



20th PRIORITY PROJECT LIST REPORT

PREPARED BY:

**LOUISIANA COASTAL WETLANDS CONSERVATION AND RESTORATION
TASK FORCE**

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Coastal Wetlands Planning, Protection, and Restoration Act

20th Priority Project List Report

Executive Summary and Status of the CWPPRA Program

In 1990, Congress established the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA, PL 101-646, Title III) to provide for the long-term conservation of Louisiana's coastal wetlands (see Appendix A). Section 303(a) of the CWPPRA directed 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.

Section 303(a) also requires that the list of priority projects be updated and transmitted to Congress annually. According to Section 303(a), the Task Force initiated an annual Priority Project List (PPL) process in 1991. This report transmits the 20th PPL (PPL 20) and fulfills the requirements of CWPPRA Section 303(a).

Under the development of PPL 20, the public, parish officials, along with state and federal agencies met at four regional coastal meetings to propose projects from the nine identified hydrologic basins. Of the 63 project proposals and 4 demonstration project proposals, 20 projects and 4 demonstration projects, were nominated by CWPPRA agencies and qualifying parish representatives at the CWPPRA coast-wide voting meeting on February 24, 2010. Eleven candidate projects and three candidate demonstration projects were selected from the list of nominees at the Technical Committee meeting held on April 20, 2010. These PPL 20 candidate projects were evaluated to determine the long-term net wetlands benefits based on a 20-year project life. Benefits were measured in both net acres and net Average Annual Habitat Units (AAHUs). The candidate projects were also evaluated to determine conceptual project designs and cost estimates. Economic analyses were conducted to determine the total fully-funded cost estimate for feasibility planning, construction, and 20 years of operations, maintenance, and monitoring. Cost-effectiveness was calculated for each project using the fully-funded cost estimate and net wetland benefits over the 20 year project life.

At the end of the PPL 20 development process the Task Force authorized the following five new coastal restoration projects:

- Bayou Bonfouca Marsh Creation
- Cameron-Creole Watershed Grand Bayou Marsh Creation
- Coastwide Planting
- Kelso Bayou Marsh Creation
- Terrebonne Bay Marsh Creation-Nourishment

These PPL 20 projects will be implemented in two phases. Phase I will include data collection, engineering and design, environmental impact assessment and regulatory compliance, pre-construction monitoring, and real estate planning. The total Phase I cost for the four new PPL 20 coastal restoration projects is estimated to be \$10,363,337. Phase II would include real estate acquisition, construction, operation and maintenance, and post-construction monitoring. The total Phase II cost for these five projects is estimated to be \$92,576,366. The total net wetland benefit that would be derived by implementing the five PPL 20 projects is estimated to be 2,364 acres or 990 AAHUs over a 20-year period. The Task Force will consider approving Phase II funding for individual PPL 20 projects after Phase I requirements have been met for each.

Since the last PPL report to Congress, the Task Force de-authorized the following three projects because they did not represent the best strategy for addressing the immediate and/or long-term coastal restoration needs as compared to other priority projects, and/or the project scope was beyond the funding capability of the CWPPRA program:

- Lake Borgne and MRGO Shoreline Protection (PO-32), PPL 12
- Brown Lake Hydrologic Restoration (CS-09), PPL 2
- South Pecan Island Freshwater Introduction (ME-23), PPL 15

With the addition of the five new PPL 20 projects and the removal of the three de-authorized projects, there are a total of 149 active Louisiana coastal restoration projects in the CWPPRA Program. The current estimate for the 149 projects combined is \$2.2B. The current funded estimate for approved phases for all projects is \$1.2B. At the time of the production of this PPL 20 report, \$1,035,622,922 has been obligated and \$715,998,073 has been expended on the 149 active CWPPRA coastal restoration projects in Louisiana since inception of the program in 1991. Since the last PPL report the program has expended \$147,937,100. Of the 149 active projects, 92 projects have completed construction, 10 projects are under construction, and 47 projects are in various stages of planning and design. The Task Force has determined that these active projects represent the best strategy for addressing the immediate and/or long-term needs of Louisiana's coastal wetlands within the available and projected future funding limits of the CWPPRA Program. Given the significant need for coastal wetlands restoration in Louisiana, the Task Force often generates more projects than the CWPPRA program has funding in hand to build. As such, Phase II funding of projects will be based on CWPPRA program funding availability at the time of funding request. Although Congress in 2004 reauthorized CWPPRA through 2019, the program is expected to reach its capacity to authorize new PPL projects within the next few years. Even though CWPPRA has received more than \$80 million each year over the last several years, there continues to be a backlog of construction-ready projects. To offset this back-log, the Task Force continues to de-authorize projects that are beyond the funding capability of the CWPPRA program or do not represent the best strategy for addressing the immediate and long-term needs of Louisiana's coastal wetlands under CWPPRA.

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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's coastal zone contains 45 percent of all intertidal coastal marshes in the lower forty-eight states; however, it is suffering 80 percent of the entire Nation's annual coastal wetland loss. Since the 1930s, coastal Louisiana has lost over 1,875 square miles, an area more than 25 times larger than Washington D.C. As recently as the year 2000, the annual loss rate was quantified as 24 square miles per year. From 2000 to 2050, 513 square miles are projected to be lost. In addition, the U.S. Geological Survey (USGS) estimated the Hurricanes Katrina and Rita (2005) alone accounted for converting 217 square miles (138,880 acres) of coastal marsh to open water along the Louisiana coast. 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 to this, the Coastal Wetlands Planning, Protection, and Restoration Act (Public Law 101-646) – also known as the Breaux Act – was signed into law by President George H.W. Bush on November 29, 1990. This report documents the implementation of Section 303(a) of the cited legislation.

STUDY AUTHORITY

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

. . . initiate a process to identify and prepare a list of coastal wetlands restoration projects in Louisiana to provide for the long-term conservation of such wetlands and dependent fish and wildlife populations in order of priority, based upon the cost-effectiveness of such projects in creating, restoring, protecting, or enhancing coastal

wetlands, taking into account the quality of such coastal wetlands, with due allowance for small-scale projects necessary to demonstrate the use of new techniques or materials for coastal wetlands restoration.

STUDY PURPOSE

The purpose of this study effort was to prepare the 20th 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, which if all implemented could maintain a self-sustaining ecosystem along the Louisiana coast. 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 (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 20. All Plates can be found at the end of this report.

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 (the 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 U.S. Army Corps of Engineers (USACE) New Orleans District to act in his place as chairman of the Task Force. The other federal

agencies on the CWPPRA Task Force include: U.S. Fish and Wildlife Service (USFWS) of the U.S. Department of Interior, the Natural Resources Conservation Service (NRCS) of the U.S. Department of Commerce, and the U.S. Environmental Protection Agency (USEPA). The Governor's Office of the State of Louisiana represents the state as a Task Force member.

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

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 (WVAs). 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 [LDNR]*)
- The Mississippi River Sediment, Nutrient, and Freshwater Redistribution study – March 1995 – July 2000 (managed by the USACE)

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 and the Technical Committee held six 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.

*Because of the devastation of hurricanes Katrina and Rita, in December 2005, the Louisiana Legislature restructured the State's Wetland Conservation and Restoration Authority to form the Coastal Protection and Restoration Authority (CPRA). Agencies in the CPRA membership include Louisiana Department of Natural Resources (LDNR).

II. PLAN FORMULATION PROCESS FOR THE 20th PRIORITY PROJECT LIST

IDENTIFICATION & SELECTION OF CANDIDATE & DEMONSTRATION PROJECTS

Regional Planning Team (RPT) meetings were held during the period of January 26 through January 28, 2010 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. A separate coast-wide voting meeting was held on February 24, 2010 for the 20th PPL to choose three projects in the Terrebonne, Barataria, and Pontchartrain Basins based on the high loss rates (1985-2006) in those basins, two projects in the Breton Sound, Teche/Vermilion, Mermentau, Calcasieu/Sabine, and the Mississippi River Delta Basins, and only one project in the Atchafalaya Basin because of low land loss rates, as per the accepted process. In addition, four demonstration projects were selected as nominees. A total of twenty projects and four demonstration projects were nominated. A schedule of meetings is shown in Table 1.

Table 1: RPT Meetings to Propose/Nominate Projects

Region 1: New Orleans, LA	January 28, 2010
Region 2: New Orleans, LA	January 28, 2010
Region 3: Houma, LA	January 27, 2010
Region 4: Rockefeller Refuge, LA	January 26, 2010
Coast-wide Voting Meeting, Baton Rouge, LA	February 24, 2010

The Engineering and Environmental Work Groups and the AAG met March 23 and March 24, 2010 to review and reach consensus on preliminary project features, benefits, and fully-funded cost estimates for the twenty nominated projects. The Engineering and Environmental Work Groups also identified any potential issues associated with each nominee. The P&E Subcommittee prepared a matrix of nominated projects' cost estimates and benefits and furnished it to the Technical Committee and Coastal Protection and Restoration Authority (CPRA) on April 20, 2010. The matrix is included as Table 2.

Table 2a: 20th Project Priority List - Candidate Nominee Project Matrix by Basin

Rg	Basin	Type	Project	Preliminary Fully-Funded Cost Range	Preliminary Benefits (Net Acres Range)	Potential Issues				
						Oysters	Land Rights	Pipelines /Utilities	O&M	Other Issues
1	PO	MC	Bayou Bonfouca Marsh Creation	\$30M - \$35M	300-350		X			X
1	PO	SP	Unknown Pass to Rigolets Shoreline Protection	\$25M - \$30M	100-150	X		X	X	X
1	PO	SP/ MC	New Orleans Land Bridge Shoreline Stabilization and Marsh Creation	\$10M - \$15M	50-150				X	X
2	MR	VP	Coastwide Planting	\$15M - \$20M	500-550		X			
2	MR	MC	Beneficial Use of MS River Dredge Material via Hopper Dredge Pumpout Stations	\$25M - \$30M	750-800					
2	BS	MC	Lake Lery Shoreline Marsh Creation	\$20M - \$25M	350-400			X		
2	BS	FD	Monsecour Siphon	\$10M - \$15M	950-1,000	X		X	X	
2	BA	HR/ TR	Bayou L'Ours Ridge Restoration and Terracing	\$10M - \$15M	0-50		X		X	
2	BA	MC	Bayou Dupont Sediment Delivery – Marsh Creation #3	\$40M - \$50M	300-350					
2	BA	MC	Homeplace Marsh Creation	\$30M - \$35M	200-250					
3	TE	MC	Lake Barre Marsh Creation	\$30M - \$35M	300-350	X		X		
3	TE	MC	Terrebonne Bay Marsh Creation – Nourishment	\$25M - \$30M	300-350	X		X		
3	TE	FD	Bayou Terrebonne Diversion	\$10M - \$15M	250-300		X	X	X	
3	AT	FD	West Wax Lake Wetlands Diversion	\$10M - \$15M	100-150				X	
3	TV	MC	Cole's Bayou Marsh Creation and Restoration	\$40M - \$50M	300-350	X	X	X	X	
3	TV	SP/ FD	Cote Blanche Freshwater and Sediment Introduction and Shoreline Protection	\$20M - \$25M	600-650			X	X	
4	ME	TR/ SP	Lower Mud Lake Terracing and Bankline Stabilization	\$10M - \$15M	50-100		X	X	X	X
4	ME	SP	Rockefeller Gulf of Mexico Shoreline Stabilization, Joseph's Harbor East	\$40M - \$50M	100-150			X	X	
4	CS	MC	Cameron-Creole Watershed Grand Bayou Marsh Creation	\$20M - \$25M	500-550	X				
4	CS	MC/ SP	Kelso Bayou Marsh Creation	\$20M - \$25M	250-300		X	X	X	X

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

Type codes: FD=Freshwater Diversion; HR=Hydrologic Restoration; MC=Marsh Creation; O&M= Operation and Maintenance; SP=Shoreline Protection; TR=Terracing; BI=Barrier Island; VP=Vegetative Plantings.

Table 2b: 20th Project Priority List Demonstration Nominee Project Matrix

Demonstration Project Name	Meets Demonstration Project Criteria?	Lead Agency	Total Fully-Funded Cost	Technique Demonstrated
The Wave Robber Wave Suppressor Sediment Collection System	Yes	NMFS	\$967,113	Evaluate the effectiveness of the Wave Robber system as an alternative method of shoreline protection equivalent to traditional methods, while trapping ambient sediments to facilitate expansion of emergent marsh.
EcoSystems Wave Attenuator for Shoreline Protection Demo	Yes	NMFS	\$1,495,750	Evaluate the effectiveness of the EcoSystems Wave Attenuator as an alternative method of shoreline protection in areas where site conditions limit or preclude traditional methods.
Floating Island Environmental Solutions BioHaven©	Yes	NRCS	\$1,255,875	Evaluate the effectiveness of floating marsh islands to reduce wave fetch, trap sediment, and establish floating marsh. In addition, evaluate their effectiveness as an alternative to earthen terraces in areas of poor soils.
Use of Sand Derived from Pulverized Glass As Beach Nourishment	Yes	COE	\$1,397,000	Evaluate the effectiveness of cullet compared to sand in erosion control/prevention.

The CWPPRA Technical Committee met publicly on April 20, 2010 to consider the preliminary costs, wetland benefits, and potential issues of the twenty nominees. Eleven candidate projects were selected for detailed assessment by the Environmental, Engineering, and Economic Work Groups, and the AAG (Table 4).

Phase 0 analysis of the eleven candidate projects took place May 2010 through September 2010. Interagency field visits were conducted during May and June 2010 at each project site/area with members of the Engineering and Environmental Work Groups and the AAG. The Environmental and Engineering Work Groups and AAG met to refine the projects and develop boundaries on June 30, 2010, 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 August 10 through August 11, 2010, the Engineering Work Group met to review and approve the Phase I and II cost estimates developed by the agencies for the eleven PPL20 candidates and four PPL20 demonstration candidates. In September 2010, the Environmental Work Group finalized WVAs for each project. The Engineering Work Group reviewed and finalized the final project cost estimates for each project on September 9, 2010. The Economics Work Group reviewed the final project cost estimates and developed annualized costs in the month of October 2010.

The Environmental and Engineering Work Groups and AAG also met on October 1, 2010 to evaluate and rank the three demonstration projects. Demonstration projects were evaluated using defined parameters. Within each of these parameters a project was graded as 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:

(P₁) 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.

