initial fill elevation of +2.76 ft NAVD88. Sediment would be dredged from the Mississippi River and placed in confined disposal areas east of Grand Liard Bayou. A ridge feature would be constructed on the east bank of Grand Liard Bayou with sediment dredged from the bayou. The ridge would have a 20-foot crown width at +6 feet NAVD. The marsh creation area would be planted with plugs of smooth cordgrass. The ridge would be planted with appropriate woody vegetation to be coordinated with NRCS.

Project Benefits: The project would benefit about 513 acres of saline marsh, natural levee ridge, and open water. Approximately 254 acres of marsh and 31 acres of natural levee ridge (285 total net acres) would be created/protected over the 20-year project life.

Project Costs: The total fully funded cost for the project is $ 27,837,237.

Preparer of Fact Sheet:
Bren Haase, National Marine Fisheries Service, (225) 389-0508, ext. 204,
bren.haase@noaa.gov


Bayou Grand Liard
Bay Jacques
Grand Liard Marsh and Ridge Restoration
(PPL16 Project Candidate)
USGS
science for a changing world
N
Louisiana
Project Location
Ridge Restoration *
Marsh Creation *
Project Boundary
* denotes proposed features
0.4 0 0.4 0.8
Kilometers
0.4 0 0.4 0.8
Miles
Scale: 1:42,500
Map ID: USGS-NWRC 2006-11-0495
Map Date: August 01, 2006
Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Baton Rouge, LA
Image Source:
2005 Digital Orthophoto Quarter Quadrangle

Project Name: Madison Bay Marsh Creation and Terracing

Coast 2050 Strategy: Terracing and dedicated dredging to create, restore, or protect wetlands, dedicated delivery and/or beneficial use of sediment for marsh building by any feasible means.

Project Location: Region 3, Terrebonne Basin, Montegut Mapping Unit, Madison Bay, north of Madison Canal.

Problem: The Madison Bay area has experienced tremendous wetland loss due to a variety of forces including subsidence, salt water intrusion, a lack of sediment supply, and oil and gas activities. The loss of these brackish marshes has exposed significant infrastructure to open water conditions. The loss rate for the area is –2.9%/yr based on USGS 1978 to 2005 data. The Montegut mapping unit has a 1.1 to 2.0 ft/century subsidence rate. With high wetland loss in the vicinity, the Montegut levee has become more susceptible to breaching which occurred during Hurricanes Lili and Rita in 2002 and 2005, respectively.

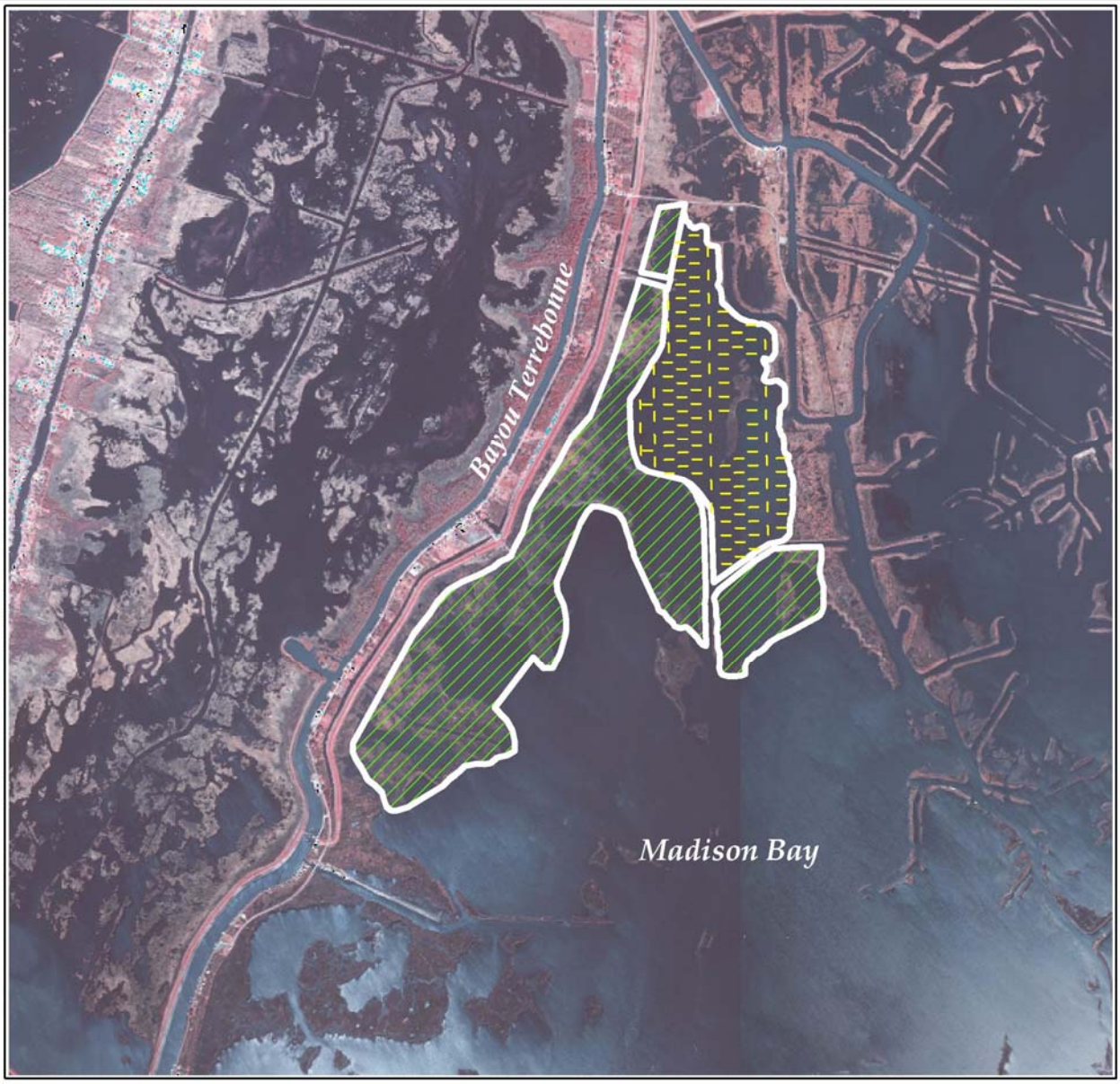
Goals: Project goals include creating and nourishing marsh and associated edge habitat, and promoting conditions conducive to the growth of submerged aquatic vegetation. Secondarily, proposed terraces will reduce the wave erosion of created and existing marshes along the fringes of Madison Bay.

Proposed Solution: Approximately 417 acres of marsh would be created and 258 acres nourished with settled soil elevations of about +1.5 ft NAVD 88. Approximately 24,600 LF of terraces would be constructed to +4.0 ft NAVD88 (initial height) with a crown width of 10 ft and 1:4 side slopes and average fill height of 6 ft. Subaerial benefits of the terraces would be based on the settled elevation of +2.5 ft NAVD 88. The marsh creation area and all terraces would be planted. The marsh creation area would be planted with 4-inch containers of marshhay cordgrass and plugs of smooth cordgrass. Terraces would be planted with four rows of smooth cordgrass plugs on 7-ft spacing and two rows of marshhay cordgrass on the crown.

Project Benefits: The project would benefit about 1,019 acres of fresh marsh and open water. Approximately 372 acres of marsh would be created/protected over the 20-year project life.

Project Costs: The total fully funded cost for the project is $ 32,353,377.

Preparer of Fact Sheet:
Bren Haase, National Marine Fisheries Service, (225) 389-0508, ext. 204,
bren.haase@noaa.gov



Madison Bay Marsh Creation and Terracing Project (PPL16 Project Candidate)

USGS science for a changing world

N

Louisiana

Project Location

Terracing *

Marsh Creation *

Project Boundary *

* denotes proposed features

0.25 0 0.25 0.5 Kilometers

0.25 0 0.25 0.5 Miles

Scale 1:29,600

Map ID: USGS-NWRC 2006-11-0349
Map Date: May 31, 2006

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: West Belle Pass Barrier Headland Restoration Project

Coast 2050 Strategy: Restore/maintain barrier islands, dedicated dredging to create, restore, or protect wetlands.

Project Location: Region 3, Terrebonne Basin, Lafourche Parish, along the western most extent of the Chenier Caminada headland west of Belle Pass.

