23rd PRIORITY PROJECT LIST REPORT

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LOUISIANA COASTAL WETLANDS CONSERVATION AND RESTORATION TASK FORCE

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Coastal Wetlands Planning, Protection, and Restoration Act

23rd Priority Project List Report

Executive Summary of PPL 23 and Status of 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 23rd PPL (PPL 23) and fulfills the requirements of CWPPRA Section 303(a).

Under the development of PPL 23, 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 49 project proposals and demonstration project proposals, 18 projects and 3 demonstration projects were nominated by CWPPRA agencies and qualifying parish representatives via electronic vote on February 19, 2013. Ten candidate projects and zero candidate demonstration projects were selected from the list of nominees at the Technical Committee meeting held on April 16, 2013. These PPL 23 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 and maintenance. 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 23 development process the Task Force authorized the following four new coastal restoration projects:

- Island Road Marsh Creation and Nourishment
- Caminada Headlands Back Barrier Marsh Creation
- Bayou Grand Cheniere Marsh and Ridge Restoration
- South Grand Chenier Marsh Creation – Baker Tract

These PPL 23 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 23 coastal restoration projects is estimated to be $12,471,926. Phase II would include real estate acquisition, construction, operation and maintenance, and post-construction monitoring. The total Phase II cost for these four projects is estimated to be $113,126,843. The total net wetland benefit that would be derived by implementing the four PPL 23 projects is estimated to be 1,150 acres or 652 AAHUs over a 20-year period. The Task Force will consider approving Phase II funding for individual PPL 23 projects after Phase I requirements have been met for each.

Since the last PPL report to Congress, the Task Force de-authorized or transferred 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:

- Bayou Sale Shoreline Protection (TV-20)
- Bertrandville Siphon (BS-18)
- River Reintroduction into Maurepas Swamp (PO-29)

With the addition of the four new PPL 23 projects and the removal of the de-authorized project, there are a total of 150 active Louisiana coastal restoration projects in the CWPPRA Program. The current estimate for the CWPPRA projects combined is $2.27B. The current funded estimate for approved phases for all projects is $1.6B. At the time of the production of this PPL 23 report, $1.12B has been obligated and $914M had been expended on all CWPPRA coastal restoration projects in Louisiana since inception of the program in 1991. Of the 150 active projects, 101 projects have completed construction, 18 projects are under construction, and 31 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 $60 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 23rd 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 23. 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 23rd PRIORITY PROJECT LIST

IDENTIFICATION & SELECTION OF CANDIDATE & DEMONSTRATION PROJECTS

Regional Planning Team (RPT) meetings were held during the period of January 29 through January 31, 2013 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 strategies, and to propose projects and demonstration projects determined to be consistent with the newly implemented 2012 State Master Plan*. All projects that were deemed consistent with the State Master Plan by the CPRA staff present at the RPT meetings, were granted eligibility for voting consideration. Electronic voting was held on February 19, 2013 for the 23rd PPL to choose eight projects in Terrebonne and Barataria based on the high loss rates (1985-2006) in those basins, three projects in Pontchartrain, six projects in the Teche/Vermilion, Mermentau, and Calcasieu/Sabine, and one project in Breton Sound. In addition, three demonstration projects were selected as nominees. A total of 18 projects and three 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 31, 2013
Region 2: New Orleans, LA	January 31, 2013
Region 3: Houma, LA	January 30, 2013
Region 4: Abbeville, LA	January 29, 2013
Electronic Voting	February 19, 2013

The Engineering and Environmental Work Groups and the AAG met March 20 and March 21, 2013 to review and reach consensus on preliminary project features, benefits, and fully-funded cost estimates for the eighteen nominated projects as well as evaluate the three demonstration project nominees. At this meeting, after extensive evaluation, a decision was made by the Environmental and Engineering Work Groups and AAG to not pursue any of the three nominee demonstration projects, due to insufficient technical merit. 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 4, 2013. The matrix is included as Table 2.

*CWPPRA Task Force voted in June 2012 to approve the Technical Committee's recommendation that the PPL 23 Planning Process Standard Operating Procedures include selecting projects that would be consistent with the 2012 State Master Plan.