(P₂) 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.

(P₃) 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.

(P₄) 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.

(P₅) 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.

(P₆) 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 20th Priority Project List Candidate Demonstration Projects

Demonstration Project Name	Parameter (Pn)							Total Score
	Total Fully-Funded Cost	P ₁	P ₂	P ₃	P ₄	P ₅	P ₆	
Floating Islands Environmental Solutions BioHaven©	\$1,977,995	3	2	2	3	3	2	15
EcoSystems Wave Attenuator for Shoreline Protection	\$2,345,866	3	3	2	2	3	2	15
Wave Robber Wave Suppressor Sediment Collection System	\$1,718,192	3	3	2	2	3	2	15

Demonstration Project Parameters: (P₁) Innovativeness; (P₂) Applicability or Transferability; (P₃) Potential Cost Effectiveness; (P₄) Potential Environmental Benefits; (P₅) Recognized Need for the Information to be Acquired; (P₆) 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), acres created, restored, and/or protected, and costs. The matrix is included as Table 4.

Table 4: 20th Priority Project List Candidate Project Evaluation Matrix

Project Name	AAHUs	WVA Net Acres	Total Fully-Funded Cost	Average Annual Cost (AAC)	Cost Effectiveness (AAC/AAHU)	Cost Effectiveness (Cost/Net Acre)
Unknown Pass to Rigolets Shoreline Protection	15	39	\$27,367,360	\$1,709,314	\$113,954	\$701,727
Bayou Bonfouca Marsh Creation	195	424	\$23,875,866	\$1,802,443	\$9,243	\$56,311
Lake Lery Shoreline Marsh Creation	111	282	\$26,649,040	\$1,971,498	\$17,761	\$94,500
Monsecour Siphon	673	825	\$10,563,670	\$735,507	\$1,093	\$12,804
Coastwide Planting	189	779	\$11,611,059	\$686,343	\$3,631	\$14,905
Bayou Dupont Sediment Delivery-Marsh Creation	194	436	\$39,530,119	\$2,940,357	\$15,156	\$90,665
Homeplace Marsh Creation	118	202	\$20,156,135	\$1,511,095	\$12,806	\$99,783
Terrebonne Bay Marsh Creation – Nourishment	224	353	\$27,414,401	\$2,037,486	\$9,096	\$77,661
Cote Blanche Freshwater and Sediment Introduction and Shoreline Protection	296	763	\$33,380,676	\$2,410,844	\$8,145	\$43,749
Kelso Bayou Marsh Creation	168	274	\$16,632,765	\$1,214,476	\$7,229	\$60,704
Cameron-Creole Watershed Grand Bayou Marsh Creation	214	534	\$23,405,612	\$1,756,971	\$8,210	\$43,831

Two public meetings were held in Abbeville, LA, and New Orleans, LA, respectively, November 16 and 17, 2010, to present projects to the public for comment.

The CWPPRA Technical Committee met on December 8, 2010 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 eleven candidate projects. Projects were ranked by number of agency votes first and total weighted score second. The top five projects were selected for recommendation to the CWPPRA Task Force for Phase I funding approval. The Technical Committee did not rank or recommend any demonstration projects for the CWPPRA Task Force to approve funding. The results of the CWPPRA Technical Committee vote are outlined in Table 5. On January 18, 2011, the CWPPRA Task Force reviewed the Technical Committee recommendations and moved to adopt the recommendation without change.

Table 5: 20th Priority Project List Candidate Selection Process – Agency Voting Record

*Project No.	Nominee Project Name	Coast 2050 Region	USACE	STATE	EPA	FWS	NRCS	NMFS	No. of Votes	Sum of Point Score
PO-104	Bayou Bonfouca Marsh Creation	R1	4	5	2	6	6	5	6	28
LA-39	Coastwide Planting	R2	6	1	4	5	3	3	6	22
CS-54	Cameron-Creole Watershed Grand Bayou Marsh Creation	R4	5	4		4	5	1	5	19
CS-53	Kelso Bayou Marsh Creation	R4	1		1	3		6	4	11
TE-83	Terrebonne Bay Marsh Creation – Nourishment	R3	3	3		2	1		4	9
+	Lake Lery Shoreline Marsh Creation	R2		6		1	4		3	11
+	Bayou Dupont Sediment Delivery - Marsh Creation	R2		2	5		2		3	9
+	Monsecour Siphon	R2			6			2	2	8
+	Cote Blanche Freshwater and Sediment Introduction and Shoreline Protection	R3	2					4	2	6
+	Homeplace Marsh Creation	R2			3				1	3
+	Unknown Pass to Rigolets Shoreline Protection	R1							0	0

*Each selected project received a two-letter code to identify its basin; these codes are: PO-Ponchartrain; BS-Breton Sound, MR- Mississippi River Delta; BA-Barataria; TE-Terrebonne; AT-Atchafalaya; TV-Teche/Vermilion; ME-Mermentau; CS-Calcasieu/Sabine.

+ These projects were not selected for funding.

EVALUATION OF CANDIDATE PROJECTS

Benefit Analysis (WVA). The WVA is a quantitative, habitat-based assessment methodology developed for use in analyzing benefits of 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 USFWS (USFWS, 1980). HEP is widely used by the USFWS 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, cypress-tupelo swamp, barrier headland, barrier island, coastal chenier ridge, and bottomland hardwoods. 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 interspersed,
 - 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.

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 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. Fully-funded cost estimates are developed for each project to determine how many projects could be supported through the Authorized program lifetime.

III. DESCRIPTION OF CANDIDATE PROJECTS

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

Project Name: Bayou Bonfouca Marsh Creation

Coast 2050 Strategy: Coastwide: dedicated dredging for wetland creation; maintenance of bay and lake shoreline integrity

Regional: Dedicated delivery of sediment for marsh building; maintain shoreline integrity of Lake Pontchartrain. Mapping Unit: Maintain Shoreline Integrity

Project Location: Region 1, St. Tammany Parish, Pontchartrain Basin, parts of the project located within Big Branch Marsh National Wildlife Refuge adjacent to Bayou Bonfouca.

Problem: The marsh in this area was fairly stable prior to Hurricane Katrina in August 2005. There was extensive damage to the marsh along the north shore of Lake Pontchartrain and especially localized in the marshes near Bayou Bonfouca when the storm surge removed many acres of marsh. Marsh loss rates should increase in the marsh surrounding these newly created open water areas due to an increase in wind driven fetch. Shoreline erosion rates in this area seem to be very low, currently there is one large breach and several smaller ones. Many more are imminent. These breaches provide direct connection between the fresher interior marshes and higher saline waters of Lake Pontchartrain. The breaches in the bank line should be filled before they grow to become a major exchange point causing an increase in interior loss rates.

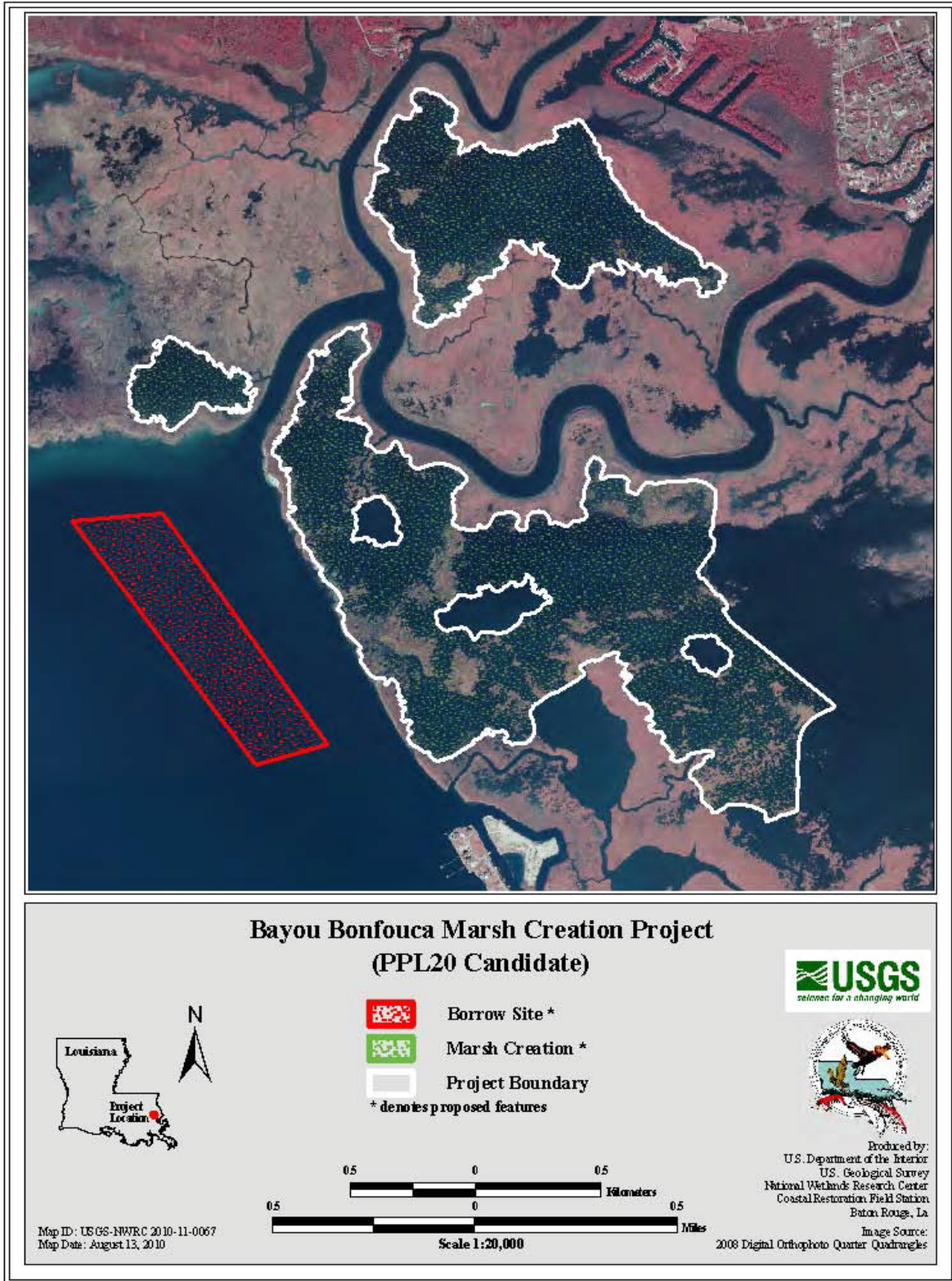
Goals: The primary goal of the project is to create 533 acres and nourish 42 acres of low salinity brackish marsh in open water areas adjacent to Bayou Bonfouca with sediment pumped from Lake Pontchartrain.

Proposed Solution: This project would consist of placing sediment, hydraulically dredged from Lake Pontchartrain, in open water sites to a height of +1.2 NAVD 88 to create 533 acres and nourish approximately 42 acres of marsh. Several historic marsh ponds have been identified and would be restored. Tidal creeks are also proposed to connect these ponds to facilitate water exchange and fisheries access. Containment dikes would be sufficiently gapped or degraded to allow for fisheries access no later than three years post construction.

Project Benefits: The project would result in approximately 424 net acres of intermediate marsh over the 20-year project life.

Project Costs: The total fully-funded cost for the project is \$23,875,866.

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



Project Name: Bayou Dupont Sediment Delivery – Marsh Creation

Coast 2050 Strategy: Coastwide: dedicated dredging for wetland creation

Project Location: Region 2, Barataria Basin, Plaquemines and Jefferson Parishes

Problem: The wetlands in the Barataria Basin were historically nourished by the fresh water, sediment and nutrients delivered by the Mississippi River and the many distributary channels. Following the creation of levees along the lower river for flood control and navigation, these inputs ceased. In addition, numerous oil and gas canals in the area contributed significantly to wetland losses. Data suggests that from 1932 to 1990, the basin lost over 245,000 acres of marsh, and from 1978 to 1990, Barataria Basin experienced the highest rate of wetland loss along the entire coast.

Goals: The primary goal of this project is to create/nourish 522 acres of emergent intermediate marsh using sediment from the Mississippi River. In order to achieve this, specific project goals include: (1) create 457 acres of marsh habitat using sediment from the Mississippi River, (2) nourish 51 acres of existing marsh habitat using sediment from the Mississippi River, (3) create approximately 10 acres of tidal ponds and approximately 10,000 linear feet of tidal creeks (approximately 4 acres). This project will tie in to the previous BA-39 project and create/protect 436 acres of emergent intermediate marsh over the project's life.

Proposed Solution: Creation/nourishment of approximately 522 acres of emergent intermediate marsh by hydraulically pumping sediment from the Mississippi River via pipeline, create approximately 10 acres of tidal ponds and approximately 10,000 linear feet of tidal creeks, degrade and gap containment dike to hydraulically connect the constructed tidal creeks to the adjacent water, and plant appropriate marsh vegetation (funds are budgeted to plant 50% of the created marsh acres/229 acres).

Project Benefits: The project would result in approximately 436 net acres of marsh over the 20-year project life.





Project Costs: The total fully-funded cost for the project is \$39,530,119.

Preparer(s) of Fact Sheet: Kenneth Teague, EPA, (214) 665-6687, teague.kenneth@epa.gov
Paul Kaspar, EPA, (214) 665-7459, kaspar.paul@epa.gov

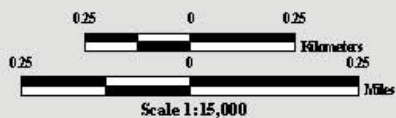


Bayou Dupont Sediment Delivery - Marsh Creation 3 (PPL20 Candidate)



-  Tidal Creek *
-  Created Marsh Ponds *
-  Marsh Creation *
-  Project Boundary

* denotes proposed features



Map ID: USGS-NWRC 2010-11-0053
Map Date: July 30, 2010



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:
2008 Digital Orthophoto Quarter Quadrangles

Project Name: Cameron-Creole Watershed Grand Bayou Marsh Creation

Coast 2050 Strategy: Coastwide: dedicated dredging for wetland creation

Project Location: Region 4, Calcasieu-Sabine Basin, Cameron Parish, 6 miles northeast from Cameron, LA, on the Cameron Prairie NWR and Miami Corporation north of Grand Bayou.