Problem: The Gulf shoreline near West Belle Pass is eroding at an approximate rate of 55 feet per year. Before last year's hurricanes, this headland provided one of the last remnants of barrier shoreline in Timbalier Bay, which also helps to protect Port Fourchon from storm surge and increased tidal prism entering from the Gulf. As this headland deteriorates, a first line of defense becomes obsolete and interior marshes are subject to greater erosion.

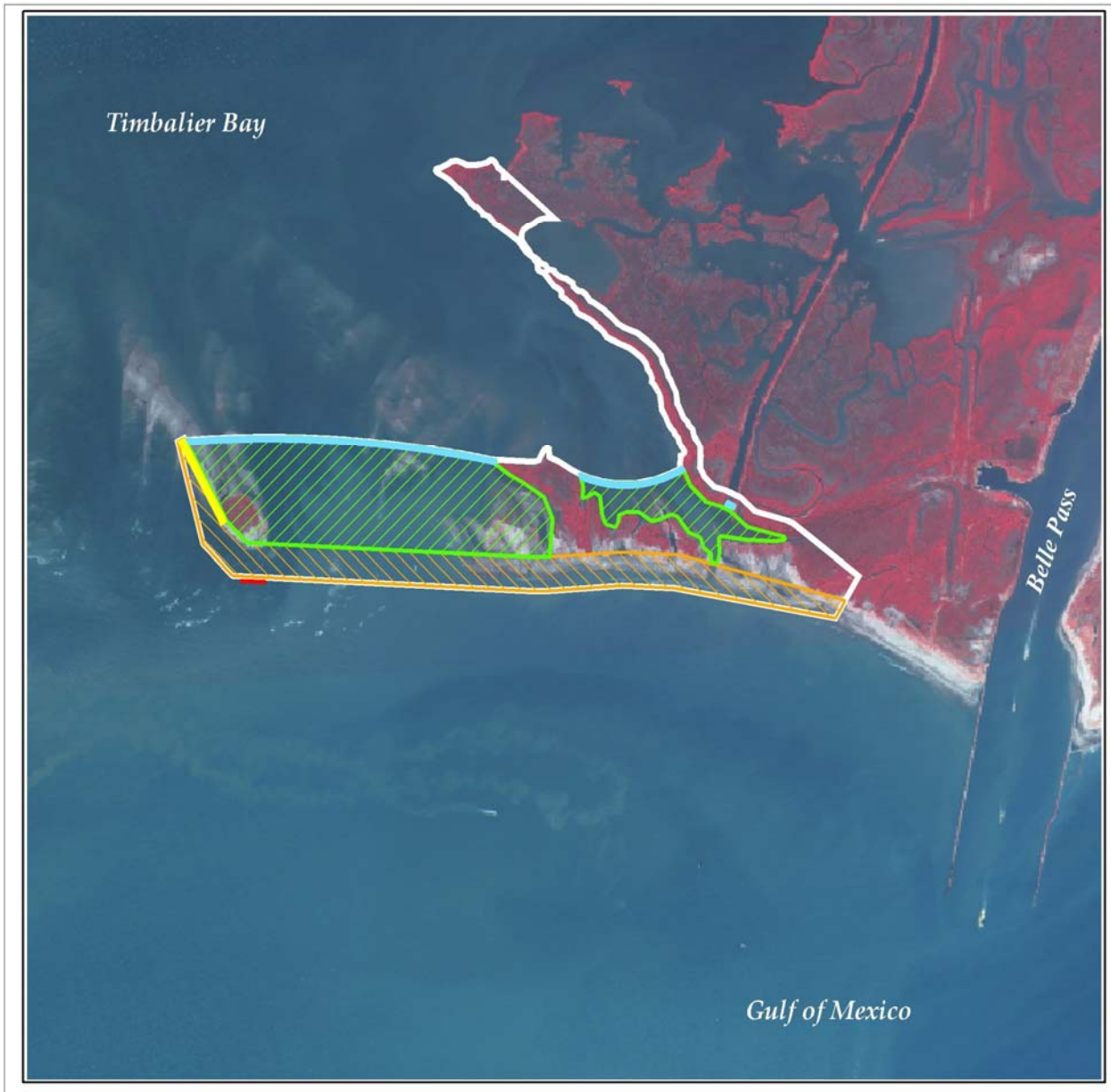
Goals: The goals of this project are to reestablish the eroded West Belle Pass headland via dune and marsh creation and to prevent increased erosion along the adjacent bay shoreline.

Proposed Solution: The project will create a continuous, substantial headland and marsh platform over approximately a 9,300-foot lineal distance. The project will construct 120 acres of beach/dune habitat and 150 acres of marsh habitat. The berm/dune crest width of the constructed island is a constant 275 feet with a post construction elevation of +6 feet NAVD. A 1V:45H construction slope has been adopted for the front and back of the beach/dune feature. Approximately 1.6 MCY of sand material is estimated for the berm/dune component. In addition, a back island marsh platform will be constructed to an elevation of +2.6 feet NAVD, with a final intertidal elevation of +1.5 feet NAVD. Approximately 850,000 CY of material is estimated for the marsh platform component. Sand fencing will be installed concurrent with dune construction and vegetative plantings of both the dune and marsh platform will occur between 1 to 3 years post construction.

Project Benefits: The project would benefit about 389 acres of dune, beach, and saline marsh. Approximately 299 acres of marsh would be created/protected over the 20-year project life.

Project Costs: The total fully funded cost for the project is $ 32,563,747.

Preparers of Fact Sheet:
Cheryl Brodnax, NOAA Fisheries, (225) 578-7923, cheryl.brodnax@noaa.gov
Patrick Williams, NOAA Fisheries, (225) 389-0508, patrick.williams@noaa.gov



West Belle Pass Barrier Headland Restoration Project

USGS science for a changing world

N

Louisiana

Project Location

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

* denotes proposed features

0.25 0 0.25 0.5 Kilometers

0.25 0 0.25 0.5 Miles

Scale 1:25,000

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

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

Image Source:
2005 Digital Orthophoto Quarter Quadrangle

Project Name: Deer Island Pass Sediment Delivery

Coast 2050 Strategy: Increase deltaic land building where feasible.

Project Location: Region 3, Atchafalaya Basin, St. Mary Parish, along the east bank of the Lower Atchafalaya River (LAR) and in the northeastern portion of Atchafalaya Bay.

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

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

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

Project Benefits: The project would benefit about 1,202 acres of fresh marsh and open water. Approximately 216 acres of marsh would be created/protected over the 20-year project life.

Project Costs: The total fully funded cost for the project is $ 8,775,058.

Preparer of Fact Sheet:
Kevin Roy, U.S. Fish and Wildlife Service, 337-291-3120, kevin_roy@fws.gov

Deer Island Pass Sediment Delivery (PPL16 Candidate Project)

Marsh Creation *

Sediment Delivery Channel *

Project Boundary

* denotes proposed features

0.6 0 0.6 1.2 Kilometers

0.5 0 0.5 1 Miles

Scale 1:47,000

USGS science for a changing world

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

Image Source:
2005 Digital Orthophoto Quarter Quadrangle

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

Project Name: Vermilion Bay Shoreline Protection Project

Coast 2050 Strategy: Region 3, #12; Maintain shoreline integrity and stabilize critical areas of Vermilion, East, and West Cote Blanche, Atchafalaya, Calliou, Terrebonne, and Timbalier Bay systems, including the Gulf shoreline.

Project Location: Region 3, Teche/Vermilion, Iberia Parish, North shore of Vermilion to Weeks Bay, extending 1.5 miles west, to 5 miles east of Avery Canal.

Problem: Approximately 5 miles of shoreline along the northern Vermilion and Weeks Bays remain vulnerable to shoreline erosion. Although previous planting projects have been highly successful in stabilizing shoreline erosion along the north shore of Vermilion Bay, a one-mile stretch of that shoreline, just east of Avery Canal, has eroded beyond the natural bay rim and has breached into the organic interior. As a result, the bay rim will require reconstruction using some form of hardened structure. The remaining shoreline can be maintained with vegetative plantings. However, because of lessons learned by prior vegetative plantings and potentially degraded bay rim soils at points along this shoreline, a more intensive planting regime will be undertaken to ensure success.