Table 2: 23rd Project Priority List - Candidate Nominee Project Matrix by Basin

						Potential Issues				
Rg	**Basin**	**Type**	**Project**	**Preliminary Fully-Funded Cost Range**	**Preliminary Benefits (Net Acres Range)**	**Oysters**	**Land Rights**	**Pipelines /Utilities**	**O&M**	**Other Issues**
1	PO	MC	Shell Beach Marsh Creation	$25M-$30M	200-250	X		X		X
1	PO	MC/SP	New Orleans Landbridge Shoreline Stabilization and Marsh creation	$20M - $25M	100-150	X		X		X
1	PO	MC	Shell Beach Marsh Creation and Nourishment	$20M - $25M	250-300	X		X		X
2	BS	MC	Marsh Creation South of Lake Lery	$35M - $40M	500-600			X		
2	BA	MC	Bayou Dupont Sediment Delivery-Marsh Creation 4	$25M - $30M	200-250			X		X
2	BA	MC	Caminada Headlands Back Barrier Marsh Creation	$35M - $40M	350-400	X		X		
2	BA	MC	Wilkinson Canal Marsh Creation and Nourishment	$35M - $40M	400-450			X		
2	BA	MC	Bayou Grand Cheniere Marsh and Ridge Restoration	$30M - $35M	200-250			X		
3	TE	MC	Island Road Marsh Creation and Nourishment	$35M - $40M	350-400	X		X		
3	TE	SP	Terrebonne Bay Shoreline Protection via Oyster Reef Construction	$30M - $35M	100-150	X		X	X	
3	TE	FD	Grand Bayou Freshwater Enhancement	$20M - $25M	500-600			X	X	X
3	TE	MC	Bayou Terrebonne Ridge Restoration and Marsh Creation	$20M - $25M	150-200	X		X		
3	TV	SP	Southwest Pass Shoreline Protection	$10M - $15M	50-100	X			X	
3	TV	SP	North Marsh Island Shoreline Protection	$30M - $35M	150-200				X	
4	ME	MC/FD	Southeast Pecan Island Marsh Creation and Freshwater Diversion	$30M - $35M	450-500		X	X		
4	ME	MC	South Grand Chenier Marsh Creation – Baker Tract	$20M - $25M	150-200			X	X	
4	CS	SP	East Holly Beach Gulf Shoreline Protection	$30M - $35M	150-200			X	X	
4	CS	MC	West Cove Marsh Creation and Nourishment	$25M - $30M	450-500	X		X		

Basin codes are: PO=Pontchartrain; MR=Mississippi River Delta; BS=Breton Sound; BA=Barataria; TE=Terrebonne; AT=Atchafalaya; TV=Teche/Vermilion; ME=Mermentau; CS=Calcasieu/Sabine.
Type codes: FD=Freshwater Diversion; HR=Hydrologic Restoration; MC=Marsh Creation; O&M= Operation and Maintenance; SP=Shoreline Protection; TR=Terracing; BI=Barrier Island; VP=Vegetative Plantings.

The CWPPRA Technical Committee met publicly on April 16, 2013 to consider the preliminary costs, wetland benefits, and potential issues of the eighteen nominees. Ten 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 ten candidate projects took place May 2013 through September 2013. The Environmental and Engineering Work Groups and AAG met to refine the projects and develop boundaries on May 15, 2013. Interagency field visits were conducted during May and June 2013 at each project site/area with members of the Engineering and Environmental Work Groups and the AAG. Detailed project information packages were developed by the Environmental, Engineering, and Economics Work Groups. These packages included fact sheets, 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 13 through August 15, 2013, the Engineering Work Group met to review and approve the Phase I and II cost estimates developed by the agencies for the ten PPL 23 candidates. In September 2013, 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 5, 2013. The Economics Work Group reviewed the final project cost estimates and developed annualized costs in the month of October 2013.

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 3: 23rd 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)
New Orleans Landbridge Shoreline Stabilization and Marsh	65	104	$12,499,983	$844,380	$12,990	$120,192
Bayou Grande Cheniere Marsh and Ridge Restoration	146	264	$29,937,575	$2,047,855	$14,026	$113,400
Wilkinson Canal Marsh Creation and Nourishment	223	395	$36,292,706	$2,477,962	$11,112	$91,880
Caminada Headlands Back Barrier Marsh Restoration	144	181	$31,034,094	$2,113,849	$14,680	$171,459
Grand Bayou Freshwater Enhancement	585	676	$22,618,793	$1,484,004	$2,537	$33,460
Island Road Marsh Creation and Nourishment	166	312	$39,185,267	$2,738,405	$16,496	$125,594
Southwest Pass Shoreline Protection	35	91	$38,679,382	$2,577,022	$73,629	$425,048

Southeast Pecan Island Marsh Creation and Freshwater	181	372	$39,835,500	$2,693,285	$14,880	$107,085
South Grand Chenier Marsh Creation-Baker Tract	196	393	$25,441,833	$1,735,602	$8,855	$64,737
West Cove Marsh Creation and Nourishment	178	359	$20,034,472	$1,370,842	$7,701	$55,806

Two public meetings were held in Abbeville, LA, and New Orleans, LA, respectively, November 15 and 16, 2013, to present projects to the public for comment.

The CWPPRA Technical Committee met on December 12, 2013 to select projects for recommendation to the CWPPRA Task Force for Phase I funding. Each agency cast a total of six weighted votes, used to rank the ten candidate projects. Projects were ranked by number of agency votes first and total weighted score second. The top four projects were selected for recommendation to the CWPPRA Task Force for Phase I funding approval. The Technical Committee 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 16, 2014, the CWPPRA Task Force reviewed the Technical Committee recommendations and moved to adopt the recommendation without change.