Problem: Approximately 14,390 acres (32%) of the Cameron-Creole Watershed Project (CCWP) marshes were lost to open water from 1932 to 1990 at an average loss rate of 248 acres/year (0.55 percent/year) due to subsidence and saltwater intrusion from the Calcasieu Ship Channel. The CCWP was implemented by the NRCS in 1989 to reduce saltwater intrusion and stimulate restoration through revegetation. Hurricanes Rita and Ike in 2005 and 2008 breached the watershed levee scouring the marsh and allowing higher Calcasieu Lake salinities to enter the watershed causing more land loss. The Calcasieu-Sabine Basin lost 28 mi² (17,920 acres) (4.4%) as a result of Hurricane Rita (Barras et al. 2006). Land loss is estimated to be 1.33 percent/year based on USGS data from 1985 to 2009 within the extended project boundary.

Goals: Project goals include restoring and nourishing marsh with dedicated dredged material from Calcasieu Lake to benefit fish and wildlife resources in the Cameron Prairie National Wildlife Refuge and adjacent brackish marshes of the Calcasieu Lake estuary. Specific phase 0 goals include creating 609 acres of brackish marsh and nourishing 7 acres of brackish marsh.

Proposed Solution: Place approximately 3 million cubic yards of material into two marsh creation areas north of Grand Bayou to restore 609 acres and nourish 7 acres of brackish marsh. Material would be dredged from a borrow site proposed in Calcasieu Lake. The borrow site would be designed to avoid and minimize impacts to oysters and other sensitive aquatic habitat. The hurricane-scoured marsh within the project area is very shallow (averaging 1.2 feet deep) making it ideal for marsh restoration with sediment because more marsh per volume of dredged material could be restored. Tidal creeks will be constructed prior to placement of dredge material and retention levees would be gapped to support estuarine fisheries access and to achieve a functional marsh.

Project Benefits: The project would result in approximately 534 net acres of brackish marsh over the 20-year project life.

Project Costs: The total fully-funded cost is \$23,405,612.

Preparers of Fact Sheet: Angela Trahan, USFWS, (337) 291-3137, Angela_Trahan@fws.gov
Darryl Clark, USFWS, (337) 291-3111, Darryl_Clark@fws.gov



Cameron-Creole Watershed Grand Bayou Marsh Creation (PPL20 Candidate)



Marsh Creation *



Project Boundary

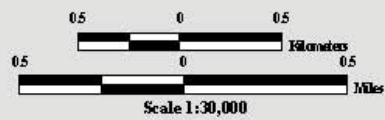
** denotes proposed features*



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:
2008 Digital Orthophoto Quarter Quadrangles

Map ID: USGS-NWRC 2010-11-0078
Map Date: August 16, 2010



Project Name: Coastwide Planting

Coast 2050 Strategy: Coastwide: vegetative planting

Project Location: Coastwide

Problem: The coastal restoration community has long recognized the benefits of vegetative plantings in restoration. Many marsh creation and most terracing projects require planting to insure success. Coastal shoreline plantings have also proven to be very effective and some have demonstrated the ability to not only stop shoreline erosion but to facilitate accretion. Recent hurricane events have exposed a need to have a mechanism in place where large-scale planting efforts can be deployed in a timely manner to specifically target areas of need anywhere along the coast. Although the CWPPRA program can fund specific large-scale planting projects, the normal program cycle for individual projects can delay needed restoration plantings for a number of years.

Goals: The goals of this project are to facilitate a consistent and responsive planting effort in coastal Louisiana that is flexible enough to routinely plant on a large scale and be able to rapidly respond to “hot spots” following storms or other damaging events.

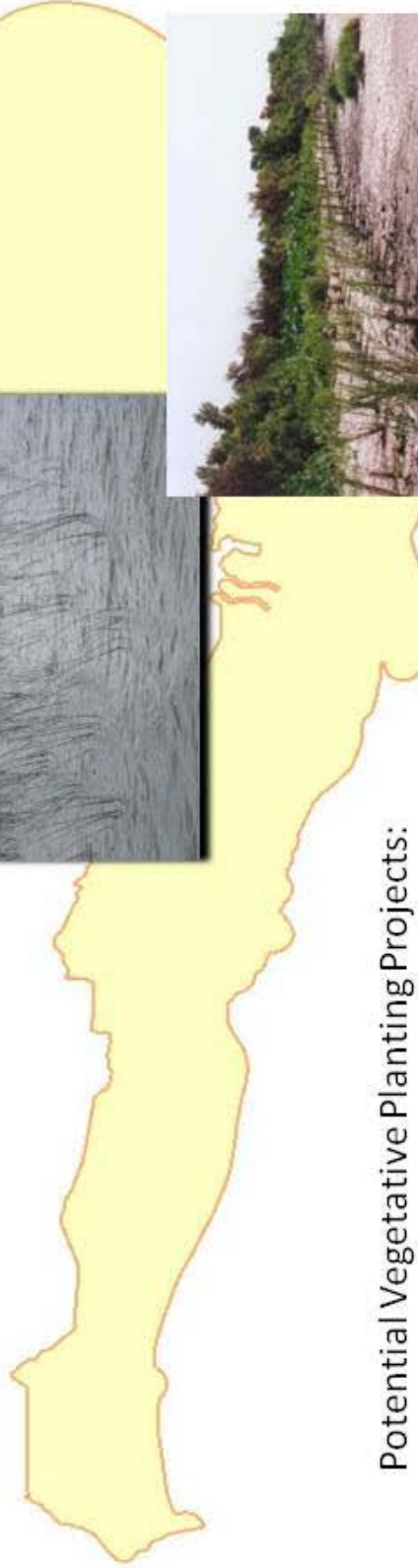
Proposed Solution: This project will provide a consistent annual mechanism for vegetative planting projects through the CWPPRA program designed to implement targeted restoration planting efforts. The project would set up an advisory panel consisting of representatives from various state and federal agencies who would assist in the selection of projects for funding. The project would also set up a mechanism by which project nominations would be submitted for consideration. The panel would provide an annual report on project activities.

Project Benefits: The equivalent of 90 acres of interior marsh and 40,000 linear feet of coastal shoreline will be planted per annum over a 10-year period to effectively create/protect a total of 779 net acres of marsh over the 20-year project life.

Project Costs: The total fully-funded cost is \$11,611,059.

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

Coastwide Planting Project PPL-20



Potential Vegetative Planting Projects:

- Shoreline stabilization
- Shallow mud flats
- Storm-damaged marshes
- Bankline stabilization
- Barrier Islands



Project Name: Cote Blanche Freshwater and Sediment Introduction and Shoreline Protection

Coast 2050 Strategy: Coastwide: maintenance of bay and lake shoreline integrity; assure vertical accumulation.

Regional: Maintain shoreline integrity and stabilize critical shoreline areas of the Teche-Vermilion Bay systems; optimize riverine flows from GIWW into marshes and minimize direct flow into bays; reduce sedimentation in bays

Project Location: Region 3, Teche/Vermilion Basin, St. Mary Parish.

Problem: Substantial loss occurred in the project area due primarily to significant increases in hydrologic energy and marine impacts within highly vulnerable, organic marsh following oil and gas canal installation. The TV-4 Project implementation reduced water level variability and the rate of marsh loss, and is also promoting the accretion of sediment entering the interior from the adjacent bays. Hurricanes Lili and Rita however caused severe impacts along with direct removal of more than 1,800 acres of emergent marsh within the project area (Barras 2004 and 2005). Significant quantities of fresh water and sediment are available from the GIWW but only a small portion currently reaches the adjacent interior marshes for a number of reasons. The targeted Marone Point shoreline experienced historic erosion rates that varied from 9-20 ft/year. If left unchecked, the rapidly eroding shoreline along East Cote Blanche Bay will lead to a conversion of the highly organic interior wetlands to open water.

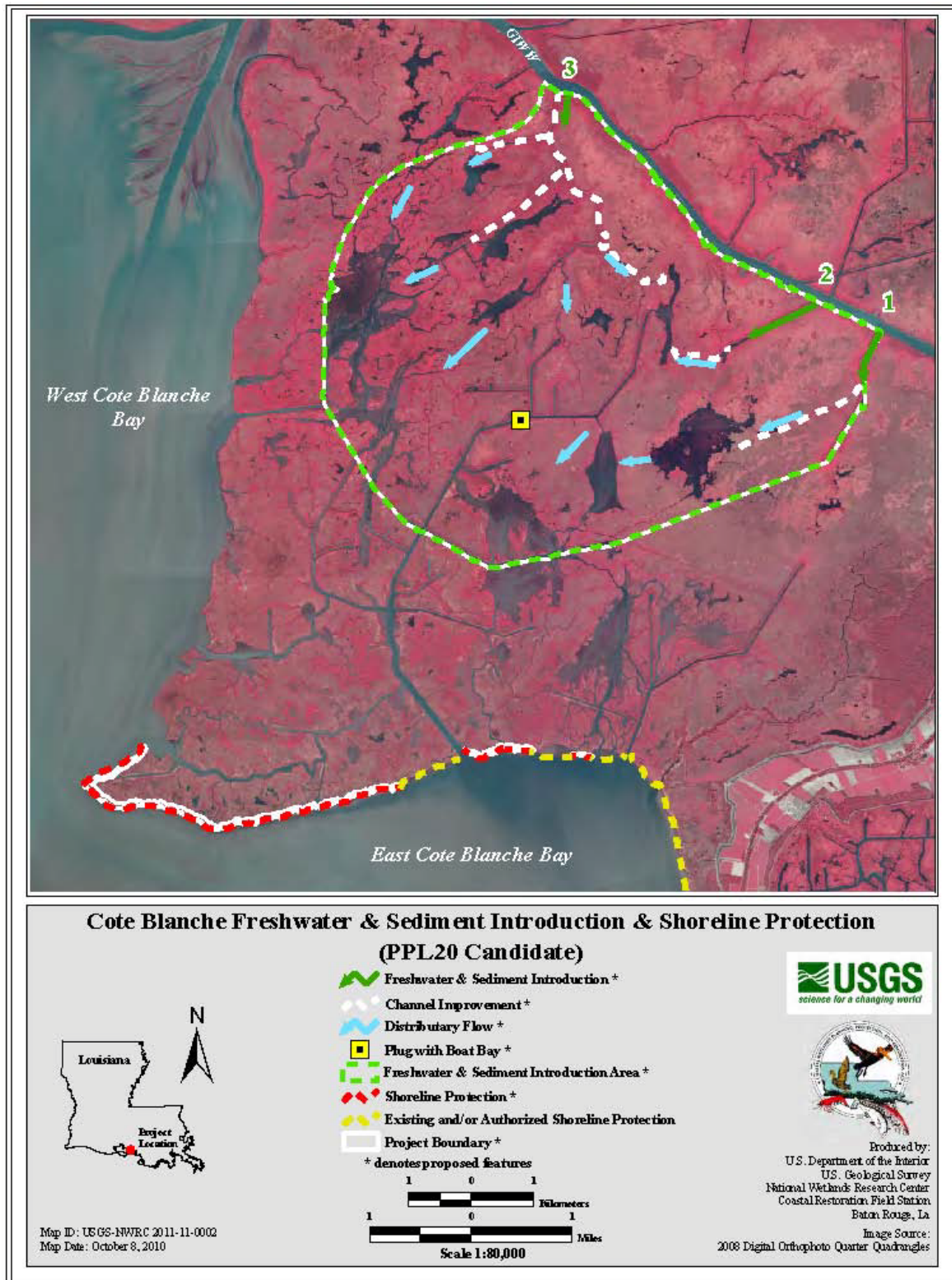
Goals: The primary goals are to: (1) tap the freshwater and sediment flow available in the GIWW to cease emergent marsh loss and promote land building, and (2) halt and/or reverse shoreline erosion.

Proposed Solution: A total of 37,043 linear feet of flow improvements along various reaches of existing channels and the installation of a structural measure to provide a net flow increase of 930 cfs diverted from the GIWW. The freshwater and sediment input would be distributed through multiple avenues to optimize flow delivery to isolated damaged areas. Project features also include 27,150 linear feet of shoreline protection along the northern shoreline of East Cote Blanche Bay.

Project Benefits: The project would result in 763 net acres protected and/or created over the 20-year project life.

Project Costs: The total fully-funded cost for the project is \$33,380,676.

Preparers of Fact Sheet: Loland Broussard, USDA/NRCS, (337) 291-3060, loland.broussard@la.usda.gov, Cindy Steyer, USDA/NRCS, (225) 389-0334, cindy.steyer@la.usda.gov, Patra Ghergich, USDA/NRCS (337) 828-1461 ext 3, patra.ghergich@la.usda.gov.



Project Name: Homeplace Marsh Creation

Coast 2050 Strategy: Coastwide: dedicated dredging for wetland creation

Project Location: Region 2, Barataria Basin, Plaquemines Parish, near Homeplace, west of hurricane protection levee

Problem: The wetlands in the Barataria Basin were historically nourished by the fresh water, sediment and nutrients delivered by the Mississippi River and the many distributary channels. Following the creation of levees along the lower river for flood control and navigation, these inputs ceased. At Homeplace, the marsh located between the hurricane protection levee and Bay Lanaux/Bay de la Cheniere is severely degraded; the lack of healthy marsh at this location poses a threat to the hurricane protection levee. Aerial photography (2008) confirms the deterioration of marsh west of the hurricane protection levee.