Goals: The project goal is to abate wind-driven wave erosion along the north Vermilion Bay shoreline. The project will repair a breach in the shoreline which threatens to undermine a much broader area of interior marsh. An additional 5 miles of shoreline would be stabilized through a series of intensive, low-cost, vegetative plantings and would complete the restoration of over 10 miles of the north Vermilion Bay shoreline.

Proposed Solutions: The project calls for reestablishing the bay rim function by constructing approximately 9,330 linear feet of rock riprap to reconnect the solid bay rim on either side of the breach. Additionally, an intensive 5-year vegetation planting regime will be applied to the 5-mile stretch of shoreline east of Avery Canal. The first year's planting will be followed by an estimated 50%, 50%, 25%, and 10% replacement consecutively in the following four years to ensure complete coverage of the shoreline and jumpstart the mineral trapping and accretion characteristics observed in previous successful plantings in the area.

Project Benefits: The project will protect a total of 132 net acres of coastal wetlands along the Northern Vermilion Bay shoreline over the 20-year project life.

Project Costs: The total fully funded cost for the project is $ 9,407,238.

Preparers of Fact Sheet:
Troy Mallach, NRCS, (337) 291-3064, troy.mallach@la.usda.gov
Ron Boustany, NRCS, (337) 291-3067, ron.boustany@la.usda.gov

Vermilion Bay Shoreline Protection Project (PPL16)

Rock Dike *

Vegetative Planting *

Project Boundary

* denotes proposed feature

0.9 0 0.9 Kilometers

0.9 0 0.9 Miles

Scale 1:80,000

Map ID: USGS-NWRC 2006-11-0436
Map Date: August 31, 2006

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:
2005 Digital Orthophoto Quarter Quadrangles

Project Name: Southwest Louisiana Gulf Shoreline Nourishment and Protection Project

Coast 2050 Strategy: Stabilize Gulf of Mexico Shoreline in the vicinity of Rockefeller Refuge from the old Mermentau River to Dewitt Canal, and dredge fill in open water by dedicated dredging in the Gulf of Mexico.

Project Location: Region 4, Mermentau Basin, Cameron and Vermilion Parish, South of Pecan Island and Rockefeller Refuge, between Dewitt Canal and Constance Lake.

Problem: The Gulf of Mexico shoreline in the vicinity of Rockefeller Refuge is reportedly eroding at an estimated rate of 35 to 39 feet per year (Coast 2050 Report and Rockefeller Refuge Gulf Shoreline Stabilization Project (ME-18) respectively). Land loss maps prepared for the project area by U.S.G.S. indicate that the shoreline is eroding at a variable rate from 12 feet per year near DeWitt Canal, to 57 feet per year near the east side of Constance Lake.

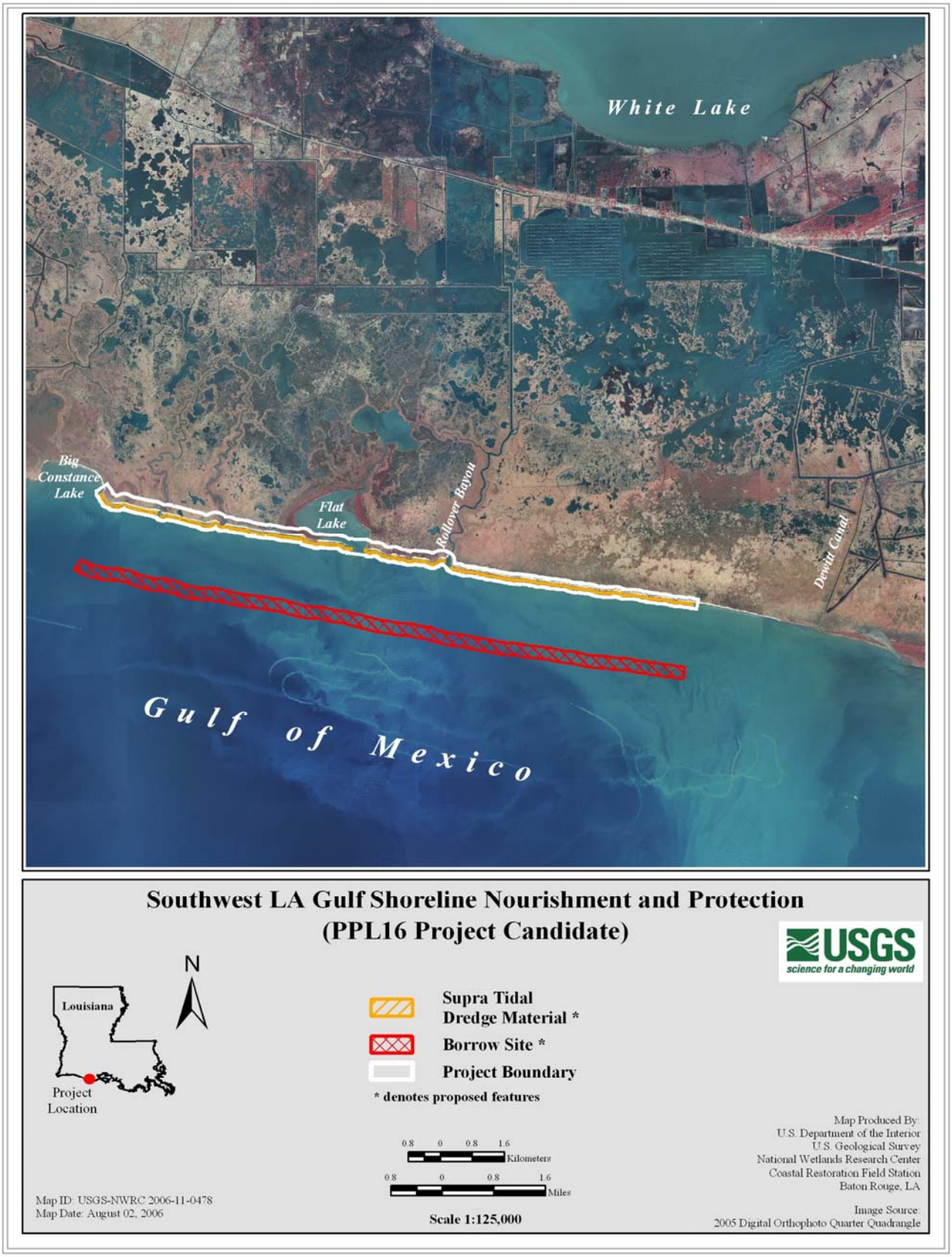
Goals: The goal of the proposed project is to nourish and protect approximately 685 acres and create 203 acres of marsh along the Gulf shoreline by the end of the 20-year project life.

Proposed Solution: Deposit approximately 4.9 million cubic yards of sediment parallel to approximately 47,900 linear feet of Gulf shoreline between Dewitt Canal and Constance Lake to create approximately 421 acres of marsh platform, mud flat and shallow water, extending approximately 384 feet seaward. The marsh platform would be pumped to between 0.0 and +2.5 feet mean low gulf in an average of 2.5 feet water. Approximately 685 acres of existing, and 203 acres of created shoreline would be protected over 20 years by redepositing approximately 1.1 million cubic yards every four years after initial construction. Sediment would be acquired by dedicated dredging approximately one mile offshore in the Gulf of Mexico.

Project Benefits: The project would benefit approximately 1,244 acres of saline and brackish marsh and open Gulf water. Approximately 888 acres of marsh would be protected/created over the 20-year project life.

Project Cost: The total fully funded cost for the project is $ 36,922,487.

Preparers of Fact Sheet:
Melanie Goodman, Corps of Engineers, (504) 862-1940, melanie.l.goodman@mvn02.usace.ary.mil
John Petitbon, Corps of Engineers, (504) 862-2732, john.b.petitbon@mvn02.usace.army.mil


White Lake
Big Constance Lake
Flat Lake
Rollover Bayou
Dewitt Canal
Gulf of Mexico
Southwest LA Gulf Shoreline Nourishment and Protection
(PPL16 Project Candidate)
USGS
science for a changing world
N
Louisiana
Project Location
Supra Tidal Dredge Material *
Borrow Site *
Project Boundary
* denotes proposed features
0.8 0 0.8 1.6
Kilometers
0.8 0 0.8 1.6
Miles
Scale 1:125,000
Map ID: USGS-NWRC 2006-11-0478
Map Date: August 02, 2006
Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Baton Rouge, LA
Image Source:
2005 Digital Orthophoto Quarter Quadrangle

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 Vegetation Demonstration Project

Coast 2050 Strategies: Coastwide Common Ecosystem Strategy; Restore/Maintain Barrier Islands, Headlands, Shorelands; Region 2 Mapping Unit Strategy, # 17 Caminada Bay, Maintain Shoreline Integrity (e.g. vegetative plantings of mangroves or marsh); and 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 planted over 150,000 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, not only for day-to-day coastal erosion, but also for defense from 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 $ 919,599.