Table 4: 23rd Priority Project List Candidate Selection Process – Agency Voting Record

*Project No.	Nominee Project Name	Coast 2050 Region	USACE	STATE	EPA	FWS	NMFS	NRCS	No. of Votes	Sum of Point Score
TE-117	Island Road Marsh Creation & Nourishment	R3	2	2	5	3	6	3	6	21
BA-171	Caminada Headlands Back Barrier Marsh Creation	R2	1	6	6		5	2	5	20
BA-173	Bayou Grande Cheniere Marsh & Ridge Restoration	R2	4	4	3	6	1		5	18
ME-32	South Grand Chenier Marsh Creation - Baker Tract	R4	3	5	1		4	4	5	17
+	New Orleans Landbridge Shoreline Stabilization & Marsh Creation	R1	5			4	2	1	4	12
+	West Cove Marsh Creation & Nourishment	R4	6	1	2	2			4	11
+	Wilkinson Canal Marsh Creation & Nourishment	R2		3	4	3	3		3	10
+	Grand Bayou Freshwater Enhancement	R3		1		5		5	2	10
+	Southeast Pecan Island Marsh Creation & FW Enhancement	R4				1		6	2	7
+	Southwest Pass Shoreline Protection	R3							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 interspersion,
    d. V_4--percent open water less than or equal to 1.5 feet deep,
    e. V_5--salinity, and
    f. V_6--aquatic organism access.
2. A Suitability Index graph for each variable, which defines the assumed relationship between habitat quality (Suitability Index) and different variable values; and
3. A mathematical formula that combines the Suitability Index for each variable into a single value for wetland habitat quality; that single value is referred to as the Habitat Suitability Index, or HSI.

The WVA models have been developed for determining the suitability of Louisiana coastal wetlands for providing resting, foraging, breeding, and nursery habitat to a diverse assemblage of fish and wildlife species. Models have been designed to function at a community level and therefore attempt to define an optimum combination of habitat conditions for all fish and wildlife species utilizing a given marsh type over a year or longer.

The output of each model (the HSI) is assumed to have a linear relationship with the suitability of a coastal wetland system in providing fish and wildlife habitat. A comprehensive discussion of the WVA methodology is presented in Appendix B.

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

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

In addition, each lead agency provided a detailed itemized construction cost estimate for each project.

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 project location, problem, goals, proposed solution, benefits, costs, sponsoring agency and contact persons, and a map identifying the project area and features if applicable.

PPL23 New Orleans Landbridge Shoreline Stabilization and Marsh Creation

Project Location:
Region 1, Pontchartrain Basin, Orleans Parish

Problem:
Since 1956, the project area has lost more than 110 acres of wetlands along the east shore of Lake Pontchartrain between Hospital Road and the Greens Ditch area. The shoreline in the area has retreated approximately 450 feet since 1956. Wetland losses were accelerated by winds and storm surge caused by Hurricanes Katrina and Rita. Within the project area, these storms alone converted approximately 70 acres of interior marsh to open water. Flooding of nearby communities during strong northwest winds may be partially attributed to these high wetland losses. Stabilizing the shoreline and protecting the remaining marsh would protect natural coastal resources, communities and infrastructure. USGS land change analysis determined a loss rate of -0.35% per year for the 1984 -2011period of analysis. Subsidence in this unit is relatively low and is estimated at 0-1 ft/century (Coast 2050).

Goals:
The project goal is to restore and enhance 192 acres of brackish marsh and to protect 12,716 linear feet of shoreline to maintain the structural integrity of the Orleans Landbridge, a critical landscape feature.

Proposed Solution:
Approximately 863,000 cubic yards of material will be dredged from two borrow areas in Lakes St. Catherine and Pontchartrain and from flotation access. Material will be placed in two restoration areas: a 107-acre area west of U.S. Highway 90 (MC 1), and an 85-acre area east of U.S. Highway 90 (MC 3). Approximately 12,716 linear feet of containment will be constructed with a top width of 20 feet (1V:5H side slopes) to serve as an enhanced earthen shoreline along both lake shorelines adding additional protection from wind-induced wave fetch. Of the shoreline protection, 2,129 linear feet would be constructed in front of existing marsh offering additional protection. Gaps are not proposed in the enhanced shoreline for MC 3. However, at least 4 gaps are proposed at historically natural bayous along the shoreline for MC 1 to allow for organism access. Vegetative plantings are proposed including five rows along the crown and two rows along the front slope of the shoreline protection berm and within the marsh creation areas.

Project Benefits:
The project would result in approximately 104 net acres over the 20-year project life.

Project Costs:
The total fully-funded cost is $12,499,983.

Preparers of Fact Sheet:
Angela Trahan, FWS, angela_trahan@fws.gov, 337-291-3137

New Orleans Landbridge Shoreline Stabilization and Marsh Creation (PPL23 Candidate)

USGS science for a changing world

Earthen Berm*
Marsh Creation *
Project Boundary
* denotes proposed features

0.25 0 0.25 Kilometers
0.25 0 0.25 Miles
Scale 1:20,000

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

Image Source:
2012 DOQQ

Map ID: USGS-NWRC 2013-11-0041
Map Date: September 03, 2013

PPL23 Caminada Headlands Back Barrier Marsh Creation

Project Location:
Region 2, Barataria Basin, Lafourche Parish

Problem:
The Caminada Headland has experienced some of the highest shoreline retreat rates in Louisiana. Historically the shoreline has migrated landward at about 40 feet per year. Between 2006 and 2011, shoreline migration increased dramatically, exceeding 80 feet per year in near Bay Champagne and 110 feet per year in the Bayou Moreau area. The increased losses occurred in the wake of Hurricanes Katrina and Rita in 2005 as the breaches remained open for an extended length of time. The losses were exacerbated by Tropical Storm Fay and Hurricanes Gustav and Ike in 2008. Significant prolonged breaches greatly increase the net export of sediment from the headland.