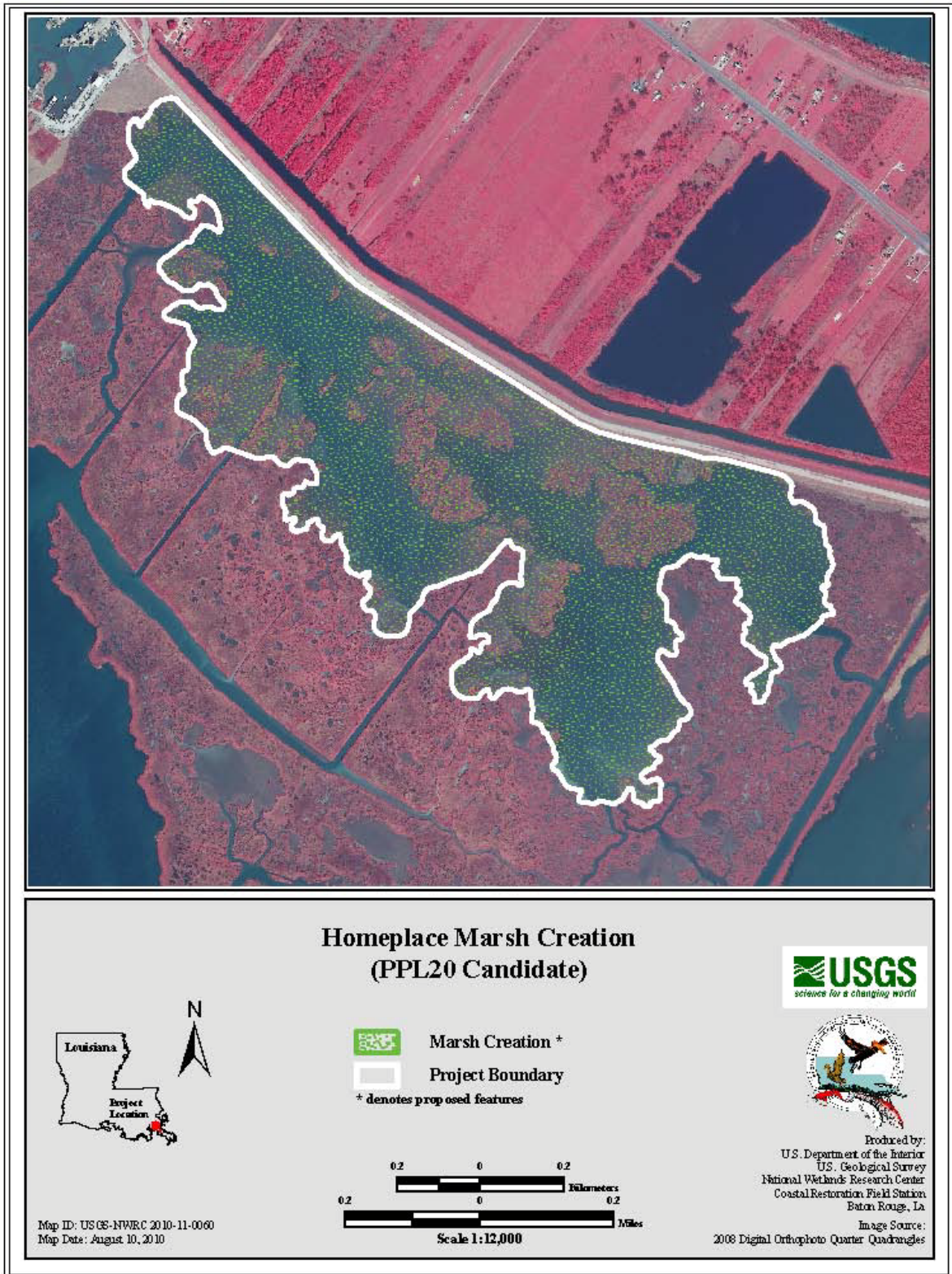
Goals: The primary goal of this project is to create 211 acres and nourish 29 acres of marsh between the hurricane protection levee and Bay Lanaux/Bay de la Cheniere. The proposed marsh creation and nourishment will help protect the hurricane protection levee.

Proposed Solution: Create 211 acres and nourish 29 acres of marsh using material excavated from the Mississippi River. All created acres will be planted with appropriate marsh vegetation.

Project Benefits: The project would result in approximately 202 net acres of marsh over the 20-year project life.

Project Costs: The total fully-funded cost for the project is \$20,156,135.

Preparer(s) of Fact Sheet: Quin Kinler, USDA/NRCS, (225) 382-2047, quin.kinler@la.usda.gov
John Jurgensen, USDA-NRCS, (318) 473-7694, john.jurgensen@la.usda.gov.



Project Name: Kelso Bayou Marsh Creation

Coast 2050 Strategy: Coastwide: dedicated dredging for wetland creation or beneficial use of dredged material from maintenance operations; stabilization of the width and depth of major navigation channels and other water bodies at their point of intersection. Mapping Unit: restore the hydrology at Kelso Bayou.

Project Location: Region 4, Calcasieu-Sabine Basin, Cameron Parish, Black Lake Mapping Unit

Problem: The most significant environmental problem affecting the marshes in this area is deterioration and conversion to open water. Marsh loss has and continues to occur as a result of salt water intrusion and sediment export (erosion). The construction of the Calcasieu Ship Channel and the GIWW greatly increased the efficiency of water exchange through Calcasieu Pass. Freshwater retention was consequently reduced and salt water is able to enter interior marshes and penetrate ever further north and west. Project-area marshes are connected to the navigation channels through a network of canals and bayous including Kelso Bayou and Alkali Ditch. Unvegetated substrate is vulnerable to increased tidal exchange and immense quantities of organic substrate are being exported. Additionally, the Calcasieu Ship Channel acts as a conduit during storm events. Recent marsh loss and scouring at the mouth of Kelso Bayou from impacts related to Hurricanes Rita and Ike allow increased salt water intrusion, tidal exchange, and storm surge impacts.

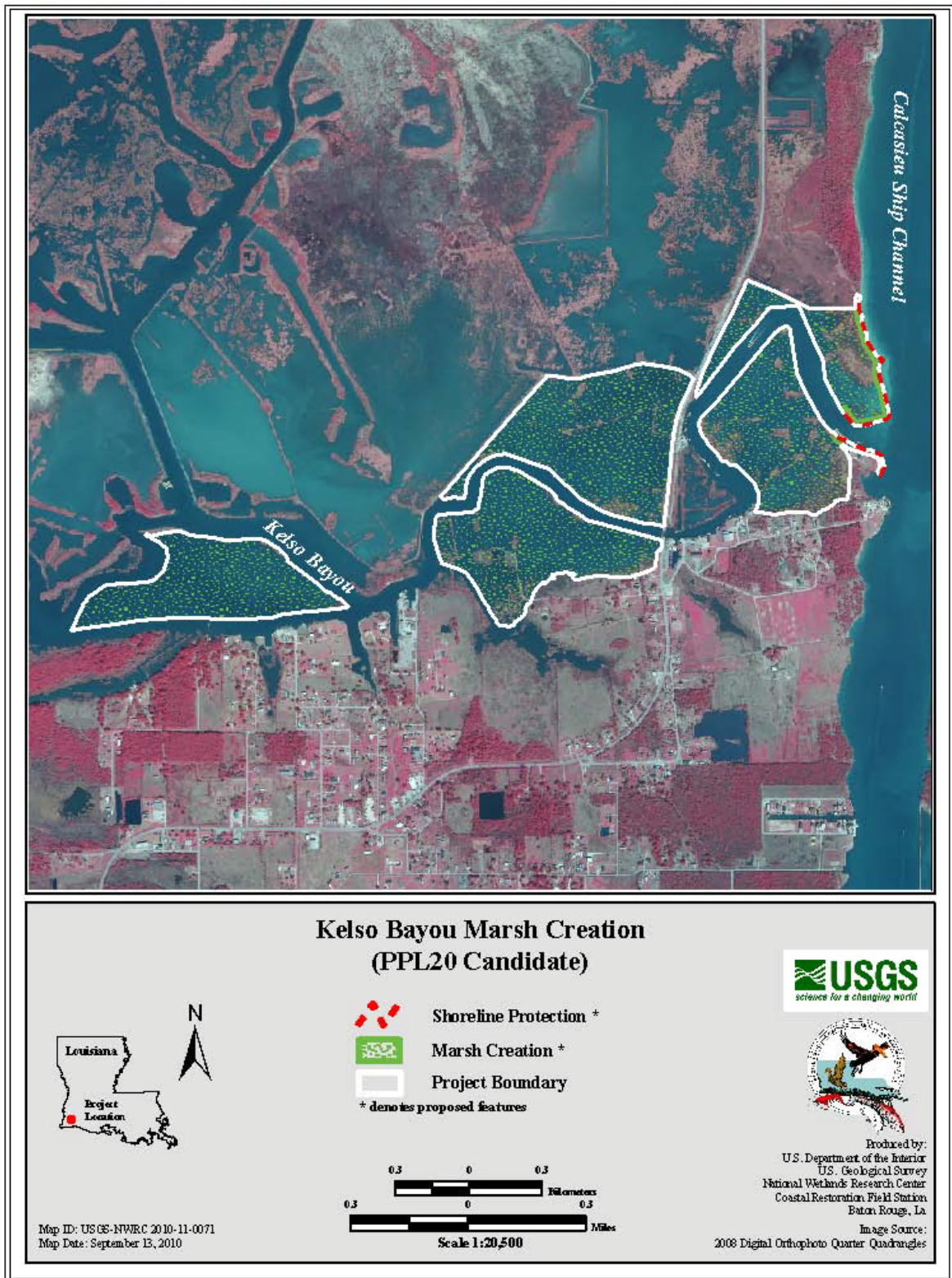
Goals: The goal of this project is to restore and protect approximately 319 acres of critically important marsh and the numerous functions provided by those acres. The proposed project will restore a portion of the historic meandering channel of Kelso Bayou and provide direct protection to Louisiana State Highway 27, the region's only northward hurricane evacuation route.

Proposed Solutions: Approximately 319 acres of marsh will be created/nourished and planted to reestablish the natural meandering banks of Kelso Bayou. Over 100 of those acres would be located between the Calcasieu Ship Channel and State Highway 27. Approximately 3,200 linear feet of rock will be used to protect the marsh creation area and the existing shoreline along the Calcasieu Ship Channel. The mouth of Kelso Bayou will be rock armored to prevent additional tidal scour.

Project Benefits: The project would result in approximately 274 net acres of marsh over the 20-year project life.

Project Costs: The total fully-funded cost for the project is \$16,632,765.

Preparer of Fact Sheet: Troy Mallach, USDA/NRCS, troy.mallach@la.usda.gov.



Project Name: Lake Lery Shoreline Marsh Creation

Coast 2050 Strategy: Coastwide: dedicated dredging for wetland creation; maintenance of bay and lake shoreline integrity; and vegetative plantings

Project Location: Region 2, Breton Basin, St. Bernard Parish, along the eastern rim of Lake Lery and extending toward Bayou Terre aux Boeufs

Problem: The marshes forming the eastern shoreline of Lake Lery and directly to the east of the former lake shoreline were severely deteriorated by Hurricane Katrina. It was estimated that wetlands in the project vicinity are being lost at the rate of -1.53% /year based on USGS data from 1985 to 2009. Without directly rebuilding these marshes, the lake itself will likely continue to grow and will extend to Bayou Terre aux Boeufs.

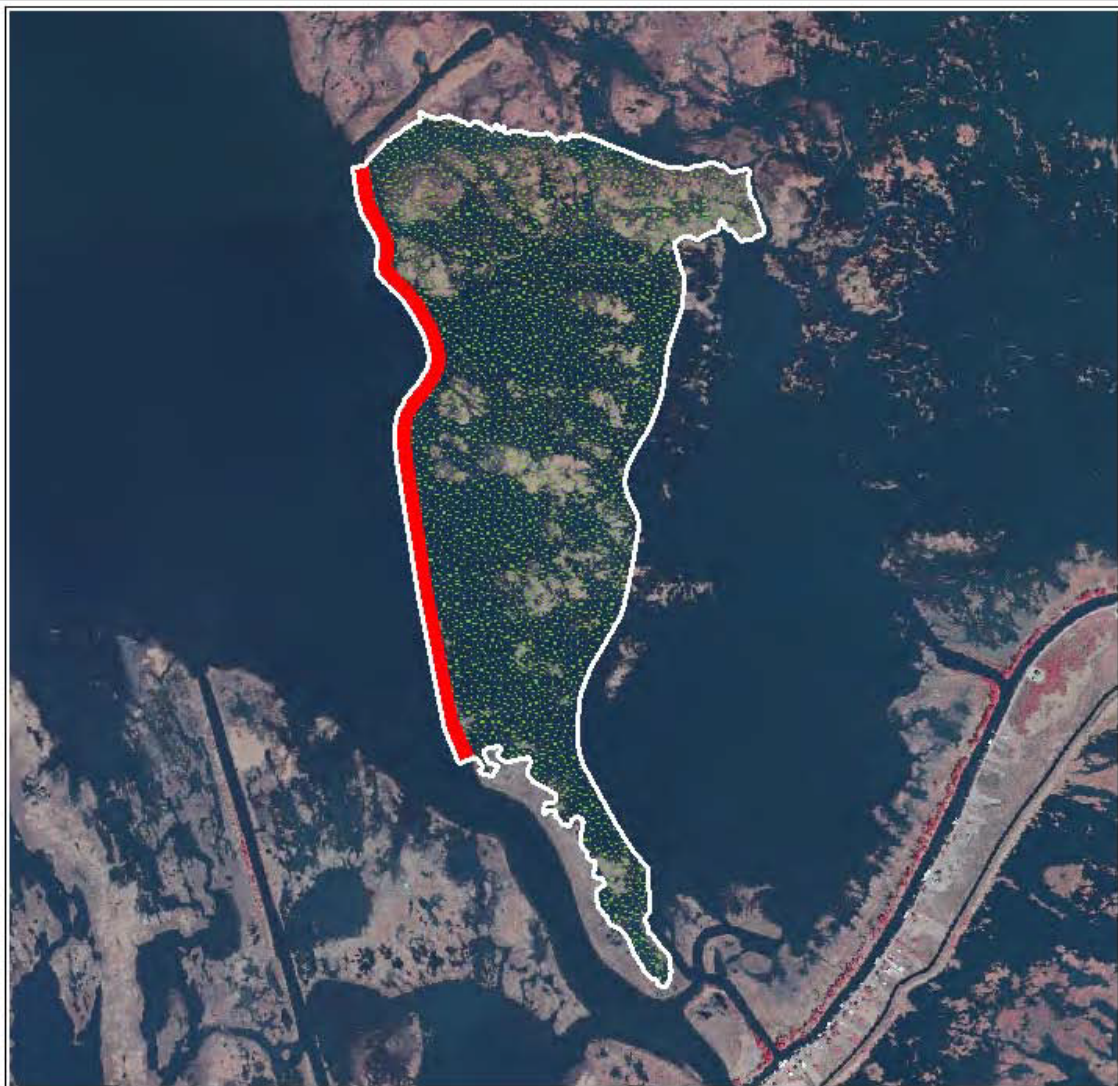
Goals: The primary goals of the project are to: (1) Create/nourish 400 acres of marsh through dedicated dredging and vegetative plantings, and (2) Restore/stabilize approximately 1.3 miles of Lake Lery eastern shoreline.