Preparers of Fact Sheet:
Patricia A. Taylor, P.E. EPA Region 6, (214) 665-6403, taylor.patricia-a@epa.gov
(with major assistance from Dr. Mark Hester)

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

Coast 2050 Strategy: Coastwide Common Strategy; Dedicated dredging for wetland creation.

Project Locations: Houma Navigation Channel and locations in Barataria Basin and Penchant Basin.

Problems: 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 exposed to prolonged, flooding for longer than normal duration. Regeneration of new trees cannot occur under these flooded conditions. 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 and natural regeneration of cypress trees and how that would affect the ability of those cypress trees to naturally regenerate. Several methods of planting small cypress trees in the newly deposited dredged material would be tested along with their survival rates.

Proposed Solution: Containment dikes at each of three study sites will be constructed to provide contiguous 3-acre blocks and 1 control block (9 acres) with similar pre-project hydrology. Blocks will be filled with 1ft, 2ft or 3ft of sediment. Certain physiological and morphological measurements would be preformed pre- and post-sediment placement on selected mature trees within each plot to document the effects of sediment placement of differing depths on mature trees. Also, a detailed soil analysis will be carried out within each plot. Areas within these units with very little tree cover would be used to test three methods of tree planting. Selected areas with mature trees will be designated to determine the effects of the addition of soil to natural regeneration.

Project Benefits: Information gathered with this project would benefit non-sustainable hydraulically altered cypress swamps. The project would also answer questions asked 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 $ 1,474,785.

Preparer of Fact Sheet:
Robert Dubois (337)291-3127, U.S. Fish and Wildlife Service, robert_dubois@fws.gov

Project Name: Sediment Containment System for Marsh Creation Demonstration Project

Coast 2050 Strategy: Management of diversion outfall for wetland benefits, dedicated dredging to create restore or protect wetlands.

Project Location: Coastwide

Problem: Small and medium freshwater diversions that flow into broad areas and small dredge projects require confinement and trapping features to form marsh because the materials entering the area are often too dilute or fine to result in any appreciable accumulation. A method to delineate smaller areas to concentrate sediments flowing across an area would improve suspended sediment retention efficiency and allow accumulations to occur within a more timely and cost-effective manner. A sediment trapping mechanism would also allow for taking advantage of finer materials that would otherwise largely flow through the target area or require costly construction of some form of containment.

Goals: The overall goal of the project is to demonstrate the effectiveness of a sediment trapping system to strategically define areas of accumulation and improve the efficiency of passive sediment retention in small and medium freshwater diversions as well as mechanized introduction of fluid material to create marsh.

Proposed Solution: The project will demonstrate the effectiveness of a sediment trapping system designed for dredge containment to facilitate both sediment retention and accumulation in freshwater diversions that are located in broad areas where sediments tend to dissipate, and to demonstrate the ability of the system to perform in small dredge applications. The project will demonstrate that by isolating areas where accumulation can be concentrated, accretion rates will be greatly enhanced and speed up marsh creation.

Project Benefits: The project will benefit any area in coastal Louisiana by facilitating containment where suspended sediment load is adequate for potential marsh development but retention is low due to broad open water expanse or channelization. The project will also benefit small dredge projects by providing a cost-effective alternative to earthen containment, particularly in areas where construction of earthen containment may be problematic (e.g. flow lines and poor soils).

Project Costs: The total fully funded cost for the project is $ 1,132,576.

Preparer of Fact Sheet:
Ron Boustany, NRCS (337) 291-3067, ron.boustany@la.usda.gov

V. PROJECT SELECTION

On October 18, 2006, the CWPPRA Task Force made its selection for the 16th PPL. The CWPPRA Task Force selection for the 16th PPL is shown in Table 6.

Table 6: 16th 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	Fu;;u FImded Phase II/Increment I Total Cost (3 yr. C&QRM&M)	Cumulative Phase II/Increment I	Average Annual Habitat Units (AAHUs)
PO-34	Alligator Bend Marsh Restoration & Shoreline Protection	SP	COE/ NRCS	$19,620,813	$1,660,985	$1,660,985	$17,959,828	$17,959,828	$17,290,711	$17,290,711	166
ME-24	Southwest Louisiana Gulf Shoreline Nourishment & Protection	SP	COE	$36,922,487	$1,266,842	$2,927,827	$35,655,645	$53,615,473	$15,113,751	$32,404,462	311
TE-51	Madison Bay Marsh Creation & Terracing	MC	NMFS	$32,353,377	$3,002,170	$5,929,997	$29,351,207	$82,966,680	$28,867,088	$61,271,550	242
TE-52	West Belle Pass Barrier Headland Restoration	MC	NMFS	$32,563,747	$2,694,363	$8,624,360	$29,869,384	$112,836,064	$28,940,411	$90,211,961	180
	TOTAL			$121,460,424		$8,624,360		$112,836,064		$90,211,961	899
Demonstration Project											
TE-53	Enhancement of Barrier Island Vegetation Demo	VP	EPA	$919,599	$341,030		$578,569				N/A
	TOTAL			$122,380,023		$8,965,390		$113,414,633		$90,211,961	

Project Physical Type:
BI=Barrier Island
FD=Freshwater Diversion
HC=Herbivory Control
HR=Hydrologic Restoration
MC=Marsh Creation
MM=Marsh Management
OM=Outfall Management
SD=Sediment Diversion
SP=Shoreline Protection
ST=Sediment Trapping
TR=Terracing
VP=Vegetative Planting

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: Alligator Bend Marsh Restoration and Shoreline Protection

Coast 2050 Strategy: Regional – Maintain East Orleans Landbridge by marsh creation and shoreline protection. Regional – Maintain shoreline integrity of Lake Borgne.

Project Location: Region 1, Pontchartrain Basin, Orleans Parish, along the East Orleans Landbridge on the northwest shoreline of Lake Borgne. The project area is located between the Chef Pass, the Gulf Intracoastal Waterway, Unknown Pass, and Lake Borgne.

Problem: The landfall of hurricane Katrina in southeast Louisiana destroyed thousands of acres of marsh and other coastal habitats in the Lake Pontchartrain basin. Along the shorelines of Lake Borgne the storm created breaches between the lake and interior marshes and in some cases removed large expanses of wetlands. Loss of wetlands in the Alligator Bend area has created more than 1,000 acres of open water in a complex that formerly supported relatively stable brackish marshes. Post-storm aerial photographs show the most significant losses occurred along the flanks of Bayou Platte. The current landscape configuration has left a large area of open water between eroding shorelines on Lake Borgne and along the GIWW. Continued shoreline erosion and future storms could create a direct path of open water connecting the GIWW and Lake Borgne and threaten the integrity of this important landbridge.

Goals: The purpose of the project is to restore critical wetlands destroyed by hurricane Katrina and to prevent breaching of degraded marshes between the GIWW and Lake Borgne.

Proposed Solution: Two restoration techniques will be employed for this project – dedicated dredging for marsh creation and vegetation planting for shoreline protection. A hydraulic dredge would be used to mine material from a nearby borrow area and pump the material into two sites within the project area. The dredge would pump 2,988,700 cubic yards into the area to restore and nourish brackish marsh in a 410-acre portion of the project. The restored marsh area would be planted with smooth cordgrass to jumpstart colonization of the marsh plant community in the restored area. The second technique to be used in this project is vegetation planting along 38,140 feet of the Lake Borgne shoreline (protecting an 84 acre portion of the project area).

Project Benefits: The project would benefit about 494 acres of fresh marsh and open water. Approximately 330 acres of marsh would be created/protected over the 20-year project life.

Project Costs: The total fully funded cost for the project is $ 19,620,813.