In addition to the shoreline migration, the area is also experiencing high loss rates of interior marshes. As the beach and dune continue to migrate landward, overwashed sediment will be lost into newly formed open water and land loss rates will be exacerbated. The continued deterioration of Caminada headland threatens thousands of acres of wetland habitat as well as critical infrastructure, including Port Fourchon, LA Highway 1, and the lower Lafourche levee system.

Goals:
The goals of this project are to: 1) Create and/or nourish 430 acres of back barrier marsh, by pumping sediment from an offshore borrow site; 2) Create a platform upon which the beach and dune can migrate, reducing the likelihood of breaching, improving the longevity of the barrier shoreline, and protecting wetlands and infrastructure to the north and west. The proposed project is expected to slow the current trend of degradation in the headland.

Proposed Solution:
This project would create 300 acres of back barrier intertidal marsh and nourish 130 acres of emergent marsh behind 3.5 miles of the Caminada beach using material dredged from the Gulf of Mexico. The marsh creation and nourishment cells are designed to minimize impacts on existing marsh and mangroves. Assuming some natural vegetative recruitment, vegetative plantings are planned at a 50% density, with half planned at project year one and half planned at project year 3. Containment dikes will be degraded or gapped by year three to allow access for estuarine organisms.

Project Benefits:
The project would result in approximately181 net acres over the 20-year project life.

Project Costs:
The total fully-funded cost is $31,034,094.

Preparers of Fact Sheet:
Barbara Aldridge (EPA), (214) 665-2712; Stuart Brown, CPRA, (225) 342-4596

Caminada Headlands Back Barrier Marsh Creation (PPL23 Candidate)

Marsh Creation *

Project Boundary

* denotes proposed features

0.5 0 0.5 Kilometers

0.5 0 0.5 Miles

Scale 1:35,000

USGS science for a changing world

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

Image Source:
2012 DOQQ

Map ID: USGS-NWRC 2013-11-0044
Map Date: August 01, 2013

PPL23 Wilkinson Canal Marsh Creation and Nourishment

Project Location:
The project is located in Region 2, Barataria Basin, in Plaquemines Parish

Problem:
There is widespread historic and continued rapid land loss within the project site and surrounding marshes resulting from subsidence, wind erosion, storms, and altered hydrology. Based on USGS data from 1984 to 2011, the wetland loss rate for the proposed project area is 1.04 %//year. The natural limits of Bayou Dupont are difficult to determine in some areas because land loss is causing the coalescence of the bayou with adjacent water bodies. Natural tidal flow and drainage patterns that once existed through the bayou are currently circumvented by the increasing area of open water. Data suggests that from 1932 to 1990, the basin lost over 245,000 ac of marsh, and from 1978 to 1990, Barataria Basin experienced the highest rate of wetland loss along the entire coast.

Goals:
The concept provides for the restoration of approximately 484 acres of emergent brackish marsh to help reestablish the banks of Bayou Dupont while also providing protection to the local flood protection levee.

Proposed Solution:
The proposed project's primary feature is to create 435 acres and nourish 49 acres of brackish marsh. Sediment will be hydraulically pumped from a borrow source in the Mississippi River (near the Myrtle Grove area). Containment dikes will be constructed around the marsh creation area to retain sediment during pumping. No later than three years post construction, the containment dikes will be degraded and/or gapped. Additionally, half of the newly constructed marsh (242 acres) will be planted following construction to stabilize the platform and reduce time for full vegetation.

Project Benefits:
The project would result in approximately 395 net acres over the 20-year project life.

Project Costs:
The total fully-funded cost is $36,292,706.

Preparers of Fact Sheet:
Kimberly Clements, NOAA's National Marine Fisheries Service, (225) 389-0508, ext 204
Kimberly.Clements@noaa.gov
Patrick Williams, NOAA's National Marine Fisheries Service, (225) 389-0508, ext 208
Patrick.Williams@noaa.gov

Wilkinson Canal Marsh Creation and Nourishment (PPL23 Candidate)

USGS science for a changing world

N

Marsh Creation *

Project Boundary

* denotes proposed features

0.4 0 0.4 Kilometers

0.4 0 0.4 Miles

Scale 1:25,000

Map ID: USGS-NWRC 2013-11-0034
Map Date: July 01, 2013

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

Image Source:
2012 DOQQ

PPL23 Bayou Grande Cheniere Marsh and Ridge Restoration

Project Location:
Region 2, Barataria Basin, Plaquemines Parish

Problem:
Significant marsh loss has occurred south of Lake Hermitage with the construction of numerous oil and gas canals, subsidence, and sediment deprivation. The most significant loss occurred during the 1960s and 1970s. Based on the hyper-temporal analysis conducted by USGS for the extended boundary, loss rates in the project area are estimated to be -1.16% per year for the period 1984 to 2011.

Goals:
The primary goal is to re-create marsh habitat in the open water areas and nourish marsh along the eastern side of the Bayou Grande Cheniere ridge. Specific goals of the project are: 1) Create approximately 342 acres of marsh with dredged material from the Mississippi River; 2) create 10,820 linear feet (12 acres) of forested coastal ridge habitat.