Proposed Solution: Approximately 303 acres of intermediate marsh would be created and 97 acres of existing marsh would be nourished via confined disposal of sediment dredged from Lake Lery. Approximately 20 acres of shoreline berm would be created with in-situ material along the eastern rim of the lake shaping up to a +4.5 ft crown, 30 ft wide, post-consolidation. The berm would settle to marsh elevation during the second half of the 20-year project life. Containment dikes would be breached no later than three years after construction. The created shoreline berm would be planted with shoreline vegetation to reduce erosion; and would include gapping every 1,000 feet to provide adequate aquatic organism access.

Project Benefits: The project would benefit 420 acres of intermediate marsh and water. Approximately 282 net acres of intermediate marsh would be created over the 20-year project life. This net benefit includes the restoration of approximately 1.3 miles of shoreline to reduce erosion rates along the eastern lake rim marshes of Lake Lery.

Project Costs: The total fully-funded cost for the project is \$26,649,040.

Preparers of Fact Sheet: Kimberly Clements, NOAA/NMFS, (225) 389-0508 x204, Kimberly.Clements@noaa.gov.



Lake Lery Shoreline Marsh Creation (PPL20 Candidate)



- Shoreline Berm *
 - Marsh Creation *
 - Project Boundary
- * denotes proposed features



Map ID: USGS-NWRC 2010-11-0047
Map Date: August 27, 2010



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:
2008 Digital Orthophoto Quarter Quadrangles

Project Name: Monsecour Siphon

Coast 2050 Strategy: Regional: construct most effective small diversions

Project Location: Region 2, Breton Sound Basin, Plaquemines Parish, north of Phoenix, LA

Problem: This area has been disconnected from the Mississippi River since levees were constructed during the early 20th century. The lack of overbank flooding/crevasses ensures that wetlands here do not have sufficient sediment input to maintain elevation against subsidence. In addition, drainage canals and oil and gas canals and associated spoil banks probably create some undesirable impoundment and tidal scour/saltwater intrusion in the area. In addition to impoundment caused by canals and spoil banks, the area is probably somewhat naturally impounded due to natural ridges. Aerial photography clearly demonstrates the significant loss of marsh in this area.

Goals: The project goal is to reduce wetland loss rates by reintroducing an average of 1,145 cfs, and a maximum of 2,000 cfs, of Mississippi River water into the project area to increase sediment and nutrient loading.

Proposed Solution: Construct a siphon from the Mississippi River, with 2000 cfs maximum capacity (estimated average flow=1145 cfs). The project may require additional features for delivery and outfall management.

Project Benefits: The project would benefit 12,338 acres of intermediate marsh and open water. Approximately 825 net acres of intermediate marsh would be created/protected over the 20-year project life.

Project Costs: The total fully-funded cost for the project is \$10,563,670.

Preparer(s) of Fact Sheet: Kenneth Teague, EPA, (214) 665-6687, teague.kenneth@epa.gov
Paul Kaspar, EPA, (214) 665-7459, kaspar.paul@epa.gov.



Project Name: Terrebonne Bay Marsh Creation – Nourishment

Coast 2050 Strategy: Coastwide: dedicated dredging for wetland creation; maintenance of bay and lake shoreline integrity. Regional: maintain shoreline integrity in Caillou, Terrebonne, and Timbalier Bays.

Project Location: This project is located in Region 3, Terrebonne Basin, Terrebonne Parish.

Problem: Emergent marshes north of Terrebonne Bay have been eroding as fast or faster than almost any other marshes along coastal Louisiana. As these marshes convert to shallow open water, the tidal prism will increase which will in turn increase the frequency and duration of tides north of Terrebonne Bay. This increasing tidal prism is likely to increase the future interior marsh loss rates for those marshes directly north of Terrebonne Bay. These marshes are important for their habitat values as well as serving to slow the progress of highly saline waters that threaten the lower salinity marshes north and west of Madison Bay and in the Lake Boudreaux basin. The continued loss of these marshes has directly contributed to the ongoing flooding problems of many communities along Bayou Terrebonne including the town of Montegut.

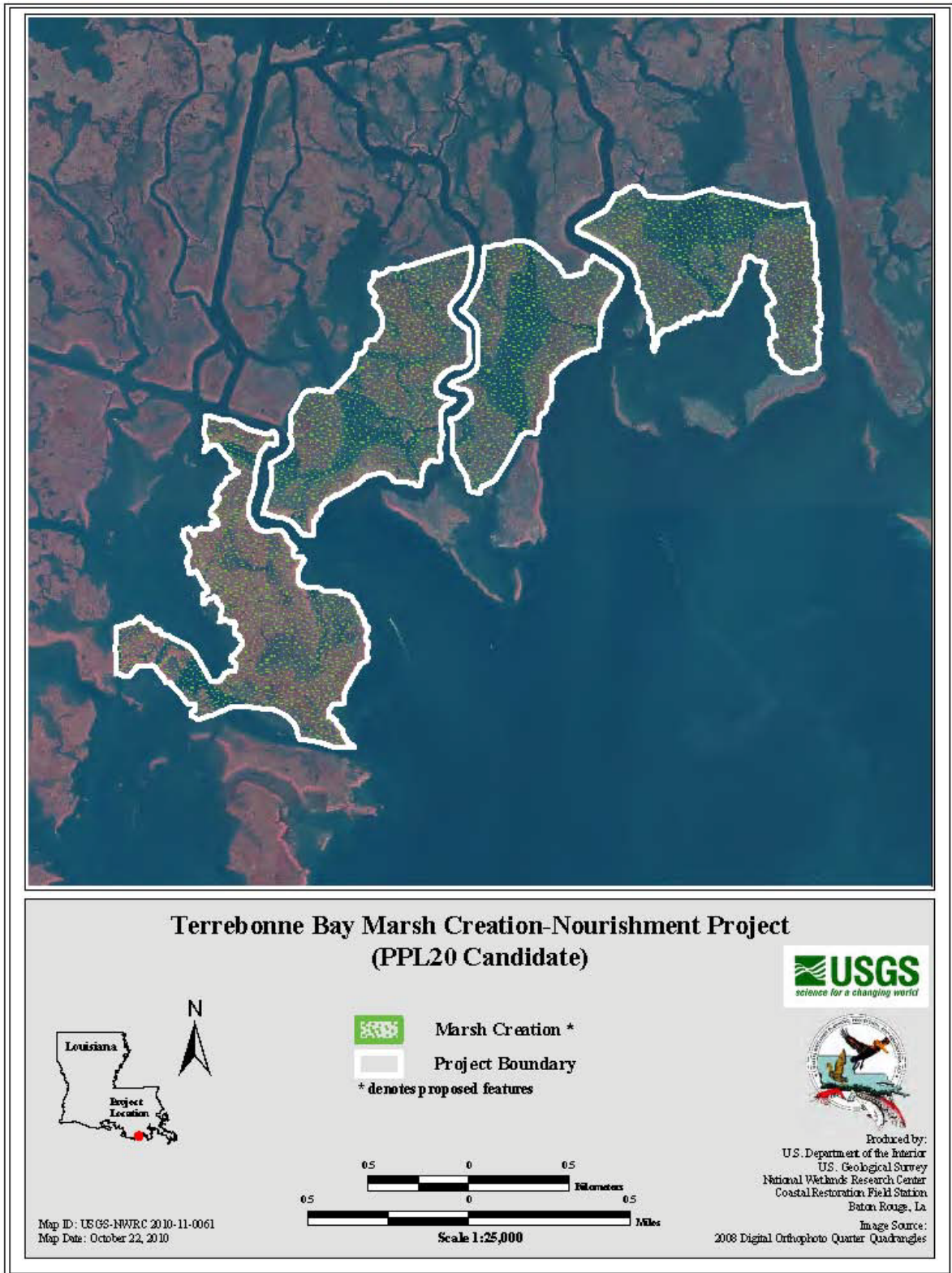
Goals: The primary goal of this project is to fill shallow open water areas and nourish marshes north of Terrebonne Bay/Lake Barre thereby reducing the tidal prism north of Terrebonne Bay and interior land loss from tidal scouring. Specific Goals: (1) create 365 acres of intertidal marsh in shallow open water and nourish 299 acres of fragmented marsh within the project area reducing water exchange between Terrebonne Bay and interior lakes during tidal and small storm events, and (2) reduce erosion along 16,000 ft of the northern Terrebonne Bay shoreline.

Proposed Solution: The proposed features of this project consist of filling approximately 365 acres of shallow open water and nourishing approximately 299 acres of very low or fragmented marsh with material hydraulically dredged from Terrebonne Bay/Lake Barre. Containment dikes will be degraded/gapped within 3 years of construction to allow for greater tidal and estuarine organism access. This project could be one part of a phased comprehensive plan to protect the northern shoreline of Terrebonne Bay and the interior marshes from further erosion and reduce the tidal prism.

Project Benefits: The project would result in approximately 353 net acres of marsh over the 20-year project life.

Project Costs: The total fully-funded cost for the project is \$27,414,401.

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



Project Name: Unknown Pass to Rigolets Shoreline Protection

Coast 2050 Strategy: Coastwide: maintenance of bay and lake shoreline integrity. Regional: maintain Eastern Orleans land bridge by marsh creation and shoreline protection and maintain shoreline integrity of Lake Borgne.

Project Location: Region 1, Lake Pontchartrain Basin, Orleans Parish, East Orleans land bridge. Mapping Unit: along the northwest shoreline of Lake Borgne bounded by the Rigolets, Unknown Pass, the GIWW, and Lake Borgne.

Problem: High wave energy, sea level rise and subsidence levels are impacting the wetland shorelines and inland marshes of lakes Pontchartrain, Borgne and St. Catherine, and Chef Pass, the Rigolets. These water bodies all outline the East Orleans Land bridge and are located in the Pontchartrain Basin. Identified in both Coast 2050 and the LCA, this critical land bridge forms a barrier between Lake Pontchartrain and Lake Borgne, an eventual passage to the Gulf of Mexico. Along Lake Borgne between Unknown Pass and the Rigolets, there has been continued loss of shoreline and inland ponds have widened. This area holds the majority of remaining, contiguous wetland acres located in Orleans Parish.

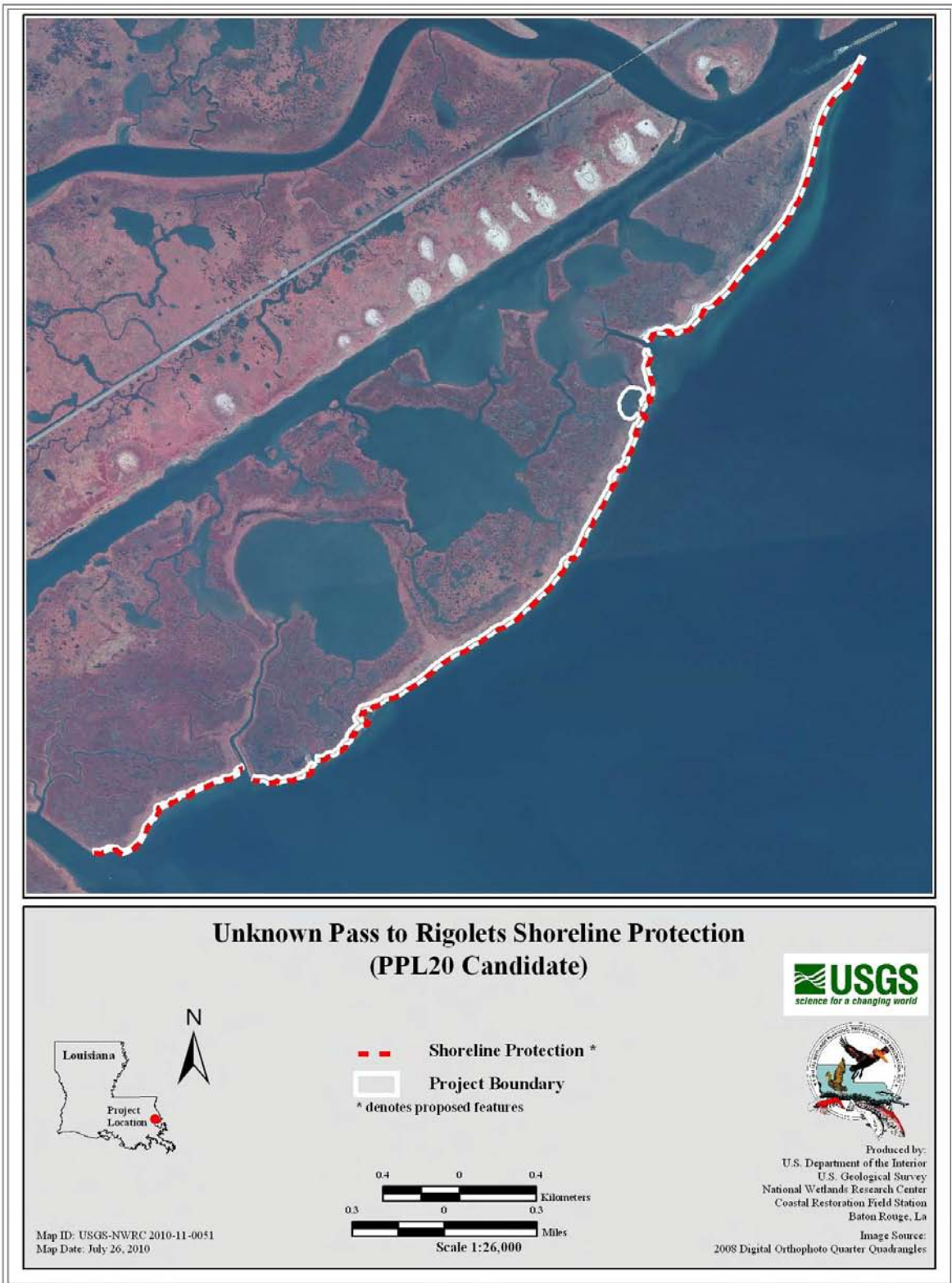
Goals: The primary goals of this project are to maintain the East Orleans land bridge by stopping shoreline erosion and to protect inland wetlands between Lake Borgne and Lake St. Catherine.

Proposed Solutions: The proposed feature will consist of the construction of a rock revetment (22,062 feet) along the shoreline of Lake Borgne.