Preparers of Fact Sheet:
Gregory Miller, Corps of Engineers, (504) 862-2310, Gregory.B.Miller@usace.army.mil
Marty Floyd, NRCS, (318) 473-7690, marty.floyd@la.usda.gov

Alligator Bend Marsh Restoration and Shoreline Protection (PPL Project Candidate)

- Shoreline Protection *
- Containment Dike *
- Marsh Creation *
- Marsh Nourishment *
- Project Boundary

* denotes proposed features

0.4 0 0.4 Kilometers

0.4 0 0.4 Miles

Scale 1:51,000

USGS science for a changing world

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

Image Source:
2005 Digital Orthophoto Quarter Quadrangle

Map ID: USGS-NWRC 2006-11-0374
Map Date: June 26, 2006

Project Name: Southwest Louisiana Gulf Shoreline Nourishment and Protection Project

Coast 2050 Strategy: Stabilize Gulf of Mexico Shoreline in the vicinity of Rockefeller Refuge from the old Mermentau River to Dewitt Canal, and dredge fill in open water by dedicated dredging in the Gulf of Mexico.

Project Location: Region 4, Mermentau Basin, Cameron and Vermilion Parish, South of Pecan Island and Rockefeller Refuge, between Dewitt Canal and Constance Lake.

Problem: The Gulf of Mexico shoreline in the vicinity of Rockefeller Refuge is reportedly eroding at an estimated rate of 35 to 39 feet per year (Coast 2050 Report and Rockefeller Refuge Gulf Shoreline Stabilization Project (ME-18) respectively). Land loss maps prepared for the project area by U.S.G.S. indicate that the shoreline is eroding at a variable rate from 12 feet per year near DeWitt Canal, to 57 feet per year near the east side of Constance Lake.

Goals: The goal of the proposed project is to nourish and protect approximately 685 acres and create 203 acres of marsh along the Gulf shoreline by the end of the 20-year project life.

Proposed Solution: Deposit approximately 4.9 million cubic yards of sediment parallel to approximately 47,900 linear feet of Gulf shoreline between Dewitt Canal and Constance Lake to create approximately 421 acres of marsh platform, mud flat and shallow water, extending approximately 384 feet seaward. The marsh platform would be pumped to between 0.0 and +2.5 feet mean low gulf in an average of 2.5 feet water. Approximately 685 acres of existing, and 203 acres of created shoreline would be protected over 20 years by redepositing approximately 1.1 million cubic yards every four years after initial construction. Sediment would be acquired by dedicated dredging approximately one mile offshore in the Gulf of Mexico.

Project Benefits: The project would benefit approximately 1,244 acres of saline and brackish marsh and open Gulf water. Approximately 888 acres of marsh would be protected/created over the 20-year project life.

Project Cost: The total fully funded cost for the project is $ 36,922,487.

Preparers of Fact Sheet:
Melanie Goodman, Corps of Engineers, (504) 862-1940, melanie.l.goodman@mvn02.usace.ary.mil
John Petitbon, Corps of Engineers, (504) 862-2732, john.b.petitbon@mvn02.usace.army.mil

Southwest LA Gulf Shoreline Nourishment and Protection (PPL16 Project Candidate)

USGS science for a changing world

Supra Tidal Dredge Material *

Borrow Site *

Project Boundary

* denotes proposed features

0.8 0 0.8 1.6 Kilometers

0.8 0 0.8 1.6 Miles

Scale 1:125,000

Map ID: USGS-NWRC 2006-11-0478
Map Date: August 02, 2006

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

Image Source:
2005 Digital Orthophoto Quarter Quadrangle

Project Name: Madison Bay Marsh Creation and Terracing

Coast 2050 Strategy: Terracing and dedicated dredging to create, restore, or protect wetlands, dedicated delivery and/or beneficial use of sediment for marsh building by any feasible means.

Project Location: Region 3, Terrebonne Basin, Montegut Mapping Unit, Madison Bay, north of Madison Canal.

Problem: The Madison Bay area has experienced tremendous wetland loss due to a variety of forces including subsidence, salt water intrusion, a lack of sediment supply, and oil and gas activities. The loss of these brackish marshes has exposed significant infrastructure to open water conditions. The loss rate for the area is –2.9%/yr based on USGS 1978 to 2005 data. The Montegut mapping unit has a 1.1 to 2.0 ft/century subsidence rate. With high wetland loss in the vicinity, the Montegut levee has become more susceptible to breaching which occurred during Hurricanes Lili and Rita in 2002 and 2005, respectively.

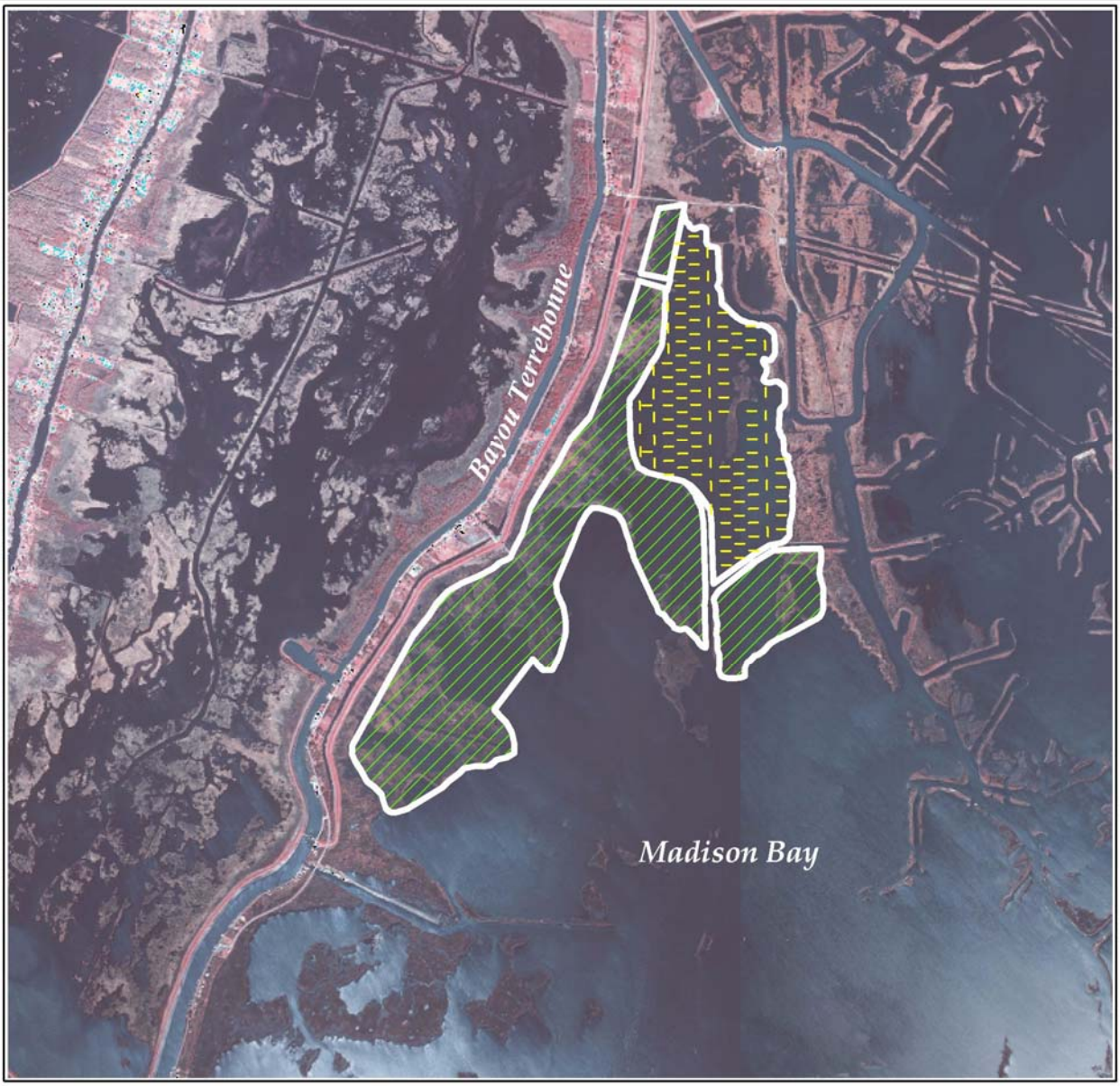
Goals: Project goals include creating and nourishing marsh and associated edge habitat, and promoting conditions conducive to the growth of submerged aquatic vegetation. Secondarily, proposed terraces will reduce the wave erosion of created and existing marshes along the fringes of Madison Bay.