Proposed Solution:
Riverine sediments will be hydraulically dredged and pumped via pipeline to create/nourish approximately 342 acres of marsh. Containment dikes will be constructed as necessary. The proposed design is to place the dredged material to a fill height of +2.0 ft NAVD88. Approximately 8,200 ft of pre-dredged tidal creeks are also proposed. Tidal creeks will be dredged approximately 5 feet deep, with side slopes of 1(V):3(H), and with a 10-ft bottom width.

Approximately 10,820 linear feet of forested coastal ridge will be constructed along Bayou Grande Cheniere. The ridge will have a 25-ft crown width, a height of +5.0 ft NAVD88, and side slopes of 1(V):5(H). The current proposal is to create the ridge using material dredged from the Mississippi River. Herbaceous plantings (e.g., seashore paspalum) will occur immediately after construction and bottomland hardwood species (seedlings and saplings) will be planted at Year 2. Funding for tallow control and maintenance plantings is also included.

Project Benefits:
The project would result in approximately 264 net acres over the 20-year project life.

Project Costs:
The total fully-funded cost is $29,937,575.

Preparer of Fact Sheet:
Kevin Roy, FWS, Kevin_Roy@fws.gov, 337-291-3120

Bayou Grande Cheniere Marsh and Ridge Restoration (PPL23 Candidate)

USGS science for a changing world

Ridge *
Marsh Creation *
Project Boundary
* denotes proposed features

0.5 0 0.5 Kilometers
0.5 0 0.5 Miles
Scale 1:35,000

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

Image Source:
2012 DOQQ

Map ID: USGS-NWRC 2013-11-0033
Map Date: September 04, 2013

PPL23 Island Road Marsh Creation and Nourishment

Project Location:
Region 3, Terrebonne Basin, Terrebonne Parish

Problem:
The Terrebonne Basin is an abandoned delta complex, characterized by a thick section of unconsolidated sediments that are undergoing dewatering and compaction, contributing to high subsidence, and a network of old distributary ridges extending southward from Houma. Historically, subsidence and numerous oil and gas canals and pipelines in the area have contributed significantly to wetland losses. Since 1932, the Terrebonne Basin has lost approximately 20% of its wetlands. One-third of the Terrebonne Basin's remaining wetlands are estimated to be lost to open water by the year 2040. There has been a significant reduction in the marsh platform in the vicinity of Island Road (1.60%/year based on USGS data from 1984 to 2011) that has provided some historical wave energy protection. Island Road is the only land access to the Isle of Jean Charles located west of Pointe Aux Chenes which serves unique Native American and minority communities that historically relied on fishing for their livelihood.

Goals:
The restoration concept provides for the creation and/or nourishment of approximately 383 acres of emergent saline marsh that will form a land bridge along portions of the perimeter of Cutoff Canal, Twin Pipelines Canals, and Island Road.

Proposed Solution:
The proposed project's primary feature is to create 364 acres and nourish 19 acres of saline marsh. Sediment will be hydraulically pumped from a borrow source near Lake Felicity. Containment dikes will be constructed around the marsh creation area to retain sediment during pumping and will be degraded and/or gapped no later than three years post construction. Half of the newly constructed marsh (182 acres) will be planted following construction to stabilize the platform and reduce time for full vegetation.

Project Benefits:
The project would result in approximately 312 net acres over the 20-year project life.

Project Costs:
The total fully-funded cost is $39,185,267.

Preparers of Fact Sheet
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Kimberly.Clements@noaa.gov
Patrick Williams, NOAA's National Marine Fisheries Service, (225) 389-0508, ext 208
Patrick.Williams@noaa.gov

Island Road Marsh Creation and Nourishment (PPL23 Candidate)

USGS science for a changing world

Marsh Creation *

Project Boundary

* denotes proposed features

0.5 0 0.5 Kilometers

0.5 0 0.5 Miles

Scale 1:35,000

Map ID: USGS-NWRC 2013-11-0045
Map Date: August 02, 2013

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

Image Source:
2012 DOQQ

PL23 Grand Bayou Freshwater Enhancement

Project Location:
Region 3, Terrebonne Basin, Lafourche Parish

Problem:
The project area is located within the North Bully Camp Marsh (43,882) and St. Louis Canal (25,563 acres) mapping units. Between the years 1932 and 1990, these two mapping units lost an estimated 12,840 and 3,450 acres of marsh, respectively. A significant amount of the land loss in these areas since 1949 may be attributed to direct removal and altered hydrology from canal dredging. Altered hydrology remains a current cause of land loss along with high rates of subsidence which are estimated to be between 2.1 and 3.5 ft/century (LCWCRTF 1999).

Because of the high number of canals that have been dredged in the area, high salinity Gulf waters move rapidly northward into the marshes within the project area. The amount of high salinity waters moving north is increasing as the marshes continue to breakup and disappear. The only freshwater input to this area originates from the Gulf Intracoastal Waterway (GIWW) along the northern project boundary. The freshwater inflow from the GIWW is restricted by the small cross-section of the channel north of the Hwy. 24 bridge and continuing for several thousand feet south of that bridge. There is also a restriction (earthen plug) in Margaret's Bayou which prevents fresh water from moving east from Grand Bayou into the broken marshes.