Project Benefits: The project would result in 39 net acres of marsh over the 20-year project life.

Project Costs: The total fully-funded cost for the project is \$27,367,360.

Preparer(s) of Fact Sheet: John Jurgensen, USDA/NRCS, (318) 473-7694, john.jurgensen@la.usda.gov



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: EcoSystems Wave Attenuator Demonstration

Coast 2050 Strategy: Maintenance of bay and lake shoreline integrity

Potential Demonstration Project Location: Gulf, bay, or lake shorelines; specific site to be determined; applicable coastwide

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

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

Proposed Solution: Walter Marine has developed a method of protection against shoreline erosion using the EcoSystems Wave Attenuator. This product is a unit of EcoSystems discs mounted on a piling with an innovative anchoring system, which dissipates wave action. The EcoSystems Wave Attenuator could be applicable for use as shoreline protection or in place of a channel plug. The intent of this demonstration project is to place the EcoSystems Wave Attenuator in an area where traditional restoration strategies would have used a plug or sheetpile for a channel closure. The project will evaluate the effectiveness of reducing wave energy and shoreline erosion. As a shoreline protection feature, a replicate treatment of double rows of pilings (6' OC) would be driven and 4-foot diameter disks mounted on each piling along approximately 500 LF of shoreline for each treatment.

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

Project Costs: The total fully-funded cost for the project is \$2,345,866.

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

Project Name: Floating Islands Demonstration

Coast 2050 Strategy: Maintenance of bay and lake shoreline integrity; vegetative planting; terracing

Potential Demonstration Project Location: Coastwide

Problem: Excessive erosion of bay and lake rims expose thousands of acres of interior marshes to increased erosion rates and severe hydrologic change. In addition, the loss of wetlands resulting from the direct effects of wave action is exacerbated over large open bodies of water where fetch distances are great. Highly organic interior marshes have limited options for restoration because of poor soil conditions. Shoreline erosion rates have been measured in excess of 30 feet per year in some areas of coastal Louisiana. The need for stabilization in critical areas was noted in all four Coast 2050 regions.

Goals: The goal of this demonstration project is to restore and enhance interior marsh shorelines and maintain exchange and interface with estuarine systems. Additionally, some accretion may occur and build emergent marsh.

Proposed Solution: The Floating Island is a multi-faceted marsh restoration and enhancement system that would absorb and deflect wave energy, protect and enhance vegetation, protect and create emergent marsh, trap sediment and provide nursery habitat. The islands are made from recycled PET plastic and adhered together with polyurethane marine foam. They are connected to each other and anchored into the soil with marine/earth anchor systems. Project effectiveness would be monitored and evaluated after construction. Shoreline surveys and transects will be conducted during years 1, 3, and 5 to monitor shoreline movement and water depths behind the structure. Annual inspection will include condition of the mat and percentage of the mat that is vegetated, as well as notes if the mats are floating or attached to the water bottom.

Project Benefits: Absorb and deflect wave energy; protect and enhance existing or planted shoreline vegetation; Allow ingress and egress of aquatic species; collect sediment by reducing wave energy; reduce interior marsh loss.

Project Costs: The total fully-funded cost for the project is \$1,977,995.

Preparer(s) of Fact Sheet: Jason Kroll, USDA/NRCS, (225) 389-0347, jason.kroll@la.usda.gov
Nicole Waguespack, (225) 923-2194, nicole@floatingislandES.com

Project Name: Wave Robber Demonstration

Coast 2050 Strategy: Maintenance of bay and lake shoreline integrity

Potential Demonstration Project Location Region 2, Barataria Basin, Lafourche Parish, southwestern shore of Little Lake

Problem: The Wave Suppressor Sediment Collection System (Wave Robber) addresses two critical areas of need in coastal Louisiana: (1) the Wave Robber is designed to protect the shorelines and wetlands from erosion caused by wave action or tidal surge; and (2) the Wave Robber system can assist in the rebuilding of shorelines and restoration of wetlands lost from wave energy or tidal surge.

Goals: The primary goal of this demonstration project is to manufacture, deploy and test an alternative method of shoreline protection equivalent to traditional methods, while trapping ambient sediments to facilitate expansion of emergent marsh along estuary shorelines.

Proposed Solution: The Wave Robber system serves as a barrier to disrupt the wave/tidal flow into a shoreline while at the same time allowing sediment to be carried through the system by the wave action and water currents. Sediment is trapped and deposited between the system and the shoreline. Each Wave Robber unit is constructed of high density polyethylene plastic that is injected into a mold. Assuming a 3ft water depth, the units would measure 6ft tall, 12ft deep and 10ft wide. If proven successful, the unit can be modified to match other site conditions. This project would install 50 Wave Robber units along three different shorelines (500 ft at each shoreline), with two different spacing patterns at each site.

Project Benefits: Potential project benefits include: (1) reduction in shoreline erosion associated with wave energy, and (2) trapped sediment would consolidate to form a solid base for the establishment of emergent marsh.

Project Cost: The total fully-funded cost for the project is \$1,718,192.

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

V. PROJECT SELECTION

On January 19, 2011, the CWPPRA Task Force made its selection for the 20th PPL. The CWPPRA Task Force selection for the 20th PPL is shown in Table 6.

Table 6: The 20th Priority Project List

	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	Fully-Funded Phase II/Increment I Total Cost (3 yr. C&QRM&M)	Cumulative Phase II/Increment I	Average Annual Habitat Units (AAHUs)
PO - 104	Bayou Bonfouca Marsh Creation	MC	USFWS	\$23,875,866	\$2,567,244	\$2,567,244	\$21,308,622	\$21,308,622			195
LA -39	Coastwide Planting	VP	NRCS	\$11,611,059	\$156,945	\$2,724,189	\$11,454,114	\$32,762,736	\$4,141,518	\$25,127,470	189
CS -54	Cameron-Creole Watershed Grand Bayou Marsh Creation	MC	USFWS	\$23,405,612	\$2,376,789	\$5,100,978	\$21,028,823	\$53,791,559	\$20,501,589	\$45,629,059	214
TE -83	Terrebonne Bay Marsh Creation – Nourishment	MC	USFWS	\$27,414,401	\$2,901,750	\$8,002,728	\$24,512,651	\$78,304,210	\$24,216,308	\$69,845,367	224
CS -53	Kelso Bayou Marsh Creation	MC/ SP	NRCS	\$16,632,765	\$2,360,609	\$10,363,337	\$14,272,156	\$92,576,366	\$12,813,424	\$82,658,791	168
	TOTALS			\$102,939,703	\$10,363,337		\$92,576,366				990

Project Physical Type:

BI=Barrier Island
HR=Hydrologic Restoration
MC=Marsh Creation
SP=Shoreline Protection
VP=Vegetative Plantings

Sponsoring Agencies:

USACE=US Army Corps of Engineers
USEPA=Environmental Protection Agency
NMFS=National Marine Fisheries Service
NRCS=Natural Resources Conservation Service
USFWS=US Fish and Wildlife Service

VI. DESCRIPTION OF PROJECTS SELECTED FOR PHASE I FUNDING

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

Project Name: Bayou Bonfouca Marsh Creation

Coast 2050 Strategy: Coastwide: dedicated dredging for wetland creation; maintenance of bay and lake shoreline integrity

Regional: Dedicated delivery of sediment for marsh building; maintain shoreline integrity of Lake Pontchartrain. Mapping Unit: Maintain Shoreline Integrity

Project Location: Region 1, St. Tammany Parish, Pontchartrain Basin, parts of the project located within Big Branch Marsh National Wildlife Refuge adjacent to Bayou Bonfouca.

Problem: The marsh in this area was fairly stable prior to Hurricane Katrina in August 2005. There was extensive damage to the marsh along the north shore of Lake Pontchartrain and especially localized in the marshes near Bayou Bonfouca when the storm surge removed many acres of marsh. Marsh loss rates should increase in the marsh surrounding these newly created open water areas due to an increase in wind driven fetch. Shoreline erosion rates in this area seem to be very low, currently there is one large breach and several smaller ones. Many more are imminent. These breaches provide direct connection between the fresher interior marshes and higher saline waters of Lake Pontchartrain. The breaches in the bank line should be filled before they grow to become a major exchange point causing an increase in interior loss rates.

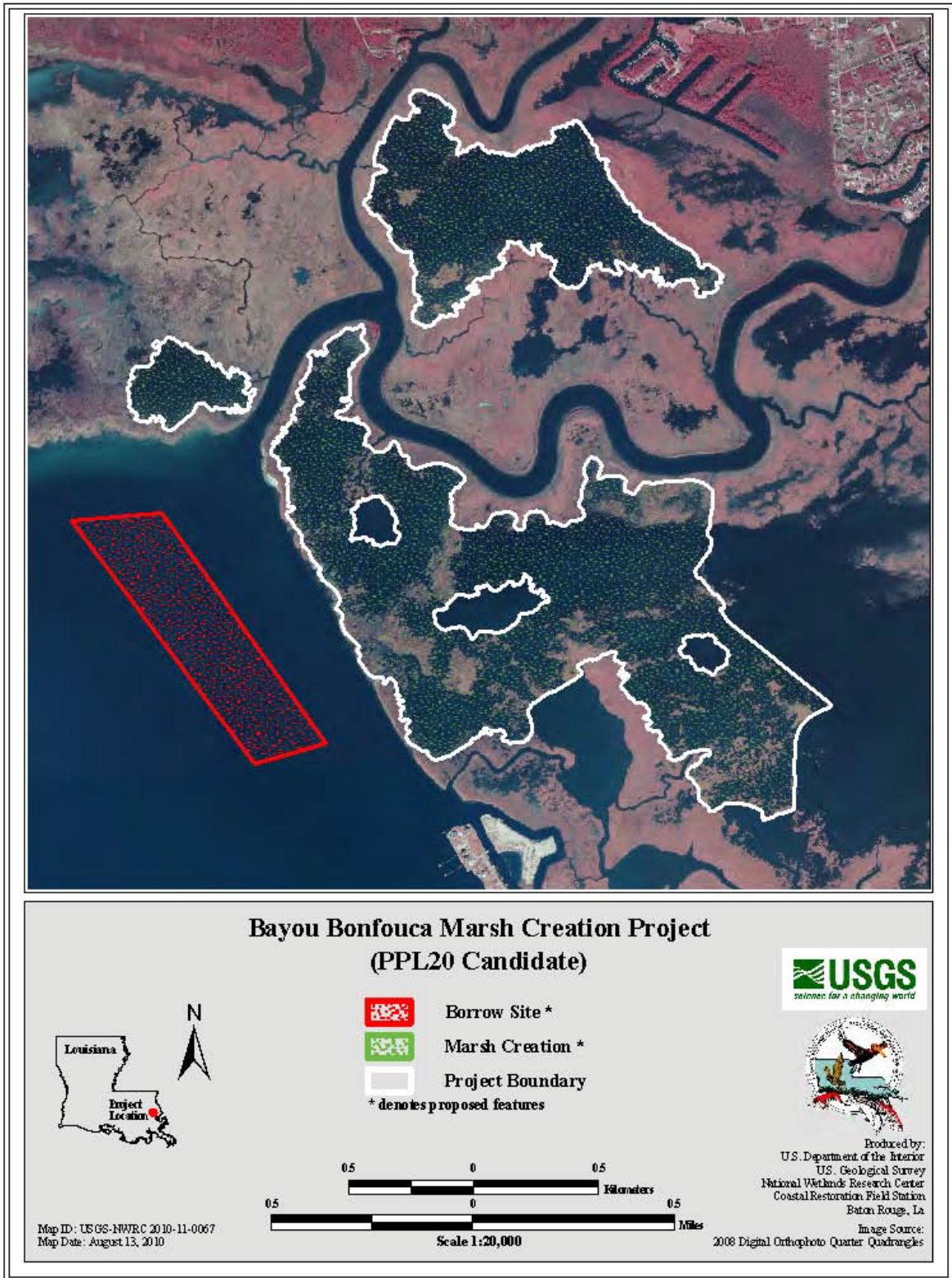
Goals: The primary goal of the project is to create 533 acres and nourish 42 acres of low salinity brackish marsh in open water areas adjacent to Bayou Bonfouca with sediment pumped from Lake Pontchartrain.

Proposed Solution: This project would consist of placing sediment, hydraulically dredged from Lake Pontchartrain, in open water sites to a height of +1.2 NAVD 88 to create 533 acres and nourish approximately 42 acres of marsh. Several historic marsh ponds have been identified and would be restored. Tidal creeks are also proposed to connect these ponds to facilitate water exchange and fisheries access. Containment dikes would be sufficiently gapped or degraded to allow for fisheries access no later than three years post construction.

Project Benefits: The project would result in approximately 424 net acres of intermediate marsh over the 20-year project life.

Project Costs: The total fully-funded cost for the project is \$23,875,866.

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



Project Name: Cameron — Creole Watershed Grand Bayou Marsh Creation

Coast 2050 Strategy: Coastwide: dedicated dredging for wetland creation

Project Location: Region 4, Calcasieu-Sabine Basin, Cameron Parish, 6 miles northeast from Cameron, LA, on the Cameron Prairie NWR and Miami Corporation north of Grand Bayou.

Problem: Approximately 14,390 acres (32%) of the Cameron-Creole Watershed Project (CCWP) marshes were lost to open water from 1932 to 1990 at an average loss rate of 248 acres/year (0.55 percent/year) due to subsidence and saltwater intrusion from the Calcasieu Ship Channel. The CCWP was implemented by the NRCS in 1989 to reduce saltwater intrusion and stimulate restoration through revegetation. Hurricanes Rita and Ike in 2005 and 2008 breached the watershed levee scouring the marsh and allowing higher Calcasieu Lake salinities to enter the watershed causing more land loss. The Calcasieu-Sabine Basin lost 28 mi² (17,920 acres) (4.4%) as a result of Hurricane Rita (Barras et al. 2006). Land loss is estimated to be 1.33 percent/year based on USGS data from 1985 to 2009 within the extended project boundary.

Goals: Project goals include restoring and nourishing marsh with dedicated dredged material from Calcasieu Lake to benefit fish and wildlife resources in the Cameron Prairie National Wildlife Refuge and adjacent brackish marshes of the Calcasieu Lake estuary. Specific phase 0 goals include creating 609 acres of brackish marsh and nourishing 7 acres of brackish marsh.