Proposed Solution: Approximately 417 acres of marsh would be created and 258 acres nourished with settled soil elevations of about +1.5 ft NAVD 88. Approximately 24,600 LF of terraces would be constructed to +4.0 ft NAVD88 (initial height) with a crown width of 10 ft and 1:4 side slopes and average fill height of 6 ft. Subaerial benefits of the terraces would be based on the settled elevation of +2.5 ft NAVD 88. The marsh creation area and all terraces would be planted. The marsh creation area would be planted with 4-inch containers of marshhay cordgrass and plugs of smooth cordgrass. Terraces would be planted with four rows of smooth cordgrass plugs on 7-ft spacing and two rows of marshhay cordgrass on the crown.

Project Benefits: The project would benefit about 1,019 acres of fresh marsh and open water. Approximately 372 acres of marsh would be created/protected over the 20-year project life.

Project Costs: The total fully funded cost for the project is $ 32,353,377.

Preparer of Fact Sheet:
Bren Haase, National Marine Fisheries Service, (225) 389-0508, ext. 204, bren.haase@noaa.gov



Madison Bay Marsh Creation and Terracing Project (PPL16 Project Candidate)

USGS science for a changing world

N

Louisiana

Project Location

Terracing *

Marsh Creation *

Project Boundary *

* denotes proposed features

0.25 0 0.25 0.5 Kilometers

0.25 0 0.25 0.5 Miles

Scale 1:29,600

Map ID: USGS-NWRC 2006-11-0349
Map Date: May 31, 2006

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: West Belle Pass Barrier Headland Restoration Project

Coast 2050 Strategy: Restore/maintain barrier islands, dedicated dredging to create, restore, or protect wetlands.

Project Location: Region 3, Terrebonne Basin, Lafourche Parish, along the western most extent of the Chenier Caminada headland west of Belle Pass.

Problem: The gulf shoreline near West Belle Pass is eroding at an approximate rate of 55 feet per year. Before last year's hurricanes this headland provided one of the last remnants of barrier shoreline in Timbalier Bay, which also helps to protect Port Fourchon from storm surge and increased tidal prism entering from the gulf. As this headland deteriorates, a first line of defense becomes obsolete and interior marshes are subject to greater erosion.

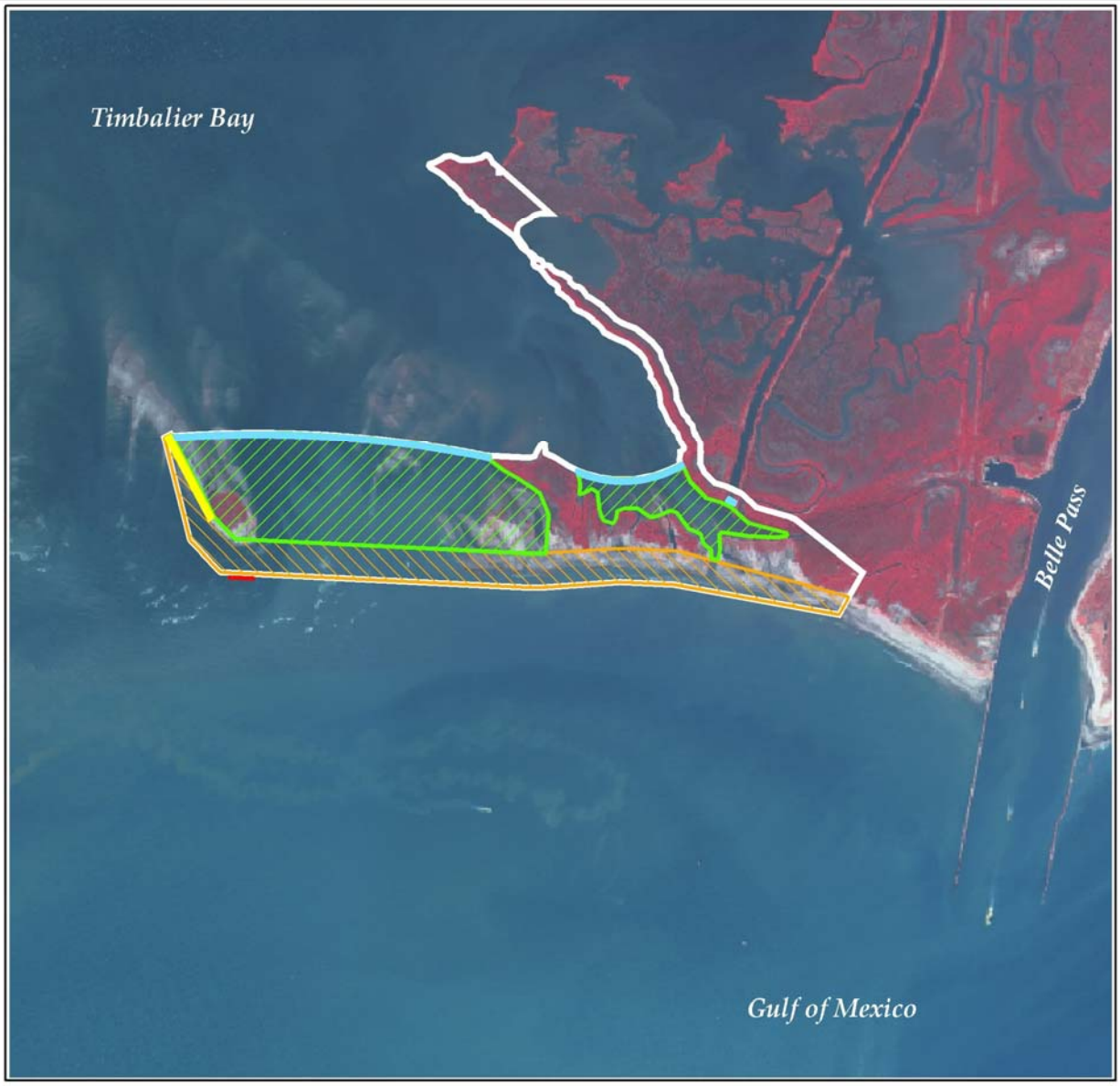
Goals: The goals of this project are to reestablish the eroded West Belle Pass headland via dune and marsh creation, and to prevent increased erosion along the adjacent bay shoreline.

Proposed Solution: The project will create a continuous, substantial headland and marsh platform over approximately a 9,300-foot lineal distance. The project will construct 120 acres of beach/dune habitat and 150 acres of marsh habitat. The berm/dune crest width of the constructed island is a constant 275 feet with a post construction elevation of +6 feet NAVD. A 1V:45H construction slope has been adopted for the front and back of the beach/dune feature. Approximately 1.6 MCY of sand material is estimated for the berm/dune component. In addition, a back island marsh platform will be constructed to an elevation of +2.6 feet NAVD, with a final intertidal elevation of +1.5 feet NAVD. Approximately 850,000 CY of material is estimated for the marsh platform component. Sand fencing will be installed concurrent with dune construction and vegetative plantings of both the dune and marsh platform will occur between 1 to 3 years post construction.

Project Benefits: The project would benefit about 389 acres of dune, beach, and saline marsh. Approximately 299 acres of marsh would be created/protected over the 20-year project life.

Project Costs: The total fully funded cost for the project is $ 32,563,747.

Preparers of Fact Sheet:
Cheryl Brodnax, NOAA Fisheries, (225) 578-7923, cheryl.brodnax@noaa.gov
Patrick Williams, NOAA Fisheries, (225) 389-0508, patrick.williams@noaa.gov



West Belle Pass Barrier Headland Restoration Project

USGS science for a changing world

Project Location

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

* denotes proposed features

0.25 0 0.25 0.5 Kilometers

0.25 0 0.25 0.5 Miles

Scale 1:25,000

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

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

Image Source:
2005 Digital Orthophoto Quarter Quadrangle

Project Name: Enhancement of Barrier Island Vegetation Demonstration Project

Coast 2050 Strategies: Coastwide Common Ecosystem Strategy; Restore/Maintain Barrier Islands, Headlands, Shorelands; Region 2 Mapping Unit Strategy # 17 Caminada Bay – Maintain Shoreline Integrity e.g. vegetative plantings of mangroves or marsh; and 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 planted over 150,000 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 $ 919,599.