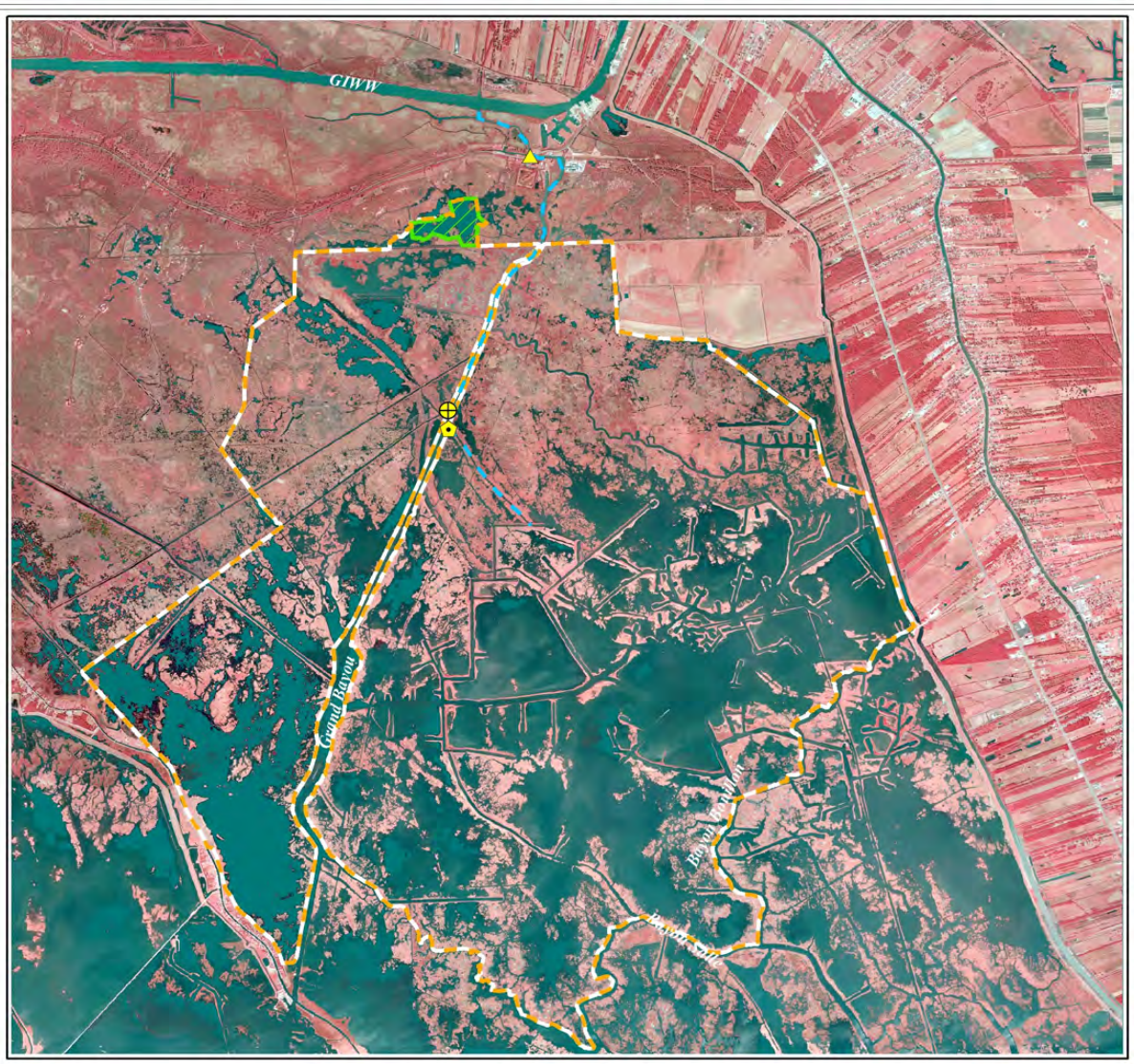
Goals:
The primary goal of this project is to increase the flow of fresh water from the GIWW down Grand Bayou Canal. That increase is water would lower salinities and add nutrients to the wetlands south of the GIWW along the east and west banks of Grand Bayou Canal. ***Specific goals*:** 1) Increase the flow of fresh water from the GIWW into Grand Bayou Canal from approximately 600 cfs to 1,600 cfs; 2) redirect much of the freshwater from Grand Bayou Canal into the marshes east and west of Grand Bayou Canal, and 3) Create 112 acres of fresh marsh and nourish an additional 14 acres of intermediate marsh west of Grand Bayou near Hwy 24.

Proposed Solution:
This project would increase the Grand Bayou cross-section from an average of 628 cfs to 1,604 cfs with the use of a hydraulic dredge. Material dredged from the channel would be beneficially used to create approximately 126 acres of intermediate marsh. Along the west bank of the channel a rock plug would be replaced with a 5-48" flap-gated culvert water control structure, an increase of 122 cfs. Along the east bank an earthen plug would be removed to allow freshwater to flow directly into the marshes to the east down Margaret's Bayou, an increase in 385 cfs.

Project Benefits:
The project would result in approximately 676 net acres over the 20-year project life.

Project Costs:
The total fully-funded cost is $22,618,793.