Proposed Solution: Place approximately 3 million cubic yards of material into two marsh creation areas north of Grand Bayou to restore 609 acres and nourish 7 acres of brackish marsh. Material would be dredged from a borrow site proposed in Calcasieu Lake. The borrow site would be designed to avoid and minimize impacts to oysters and other sensitive aquatic habitat. The hurricane-scoured marsh within the project area is very shallow (averaging 1.2 feet deep) making it ideal for marsh restoration with sediment because more marsh per volume of dredged material could be restored. Tidal creeks will be constructed prior to placement of dredge material and retention levees would be gapped to support estuarine fisheries access and to achieve a functional marsh.

Project Benefits: The project would result in approximately 534 net acres of brackish marsh over the 20-year project life.

Project Costs: The total fully-funded cost is \$23,405,612.

Preparers of Fact Sheet: Angela Trahan, USFWS, (337) 291-3137, Angela_Trahan@fws.gov
Darryl Clark, USFWS, (337) 291-3111, Darryl_Clark@fws.gov.



Cameron-Creole Watershed Grand Bayou Marsh Creation (PPL20 Candidate)



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:
2008 Digital Orthophoto Quarter Quadrangles

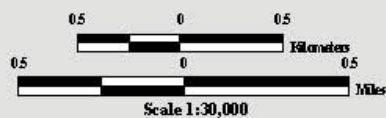


Marsh Creation *



Project Boundary

* denotes proposed features



Map ID: USGS-NWRC 2010-11-0078
Map Date: August 16, 2010

Project Name: Coastwide Planting

Coast 2050 Strategy: Coastwide: vegetative planting

Project Location: Coastwide

Problem: The coastal restoration community has long recognized the benefits of vegetative plantings in restoration. Many marsh creation and most terracing projects require planting to insure success. Coastal shoreline plantings have also proven to be very effective and some have demonstrated the ability to not only stop shoreline erosion but to facilitate accretion. Recent hurricane events have exposed a need to have a mechanism in place where large-scale planting efforts can be deployed in a timely manner to specifically target areas of need anywhere along the coast. Although the CWPPRA program can fund specific large-scale planting projects, the normal program cycle for individual projects can delay needed restoration plantings for a number of years.

Goals: The goals of this project are to facilitate a consistent and responsive planting effort in coastal Louisiana that is flexible enough to routinely plant on a large scale and be able to rapidly respond to “hot spots” following storms or other damaging events.

Proposed Solution: This project will provide a consistent annual mechanism for vegetative planting projects through the CWPPRA program designed to implement targeted restoration planting efforts. The project would set up an advisory panel consisting of representatives from various state and federal agencies who would assist in the selection of projects for funding. The project would also set up a mechanism by which project nominations would be submitted for consideration. The panel would provide an annual report on project activities.

Project Benefits: The equivalent of 90 acres of interior marsh and 40,000 linear feet of coastal shoreline will be planted per annum over a 10-year period to effectively create/protect a total of 779 net acres of marsh over the 20-year project life.

Project Costs: The total fully-funded cost is \$11,611,059.

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

Coastwide Planting Project PPL-20



Potential Vegetative Planting Projects:

- Shoreline stabilization
- Shallow mud flats
- Storm-damaged marshes
- Bankline stabilization
- Barrier Islands



Project Name: Kelso Bayou Marsh Creation

Coast 2050 Strategy: Coastwide: dedicated dredging for wetland creation or beneficial use of dredged material from maintenance operations; stabilization of the width and depth of major navigation channels and other water bodies at their point of intersection. Mapping Unit: restore the hydrology at Kelso Bayou.

Project Location: Region 4, Calcasieu-Sabine Basin, Cameron Parish, Black Lake Mapping Unit

Problem: The most significant environmental problem affecting the marshes in this area is deterioration and conversion to open water. Marsh loss has and continues to occur as a result of salt water intrusion and sediment export (erosion). The construction of the Calcasieu Ship Channel and the GIWW greatly increased the efficiency of water exchange through Calcasieu Pass. Freshwater retention was consequently reduced and salt water is able to enter interior marshes and penetrate ever further north and west. Project-area marshes are connected to the navigation channels through a network of canals and bayous including Kelso Bayou and Alkali Ditch. Unvegetated substrate is vulnerable to increased tidal exchange and immense quantities of organic substrate are being exported. Additionally, the Calcasieu Ship Channel acts as a conduit during storm events. Recent marsh loss and scouring at the mouth of Kelso Bayou from impacts related to Hurricanes Rita and Ike allow increased salt water intrusion, tidal exchange, and storm surge impacts.

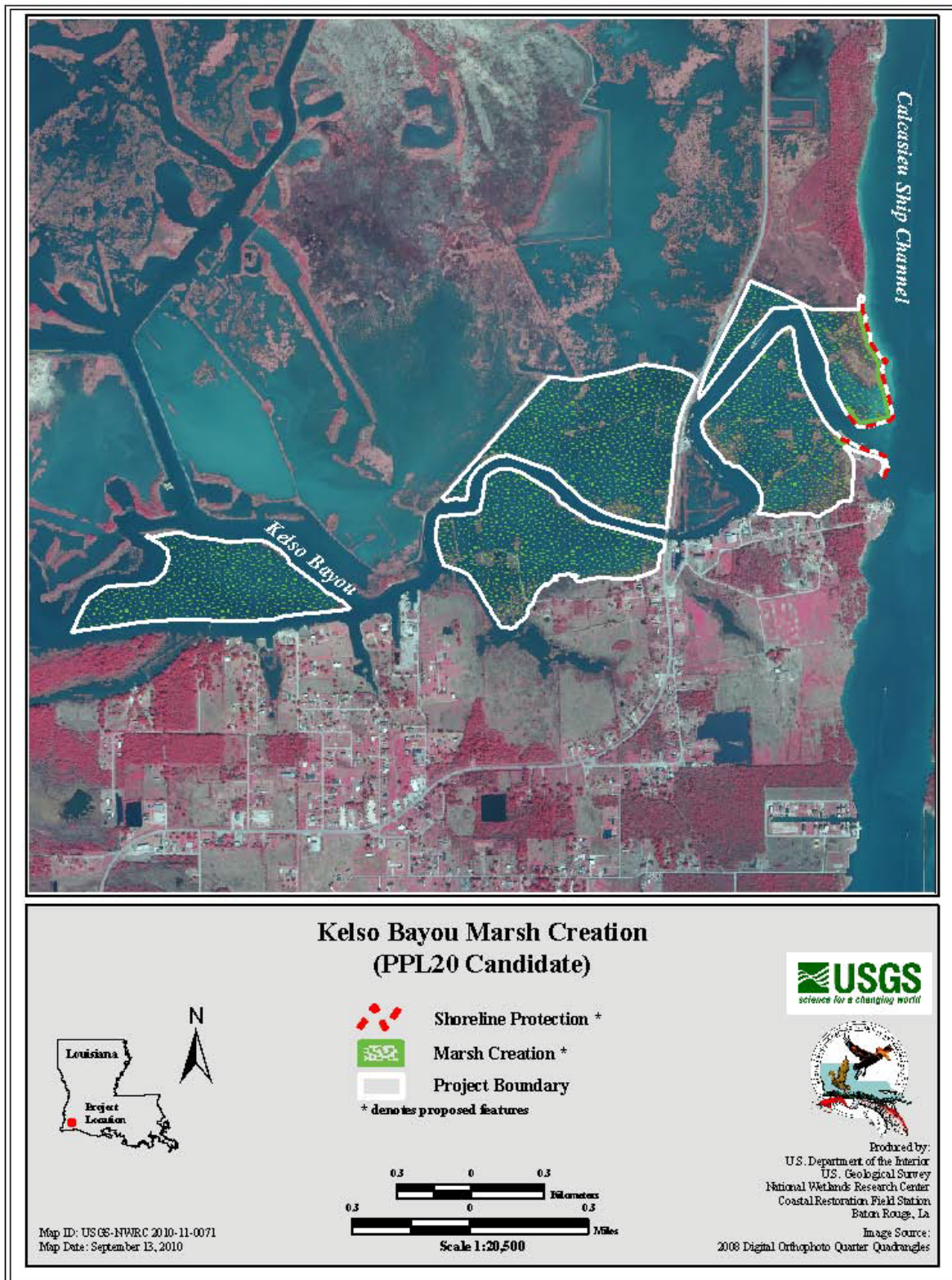
Goals: The goal of this project is to restore and protect approximately 319 acres of critically important marsh and the numerous functions provided by those acres. The proposed project will restore a portion of the historic meandering channel of Kelso Bayou and provide direct protection to Louisiana State Highway 27, the region's only northward hurricane evacuation route.

Proposed Solutions: Approximately 319 acres of marsh will be created/nourished and planted to reestablish the natural meandering banks of Kelso Bayou. Over 100 of those acres would be located between the Calcasieu Ship Channel and State Highway 27. Approximately 3,200 linear feet of rock will be used to protect the marsh creation area and the existing shoreline along the Calcasieu Ship Channel. The mouth of Kelso Bayou will be rock armored to prevent additional tidal scour.

Project Benefits: The project would result in approximately 274 net acres of marsh over the 20-year project life.

Project Costs: The total fully-funded cost for the project is \$16,632,765.

Preparer of Fact Sheet: Troy Mallach, USDA/NRCS, troy.mallach@la.usda.gov.



Project Name: Terrebonne Bay Marsh Creation – Nourishment

Coast 2050 Strategy: Coastwide: dedicated dredging for wetland creation; maintenance of bay and lake shoreline integrity. Regional: maintain shoreline integrity in Caillou, Terrebonne, and Timbalier Bays.

Project Location: This project is located in Region 3, Terrebonne Basin, Terrebonne Parish.

Problem: Emergent marshes north of Terrebonne Bay have been eroding as fast or faster than almost any other marshes along coastal Louisiana. As these marshes convert to shallow open water, the tidal prism will increase which will in turn increase the frequency and duration of tides north of Terrebonne Bay. This increasing tidal prism is likely to increase the future interior marsh loss rates for those marshes directly north of Terrebonne Bay. These marshes are important for their habitat values as well as serving to slow the progress of highly saline waters that threaten the lower salinity marshes north and west of Madison Bay and in the Lake Boudreaux basin. The continued loss of these marshes has directly contributed to the ongoing flooding problems of many communities along Bayou Terrebonne including the town of Montegut.

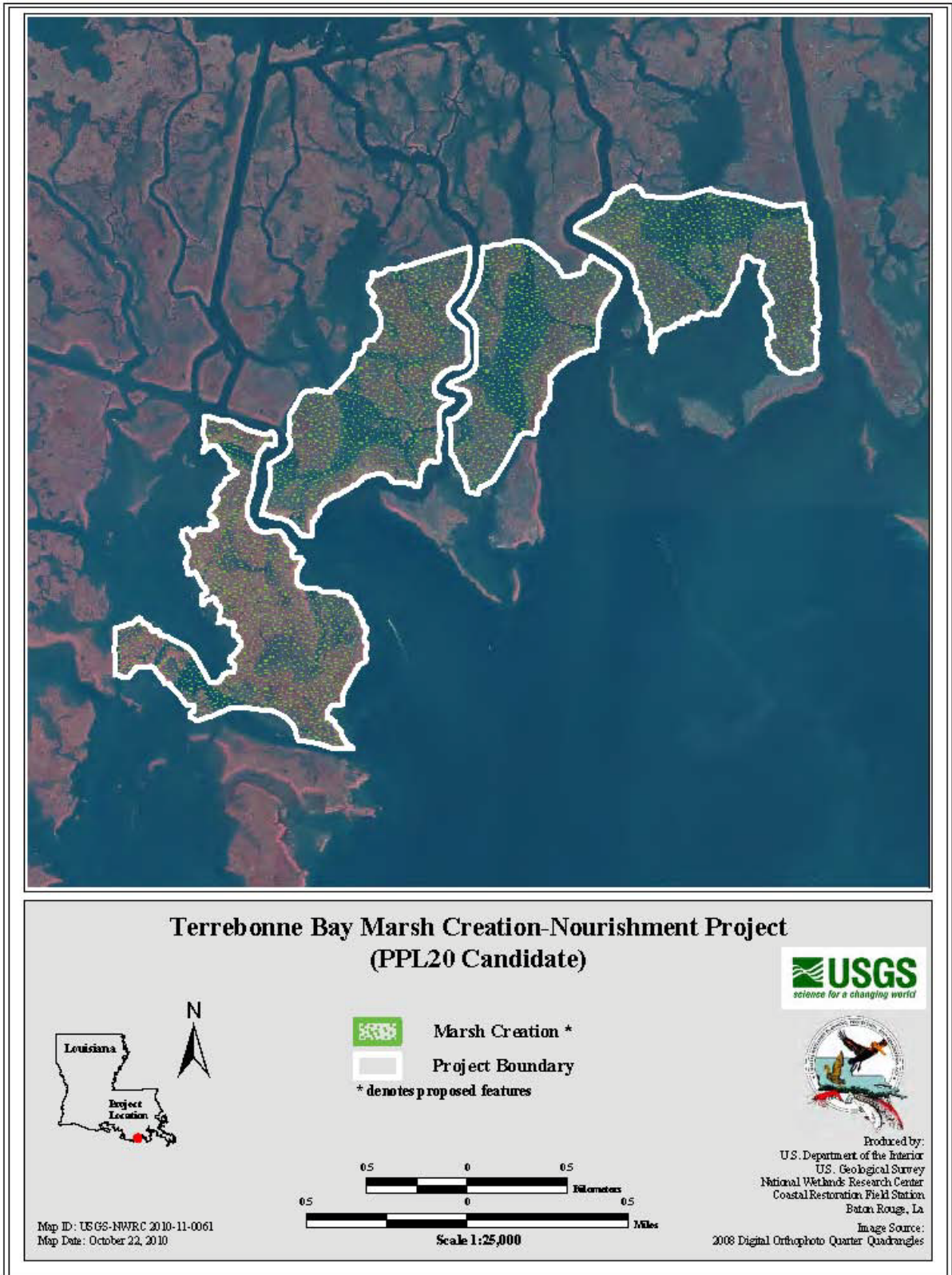
Goals: The primary goal of this project is to fill shallow open water areas and nourish marshes north of Terrebonne Bay/Lake Barre thereby reducing the tidal prism north of Terrebonne Bay and interior land loss from tidal scouring. Specific Goals: (1) create 365 acres of intertidal marsh in shallow open water and nourish 299 acres of fragmented marsh within the project area reducing water exchange between Terrebonne Bay and interior lakes during tidal and small storm events, and (2) reduce erosion along 16,000 ft of the northern Terrebonne Bay shoreline.