Preparer of Fact Sheet:
Patricia A. Taylor, P.E. EPA Region 6, (214) 665-6403, taylor.patricia-a@epa.gov
(with major assistance from Dr. Mark Hester)

VII. SUMMARY AND CONCLUSIONS

The 16th PPL consists of 4 projects, for a Phase I cost of $8,624,360 and a Phase II cost of $112,836,064, which will be funded as these projects mature. The total benefits of the projects are estimated to be 899 AAHUs, based on a comparison of future with and without-project conditions over the 20 year project life. The 16th Priority Project List also includes one demonstration project with a fully funded cost of $919,599.

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.

VIII. BIBLIOGRAPHY

Barras, J.A., P.E. Bourgeois, and L.R. Handley. 1994. *Land Loss in Coastal Louisiana 1956-1990.* National Wetlands Research Center. Lafayette, LA.

Barrow, W.C. and I. Renne. 2001. Interactions between migrant landbirds and an invasive exotic plant: the Chinese tallow tree. Texas Partners in Flight Flyway Newsletter, Vol. 8, 11 pp.

Coastal Wetlands Planning, Protection and Restoration Act - Wetland Value Assessment Methodology: Emergent Marsh Community Models. August 1, 2002. Prepared by Environmental Work Group, Kevin J. Roy, U.S. Fish and Wildlife Service. Lafayette, LA.

Conner, W.H., and J. W. Day, Jr., eds. 1987. The ecology of Barataria Basin, Louisiana: an estuarine profile. U. S. Fish Wildlife Service Biol. Rep. 85 (7.13). 165 pp.

Fontenot, W. R. 1999. A survey of fruits eaten by birds in Louisiana. Journal of Louisiana Ornithology, Vol. 4, No. 2, 31 – 59 pp.

Gauthreaux, S. A., Jr. 1971. A radar and direct visual study of passerine spring migration in southern Louisiana. Auk 88: 343 – 365.

Gosselink, J. G., C. L. Cordes and J. W. Parsons. 1979. An ecological characterization study of the Chenier Plain coastal ecosystem of Louisiana and Texas. 3 vols. U. S. Fish and Wildlife Service, Office of Biological Services. FWS/OBS-78/9 through 78/11.

Kesel R.H., Yodis E, McCraw D. 1992. An approximation of the sediment budget of the lower Mississippi River prior to major human modification. Earth Surface Processes and Landforms 17: 711-722.

Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority. 1998. *Coast 2050: Toward a Sustainable Coastal Louisiana.* Louisiana Department of Natural Resources. Baton Rouge, LA. 161 pp.

Louisiana Coastal Wetlands Conservation and Restoration Task Force. 1993. *Louisiana Coastal Wetlands Restoration Plan.* Main Report and Environmental Impact Statement. November 1993.

Louisiana Coastal Wetlands Conservation and Restoration Task Force. 2000. *Mississippi River Sediment, Nutrient, & Freshwater Redistribution Study*. Draft Report & Environmental Resources Document. U.S. Army Corps of Engineers, New Orleans District. July 2000. 247 pp.

Louisiana Department of Natural Resources. 1997. *Barrier Island Plan, Conceptual and Quantitative System Framework Final Report*. Contracted by T. Baker Smith & Son, Inc. DNR Contract No. 25081-95-02. September 1997.

Louisiana Department of Natural Resources. 1999. Coast 2050: toward a sustainable coastal Louisiana. Appendix D—Region 2 Supplemental Information. 170 pp.

Louisiana Natural Heritage Program. 1988. The natural communities of Louisiana. Unpublished document, Louisiana Dept. Wildlife & Fisheries, Baton Rouge. 39 pp.

Martin, T.E. 1980. Diversity and abundance of spring migratory birds using habitat islands on the Great Plains. Condor 82: 430 – 439.

Materne, M. 2000. Cumulative list of woody species. Unpublished document, U.S.D.A., Natural Resources Conservation Service, Boutte, LA. 19 pp.

Meade, R.H. and R.S. Parker. 1985. Sediments in the rivers of the United States. National Water Summary 1984. U.S.G.S., Water Supply Paper, 22-75 pp.

Miller, G.B. 1995. *Analysis of the Coastal Wetlands Planning, Protection and Restoration Act.* Masters Thesis. University of Rhode Island. 192 pp.

Montz, G. N. 1981. Annotated checklist of plants on the coastal beaches, islands and barrier islands of Louisiana. Unpublished document, U.S. Army Corps of Engineers, New Orleans. 43 pp.

Moore, F.R., and T.R. Simons. 1990. Stopover on a Gulf coast barrier island by spring trans-Gulf migrants. Wilson Bull. 102: 487 – 500.

Moore, F.R., S.A. Gauthreaux, Jr., P. Kerlinger, and T.R. Simons. 1995. Habitat requirements during migration: important link in conservation. Pp. 121 B 144 in Ecology and management of neotropical migratory birds, a synthesis and review of critical issues (T.E. Martin and D.M. Finch, eds). Oxford University Press, New York. 489 pp.

Robinson, S.K., and R.T. Holmes. 1984. Effects of plant species and foliage structure on the foraging behavior of forest birds. Auk 101: 672 – 684.

Sauer, J.R., J.E. Hines, I. Thomas, J. Fallon, and G. Gough. 2000. The North American breeding bird survey, results and analysis 1996 B 1999. Version 98.1. U.S.G.S. Patuxent Wildlife Research Center, Laurel, MD.

Thomas, R. D. and C. M. Allen. 1996. Atlas of the vascular flora of Louisiana, volume II: Dicotyledons, Acanthaceae – Euphorbiaceae. Louisiana Department of Wildlife & Fisheries, Natural Heritage Program, Baton Rouge. 213 pp.

Thomas, R. D. and C. M. Allen. 1998. Atlas of the vascular flora of Louisiana, volume III: Dicotyledons, Fabaceae – Zygophyllaceae. Louisiana Department of Wildlife & Fisheries, Natural Heritage Program, Baton Rouge. 248 pp.

U.S. Army Corps of Engineers. 1991. Wetland value assessment and project description sheet – sediment diversion from the Mississippi River (West Bay). 16 pp.

U.S. Army Corps of Engineers. 1999. Mississippi River ship channel improvements study. Draft report notes.

U.S. Army Corps of Engineers. 2000. Mississippi River sediment, nutrient, and freshwater redistribution study. Draft report and environmental resources document. 263 pp plus appendices.

U.S. Army Corps of Engineers. 2001 Beneficial use monitoring program (BUMP). New Orleans District.

U.S. Fish & Wildlife Service. 1980. *Habitat Evaluation Procedures (HEP).* Ecological Service Division, ESM 102, U.S. Fish & Wildlife Service, Washington, D.C. 141 pp.

U.S. Fish & Wildlife Service. 1981. Standards for the Development of Habitat Suitability Index Models. 103 Ecological Services Manuals. Division of Ecological Services, U.S Fish & Wildlife Service, Department of the Interior, Washington, D.C. Page 103-ESM-3-33.

Williams, S.J. and H.A. Chicon (eds.). 1994. *Processes of Coastal Wetlands Loss in Coastal Louisiana: Results From a Multi-Year Collaborative Study by the U.S. Geological Survey, National Biological Survey, and Louisiana State University.* Presented at Coastal Zone '93. New Orleans, LA. 226 pp.