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



Grand Bayou Freshwater Enhancement
(PPL23 Candidate)

- Bridge Replacement *
- Water Control Structure *
- Weir w/ Barge Bay *
- Channel Enlargement *
- Marsh Creation *
- Freshwater Influence *
- Project Boundary *

* denotes proposed features

1 0 1 Kilometers

1 0 1 Miles

Scale 1:100,000

USGS science for a changing world

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

Image Source:
2012 DOQQ

Map ID: USGS-NWRC 2013-11-0043
Map Date: August 15, 2013

PPL23 Southwest Pass Shoreline Protection

Project Location:
Region 3, Teche/Vermilion Basin, Iberia and Vermilion Parishes

Problem:
Erosion of peninsulas in the project area is reducing the effectiveness of the landmass as a mainland barrier to gulf storm surge, wave energy and tidal flux reduction. Average losses of 10 ft/yr at Southwest Point and 8 ft/yr at Tojan Island were measured from 1998 to 2012. Southwest Point is only about 240 ft wide at its thinnest location and the gulf shoreline on Tojan Point is within less than 500 ft from interior tidal creeks leading to the interior.

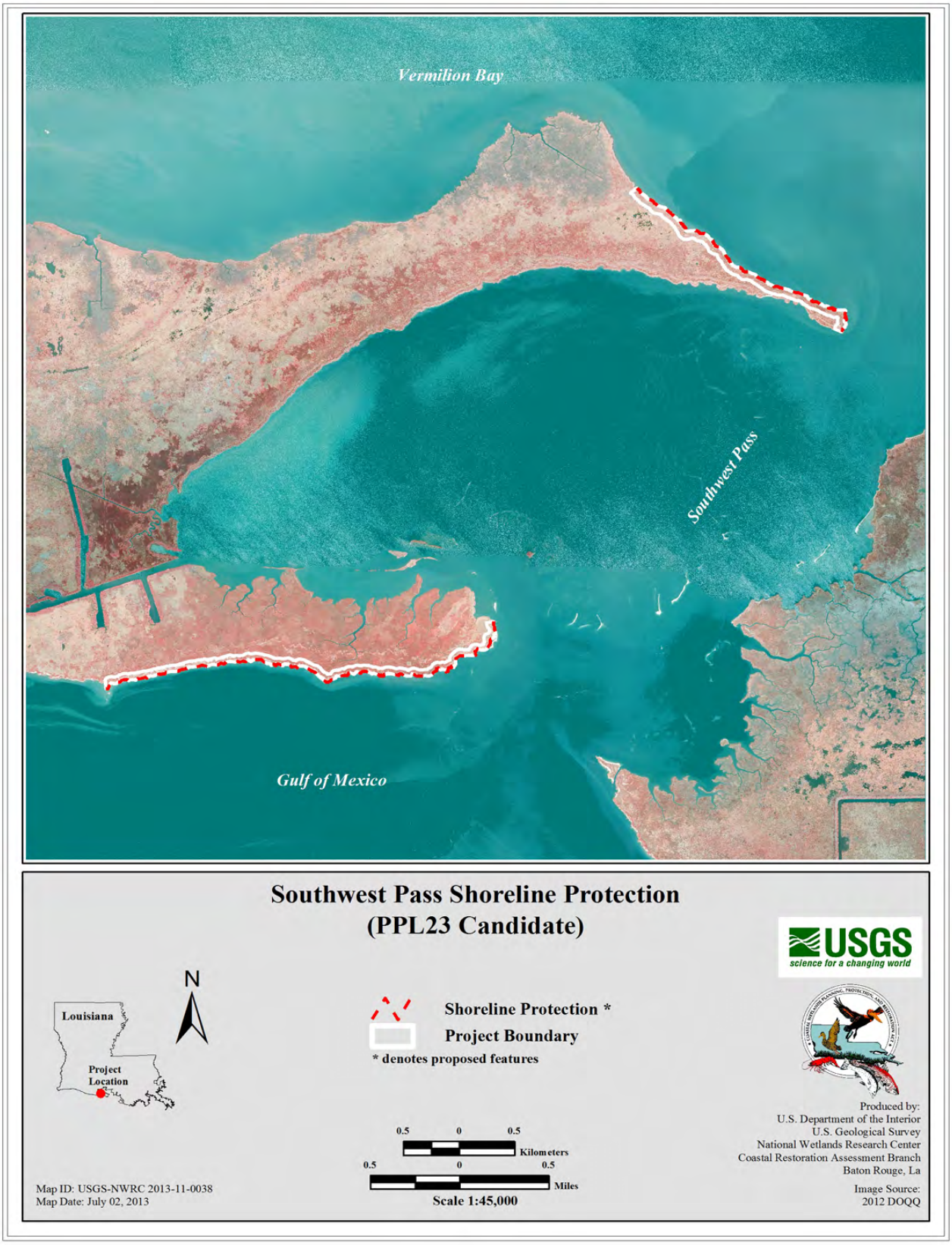
Goals:
The project goal is to protect and stabilize critical points within Southwest Pass. The current width and subsequent flow pattern will be maintained by installing armor protection along the gulf front of Tojan Island and bay shoreline of Southwest Point. The rock protection will prevent widening of the pass and tidal currents from circumventing the restriction at the pass and breaching into adjacent marsh areas.