Proposed Solution: The proposed features of this project consist of filling approximately 365 acres of shallow open water and nourishing approximately 299 acres of very low or fragmented marsh with material hydraulically dredged from Terrebonne Bay/Lake Barre. Containment dikes will be degraded/gapped within 3 years of construction to allow for greater tidal and estuarine organism access. This project could be one part of a phased comprehensive plan to protect the northern shoreline of Terrebonne Bay and the interior marshes from further erosion and reduce the tidal prism.

Project Benefits: The project would result in approximately 353 net acres of marsh over the 20-year project life.

Project Costs: The total fully-funded cost for the project is \$27,414,401.

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



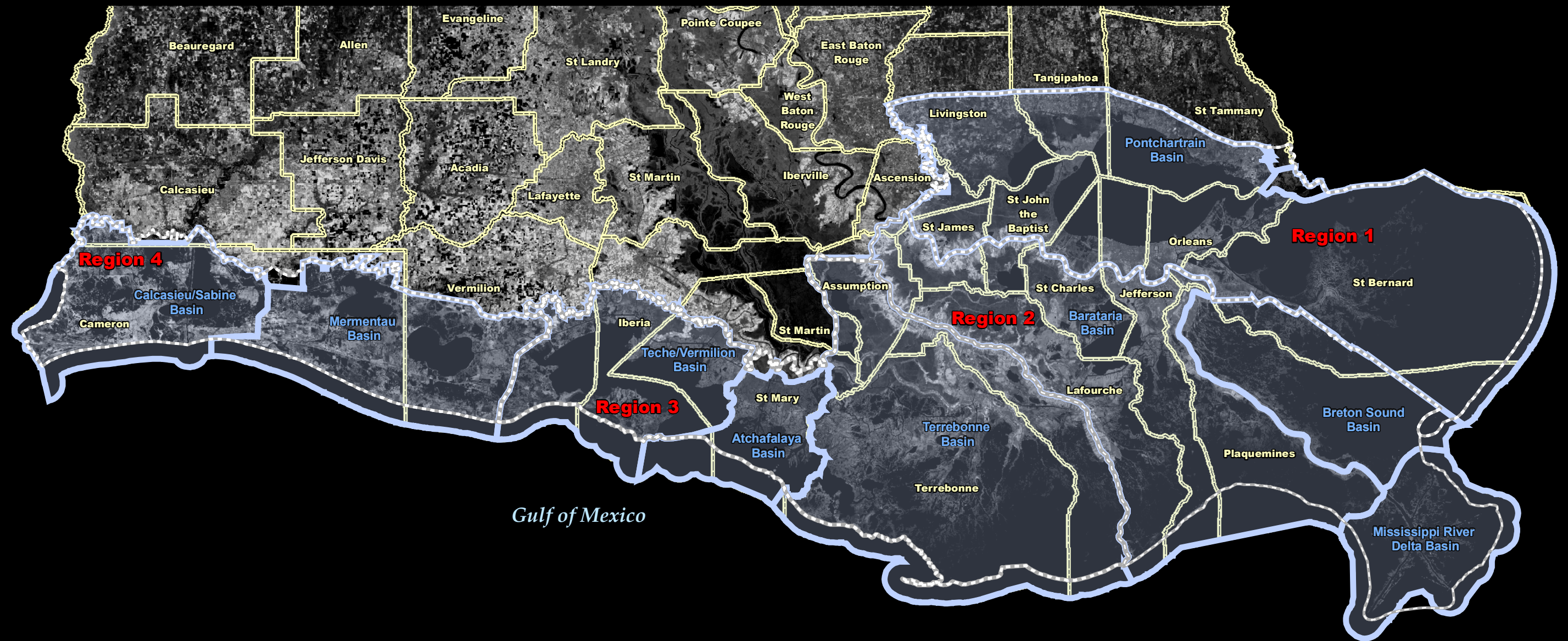
VII. SUMMARY AND CONCLUSIONS

The 20th PPL consists of 5 projects, for a Phase I cost of \$10,363,337 and a Phase II cost of \$92,576,366, which will be funded as these projects mature. The total benefits of the projects are estimated to be 990 AAHUs, based on a comparison of future with and without-project conditions over the 20-year project life. The Task Force did not select any demonstration projects for the 20th PPL.

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.



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



- Region Boundary
- Hydrologic Basin
- Parish Boundary

Image Source:
2009 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: July 14, 2010

PLATE 2. SUMMARY OF PROJECTS 1-20 PRIORITY PROJECT LISTS

Deauthorized = underlined; Coastal Impact Assistance Program (CIAP) = *italics*

1st Priority Project List

U.S. Environmental Protection Agency

TE-20 Isles Dernieres Restoration East Island

U.S. Department of the Army

MR-03 West Bay Sediment Diversion

PO-17 Bayou LaBranche Wetland Creation

BA-19 Barataria Bay Waterway Wetland Creation

TV-03 Vermilion River Cutoff Bank Protection

U.S. Department of Commerce

BA-18 Fourchon Hydrologic Restoration

TE-19 Lower Bayou laChache Hydrologic Restoration

U.S. Department of Agriculture

BA-02 GIWW 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 Planting Demonstration

ME-08 Vegetative Plantings - Dewitt-Rollover Planting Demonstration

U.S. Department of the Interior

PO-16 Bayou Sauvage National Wildlife Refuge Hydrologic Restoration, Phase 1

ME-09 Cameron Prairie Refuge National Wildlife Refuge Shoreline Protection

CS-18 Sabine National Wildlife Refuge Erosion Protection

CS-17 Cameron Creole Plugs

2nd Priority Project List

U.S. Environmental Protection Agency

TE-24 Isles Dernieres Restoration Trinity Island

U.S. Department of the Army

TE-23 West Belle Pass Headland Restoration

CS-22 Clear Marais Bank Protection

U.S. Department of Commerce

AT-02 Atchafalaya Sediment Delivery

TE-22 Point Au Fer Canal Plugs

AT-03 Big Island Mining

U.S. Department of Agriculture

CS-09 Brown Lake Hydrologic Restoration

ME-04 Freshwater Bayou Wetland Protection

BA-20 Jonathan Davis Wetland Restoration

CS-20 East Mud Lake Marsh Management

CS-21 Hwy. 384 Hydrologic Restoration

PO-06 Fritchie Marsh Creation

TV-09 Vermilion Bay/Boston Canal Shoreline Stabilization

BS-03a Caernarvon Diversion Outfall Management

U.S. Department of the Interior

PO-18 Bayou Sauvage National Wildlife Refuge Hydrologic Restoration, Phase 2

3rd Priority Project List

U.S. Environmental Protection Agency

TE-27 Whiskey Island Restoration

PO-20 Red Mud Demonstration

U.S. Department of the Army

PO-19 MRGO Disposal Area Marsh Protection

MR-06 Channel Armor Gap Crevasse

MR-07 Pass-a-Loutre Crevasse

U.S. Department of Commerce

BA-21 Bayou Perot/Bayou Rigolettes Marsh Restoration

TE-25 East Timaballier Island Sediment Restoration, Phase 1

TE-26 Lake Chapeau Sediment Input and Hydrologic Restoration

BA-15 Lake Salvador Shore Protection Demonstration

U.S. Department of Agriculture

BA-04c West Pointe-a la Hache Outfall Management

TV-04 Cote Blanche Hydrologic Restoration

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 Demonstration

U.S. Department of the Interior

CS-23 Sabine Refuge Structure Replacement (Hog Island)

4th Priority Project List

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 Dredge Material Demonstration

U.S. Department of Commerce

PO-21 Eden Isles East Marsh Restoration

TE-30 East Timbalier 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 West Side Shoreline Protection

CS-25 Plowed Terraces Demonstration

TE-31 Flotant Marsh Fencing Demonstration

5th Priority Project List

U.S. Environmental Protection Agency

BA-25a Bayou Lafourche Siphon

BA-25b Mississippi River Reintroduction into Bayou Lafourche

U.S. Department of the Army

PO-22 Bayou Chevee Shoreline Protection

U.S. Department of Commerce

TV-12 Little Vermilion Bay Sediment Trapping

BA-24 Myrtle Grove Siphon

U.S. Department of Agriculture

BA-03c Naomi Outfall Management

CS-11b Sweet Lake/ Willow Lake Hydrologic Restoration

TE-29 Raccoon Island Breakwaters Demonstration

ME-13 Freshwater Bayou Bank Stabilization

U.S. Department of the Interior

TE-10 Grand Bayou Hydrologic Restoration

6th Priority Project List

U.S. Environmental Protection Agency

TE-33 Bayou Boeuf Pump Station

U.S. Department of the Army

TV-14 Marsh Island Hydrologic Restoration

TE-35 Marsh Creation East of the Atchafalaya River – Avoca Island

MR-10 Flexible Dustpan Demo at Head of Passes (Demo)

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 1

TV-13a Oaks/Avery Canal Hydrologic Restoration Increment 1

BA-26 Barataria Bay Waterway East Side Shoreline Protection

TV-16 Cheniere au Tigre Sediment Trapping Demonstration

U.S. Department of the Interior

TE-32a Lake Boudreaux Freshwater Introduction

LA-03a Nutria Harvest for Wetland Restoration Demonstration

7th Priority Project List

U.S. Department of Commerce

BA-28 Grand Terre Vegetative Plantings

ME-14 Pecan Island Terracing

U.S. Department of Agriculture

BA-27 Barataria Basin Landbridge Shoreline Protection, Phase 1 and 2

TE-36 Thin Mat Floating Marsh Enhancement Demonstration

8th Priority Project List

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

PQ-25 Bayou Bienvenue Pump Station Diversion and Terracing

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 Siphon

TV-17 Lake Portage Landbridge

9th Priority Project List

U.S. Environmental Protection Agency

BA-29 LA Highway 1 Marsh Creation

TE-40 Timbalier Island Dune and Marsh Restoration

TE-37 New Cut Dune and 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 Demonstration

TV-19 Weeks Bay MC and SP/Commercial Canal/Freshwater Redirection

U.S. Department of Commerce

PO-27 Chandeleur Islands Marsh Restoration

TV-18 Four Mile Canal Terracing and Sediment Trapping

AT-04 Castille Pass Channel Sediment Delivery

PO-28 LaBranche Wetlands Terracing, Planting, and Shoreline Protection

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 Hydrologic Restoration

CS-30 Perry Ridge West Bank Stabilization

ME-17 Little Pecan Bayou Hydrologic Restoration

BA-27c Barataria Basin Landbridge Shoreline Protection, Phase 3

U.S. Department of the Interior

ME-16 Freshwater 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 Northwestern Barataria Basin

U.S. Department of the Army

MR-13 Benneys Bay 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 Restoration

TE-44 North Lake Mechant Landbridge Restoration

BS-11 Delta Management at Fort St. Phillip

CS-32 East Sabine Lake Hydrologic Restoration

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: Whiskey West Flank Restoration

U.S. Department of the Army

ME-21a Grand Lake Shoreline Protection, Tebo Point

ME-21b Grand Lake Shoreline Protection, O&M Only (Transferred)

U.S. Department of Commerce

BA-35 Pass Chalant to Grand Bayou Pass Barrier Shoreline Restoration

BA-37 Little Lake Shoreline Protection/Dedicated Dredging near Round Lake

BA-38 Barataria Barrier Island: Pelican Island and Pass La Mer to Chalant Pass

U.S. Department of Agriculture

BA-27d Barataria Basin Landbridge Shoreline Protection, Phase 4

LA-03b Coastwide Nutria Control Program

CS-31 Holly Beach Sand Management

TE-48 Raccoon Island Shoreline Protection/Marsh Creation, Ph 2

U.S. Department of the Interior

BA-36 Dedicated Dredging on the Barataria Basin Landbridge

ME-20 South Grand Chenier Hydrologic Restoration

TE-46 West Lake Boudreaux Shoreline Protection and Marsh Creation

12th Priority Project List

U.S. Environmental Protection Agency

BA-39 Bayou Dupont Sediment Delivery System

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 Creation 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. 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

TV-21 East Marsh Island Marsh Creation

15th Priority Project List

U.S. Department of the Army

BS-13 Bayou Lamoque Freshwater Diversion

U.S. Environmental Protection Agency

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

U.S. Department of the Army

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 Restoration Project

U.S. Department of Agriculture

PO-34 Alligator Bend Marsh Restoration and Shoreline Protection

17th Priority Project List

U.S. Environmental Protection Agency

BS-15 Bohemia Mississippi River Reintroduction

U.S. Department of the Interior

BS-16 Caernarvon Outfall Management/Lake Lery Shoreline Restoration

U.S. Department of Agriculture

LA-09 Sediment Containment System for Marsh Creation Demonstration

BA-47 West Pointe a la Hache Marsh Creation

U.S. Department of Commerce

BA-48 Bayou Dupont Ridge Creation and Marsh Restoration

LA-08 Bioengineered Oyster Reef Demonstration

18th Priority Project List

U.S. Environmental Protection Agency

BS-18 Bertrandville Siphon

U.S. Department of Agriculture

TE-66 Central Terrebonne Freshwater Enhancement

CS-49 Cameron-Creole Freshwater Introduction

LA-16 Non-Rock Alternatives to Shoreline Protection Demonstration

U.S. Department of Commerce

BA-68 Grand Liard Marsh and Ridge Restoration

19th Priority Project List

U.S. Department of Commerce

BA-76 Cheniere Ronquille Barrier Island Restoration

U.S. Department of Agriculture

ME-31 Freshwater Bayou Marsh Creation

PO-75 LaBranche East Marsh Creation

U.S. Department of the Interior

TE-72 Lost Lake Marsh Creation and Hydrologic Restoration

20th Priority Project List

U.S. Department of the Interior

PO-104 Bayou Bonfouca Marsh Creation

CS-54 Cameron-Creole Watershed Grand Bayou Marsh Creation

TE-83 Terrebonne Bay Marsh Creation – Nourishment

U.S. Department of Agriculture

LA-39 Coastwide Planting

CS-53 Kelso Bayou Marsh Creation