USGS
science for a changing world

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
Lafourche
St Mary
Region 3
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 2. SUMMARY OF PROJECTS 1-16 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 (deauthorized = *underlined*)

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 Fresh Water 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 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

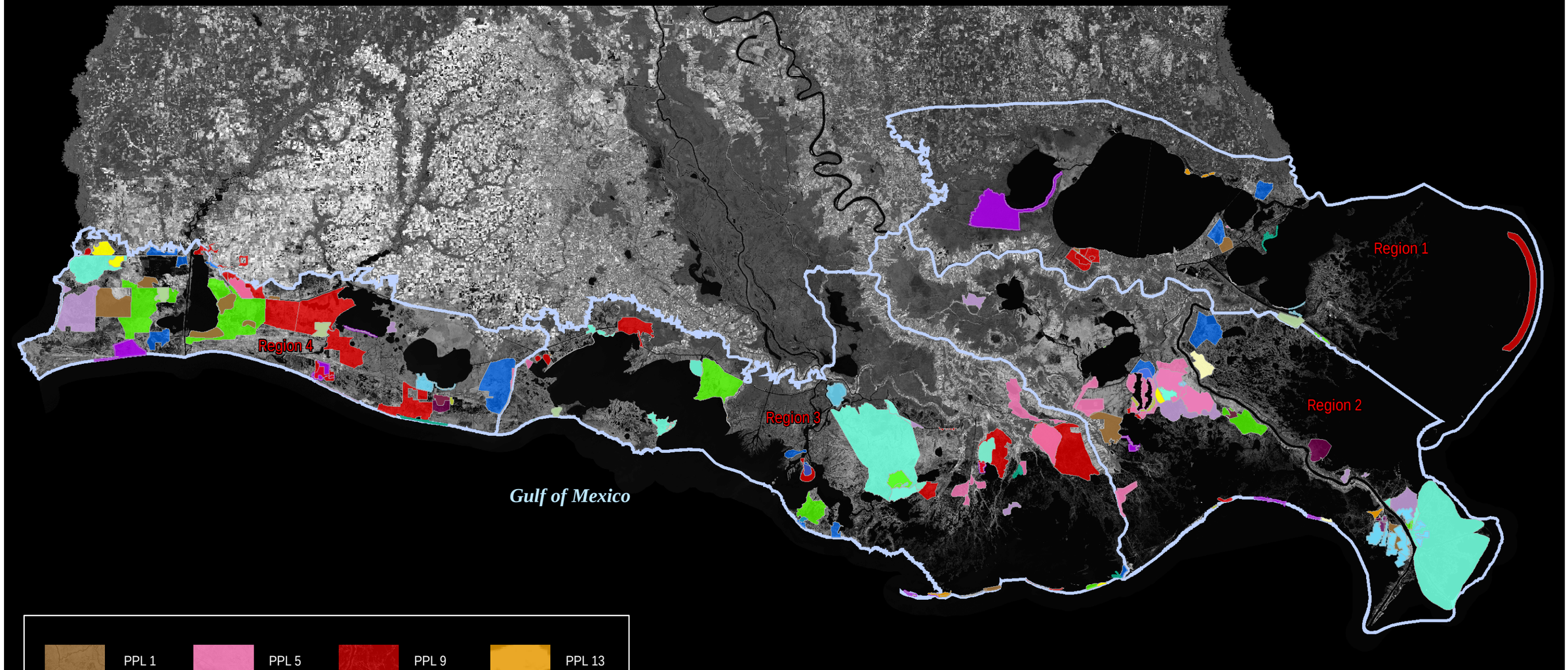
U.S. Department of the Army/ U.S. Environmental Protection Agency
BS-13 Bayou Lamoque Freshwater Diversion
MR-15 Venice Ponds Marsh Creation and Crevasses
U.S. Department of the Interior
BA-42 Lake Hermitage Marsh Creation
U.S. Department of Commerce
ME-23 South Pecan Island Freshwater Introduction

16th Priority Project List

U.S. Environmental Protection Agency
TE-53 Enhancement of Barrier Island Vegetation Demonstration Project
U.S. Department of the Army
PO-34 Alligator Bend Marsh Restoration and Shoreline Protection
ME-24 Southwest Louisiana Gulf Shoreline Nourishment and Protection
U.S. Department of Commerce
TE-51 Madison Bay Marsh Creation and Terracing
TE-52 West Belle Pass Barrier Headland and Restoration

USGS
science for a changing world

Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-16 and Coast 2050 Regions



PPL 1
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
PPL 16

Region Boundary

1:1,266,000

10 0 10 20 Kilometers

10 0 10 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 2007-11-0082
Map Date: January 24, 2007

Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-16 Coast 2050 Region 1

USGS science for a changing world

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-34
PO-16
PO-26
Orleans
Lake Borgne
PO-30
St. Bernard
PO-30
Assumption
St. Charles
Jefferson
PO-32
Chandeleur Sound
PO-24
PO-19
Terrebonne
Lake Salvador
Mississippi River
Plaquemines
Gulf of Mexico
Breton Sound

PPL 1 PO-16, PO-17	PPL 5 PO-22	PPL 9 PO-26, PO-27, PO-28	PPL 13 PO-33
PPL 2 PO-06, PO-18	PPL 6 None	PPL 10 PO-30	PPL 14 None
PPL 3 PO-19	PPL 7 None	PPL 11 PO-29	PPL 15 None
PPL 4 None	PPL 8 PO-24	PPL 12 PO-32	PPL 16 PO-34

1:584,000

7 0 7 14 Kilometers

7 0 7 14 Miles

N

CWPPRA Hydrologic Basin Boundary

Region 1 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 2007-11-0078
Map Date: January 24, 2007

USGS
science for a changing world

Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-16 Coast 2050 Region 2

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

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 BA-25b BS-13 BS-10 BS-11 BA-28 BA-35 BA-40 BA-19 BA-30 BA-38 MR-09 MR-13 MR-12 MR-14 MR-15 MR-03 MR-12 MR-06 MR-12 MR-09 MR-10

PPL 1 BA-02, BA-19, MR-03	PPL 5 BA-03c, BA-24, BA-25b	PPL 9 BA-27c, BA-30	PPL 13 MR-14
PPL 2 BA-20, BS-03a	PPL 6 BA-26, MR-09, MR-10	PPL 10 BA-33, BA-34, BS-10, BS-11, MR-13	PPL 14 BA-40, BA-41, BS-12
PPL 3 BA-04c, BA-15, MR-06	PPL 7 BA-27, BA-28	PPL 11 BA-27d, BA-35, BA-36, BA-37, BA-38	PPL 15 BA-42, BS-13, MR-15
PPL 4 BA-23	PPL 8 None	PPL 12 BA-39, MR-12	PPL 16 None

1:625,000

5 0 5 10 Kilometers

5 0 5 10 Miles

N

CWPPRA Hydrologic Basin Boundary

Region 2 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 2007-11-0079
Map Date: January 24, 2007

USGS
science for a changing world

Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-16 Coast 2050 Region 3

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

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
AT-03
AT-02
AT-04
TE-17
TE-46
TE-51
BA-25b
TE-28
TE-44
TE-39
TE-26
TE-22
BA-25b
TE-45
TE-52
TE-23
TE-30
TE-25
TE-48
TE-50
TE-24
TE-20
TE-40
TE-29
TE-47
TE-27
TE-37
TE-18

PPL 1 TE-17, TE-18, TE-20, TV-03	PPL 5 BA-25b, TE-10, TE-29, TV-12	PPL 9 AT-04, TE-37, TE-39, TE-40, TE-41, TE-42, TV-11b, TV-18, TV-19	PPL 13 TE-50, TV-20
PPL 2 AT-02, AT-03, TE-22, TE-23, TE-24, TV-09	PPL 6 TE-32a, TE-34, TV-13a, TV-14, TV-15, TV-16	PPL 10 TE-43, TE-44, TE-45	PPL 14 TV-21
PPL 3 TE-25, TE-26, TE-27, TE-28, TV-04	PPL 7 None	PPL 11 TE-46, TE-47, TE-48	PPL 15 None
PPL 4 TE-30	PPL 8 TV-17	PPL 12 TE-49	PPL 16 TE-51, TE-52

1:525,000
7 0 7 14 Kilometers
7 0 7 14 Miles

N

CWPPRA Hydrologic Basin Boundary
Region 3 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 2007-11-0080
Map Date: January 24, 2007

USGS
science for a changing world

Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-16 Coast 2050 Region 4

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

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

PPL 1 CS-17, CS-18, CS-19, ME-09	PPL 5 CS-11b, ME-13	PPL 9 CS-29, CS-30, ME-16, ME-17	PPL 13 LA-06
PPL 2 CS-09, CS-20, CS-21, CS-22, ME-04	PPL 6 CS-27	PPL 10 CS-32, ME-18, ME-19	PPL 14 None
PPL 3 CS-04a, CS-23	PPL 7 ME-14	PPL 11 CS-31, ME-20, ME-21	PPL 15 ME-23
PPL 4 CS-24, CS-25	PPL 8 CS-28, ME-11	PPL 12 ME-22	PPL 16 ME-24

1:460,000

7 0 7 14 Kilometers

7 0 7 14 Miles

N

CWPPRA Hydrologic Basin Boundary

Region 4 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 2007-11-0081
Map Date: January 24, 2007