Proposed Solution:
Proposed is the installation of armored shoreline protection along the south shoreline of Vermilion Bay at Southwest Point to protect approximately 9,195 linear feet of shoreline and along the north shoreline of the Gulf of Mexico at Tojan Island to protect approximately 16,882 linear feet of shoreline. Shoreline protection would consist of typical rock construction.

Project Benefits:
The project would result in approximately 91 net acres over the 20-year project life.

Project Costs:
The total fully-funded cost is $38,679,382.

Preparer(s) of Fact Sheet:
Ron Boustany, NRCS, 337-291-3067, ron.boustany@la.usda.gov
John Jurgensen, NRCS, 318-473-7694, john.jurgensen@la.usda.gov



Southwest Pass Shoreline Protection
(PPL23 Candidate)

USGS
science for a changing world

N

Louisiana

Project Location

Shoreline Protection *

Project Boundary

* denotes proposed features

0.5 0 0.5 Kilometers

0.5 0 0.5 Miles

Scale 1:45,000

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

Image Source:
2012 DOQQ

Map ID: USGS-NWRC 2013-11-0038
Map Date: July 02, 2013

PPL23 West Cove Marsh Creation and Nourishment

Project Location:
Region 4, Calcasieu-Sabine Basin, Cameron Parish

Problem:
The project area is located within the Mud Lake mapping unit (22,711 ac). Between the years 1932 and 1990, the mapping unit lost an estimated 4,630 acres of marsh. The majority of this loss (3,570 acres) occurred from 1956-1974. In 2005, marshes in the area were severely impacted as a result of Hurricane Rita and again in 2008 by Hurricane Ike.

With the recent increase in area salinities coupled with hurricane impacts, much of the marsh vegetation in the area has been stressed and in many cases lost. USGS performed a linear regression of land area values based on the land-water analysis of hyper-temporal data set (1984-2011) and estimated a loss rate of -0.80%/yr. If not addressed through some type of restoration, wind generated waves within the open water areas can cause an increase in shoreline erosion.

Goals:
The primary goal of this project is to divert material from an upland disposal site along the Calcasieu River Ship Channel and beneficially utilize that material to create and/or nourish approximately 409 acres of brackish marsh (388 acres created and 21 acres nourished).

Proposed Solution:
The proposed project will beneficially utilize material from the Calcasieu River Ship Channel dredged during routine maintenance dredging operations and create/nourish marsh by placing that material in an area with shallow open water and highly broken marsh located south and west of West Cove. Approximately 388 acres of brackish marsh would be restored and 21 acres nourished by beneficially using approximately 1.6 million cubic yards of material. Dredged material would be contained by earthen containment dikes to achieve a target marsh elevation of +1.4 ft. NAVD 88 (2 inches above the existing marsh elevation at Sonde CS20-15R and equal to the target elevations at the Sabine Marsh Creation Project Cycles 1 & 3).

Containment dikes will be degraded and/or adequately gapped within three years post construction. Tidal creeks will also be constructed with the use of a marsh buggy tracking along a predetermined path to initiate the establishment of those tidal creeks thus allowing tidal flow and estuarine organism access to the marsh restoration areas.

Project Benefits:
The project would result in approximately 359 net acres over the 20-year project life.

Project Costs:
The total fully-funded cost is $20,034,472.

Preparers of Fact Sheet:
Robert Dubois, Fish and Wildlife Service, (337) 291-3127
Scott Wandell, U.S. Army Corps of Engineers, (504) 862-1878

West Cove Marsh Creation and Nourishment (PPL23 Candidate)

N

Marsh Creation *

Project Boundary

* denotes proposed features

0.5 0 0.5 Kilometers

0.5 0 0.5 Miles

Scale 1:35,000

Map ID: USGS-NWRC 2013-11-0046
Map Date: September 03, 2013

USGS science for a changing world

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

Image Source:
2012 DOQQ

PPL23 Southeast Pecan Island Marsh Creation and Freshwater Enhancement

Project Location:
The project is located in Region 4, Mermentau Basin, Vermilion Parish, east of Pecan Island and south of Highway 82.

Problem:
Virtually all of the project area marshes have experienced increased tidal exchange, saltwater intrusion, and reduced freshwater retention associated with the Freshwater Bayou Canal and the Humble Canal. Highway 82 traverses cheniers wherever possible, however, low spots between cheniers historically allowed drainage from the Lakes Subbasin south into the Chenier Subbasin. Currently, Highway 82 forms a hydrologic barrier that isolates those sub basins. Saltwater intrusion has been caused by blocking the normal north-south freshwater flow, retaining freshwater to the north in the Lakes subbasin, and by canals providing a direct route for saltwater to infiltrate the Chenier Subbasin. Recent land loss resulting from Hurricanes Rita and Ike has also left Louisiana State Highway 3147 and Front Ridge Road exposed to open water wave action and vulnerable to additional storm impacts.

Goals:
The project goals are to restore/improve hydrologic conditions and increase emergent marsh vegetation throughout the project area. The project would help restore drainage of excess fresh water from the Lakes Subbasin into the Chenier Subbasin. Restoring the hydrology would reduce the exposure of fragile interior marsh to seasonal salinity spikes and increase productivity of marshes receiving freshwater. The project would also create/nourish approximately 531 acres of emergent marsh and promote growth of submerged aquatic vegetation.

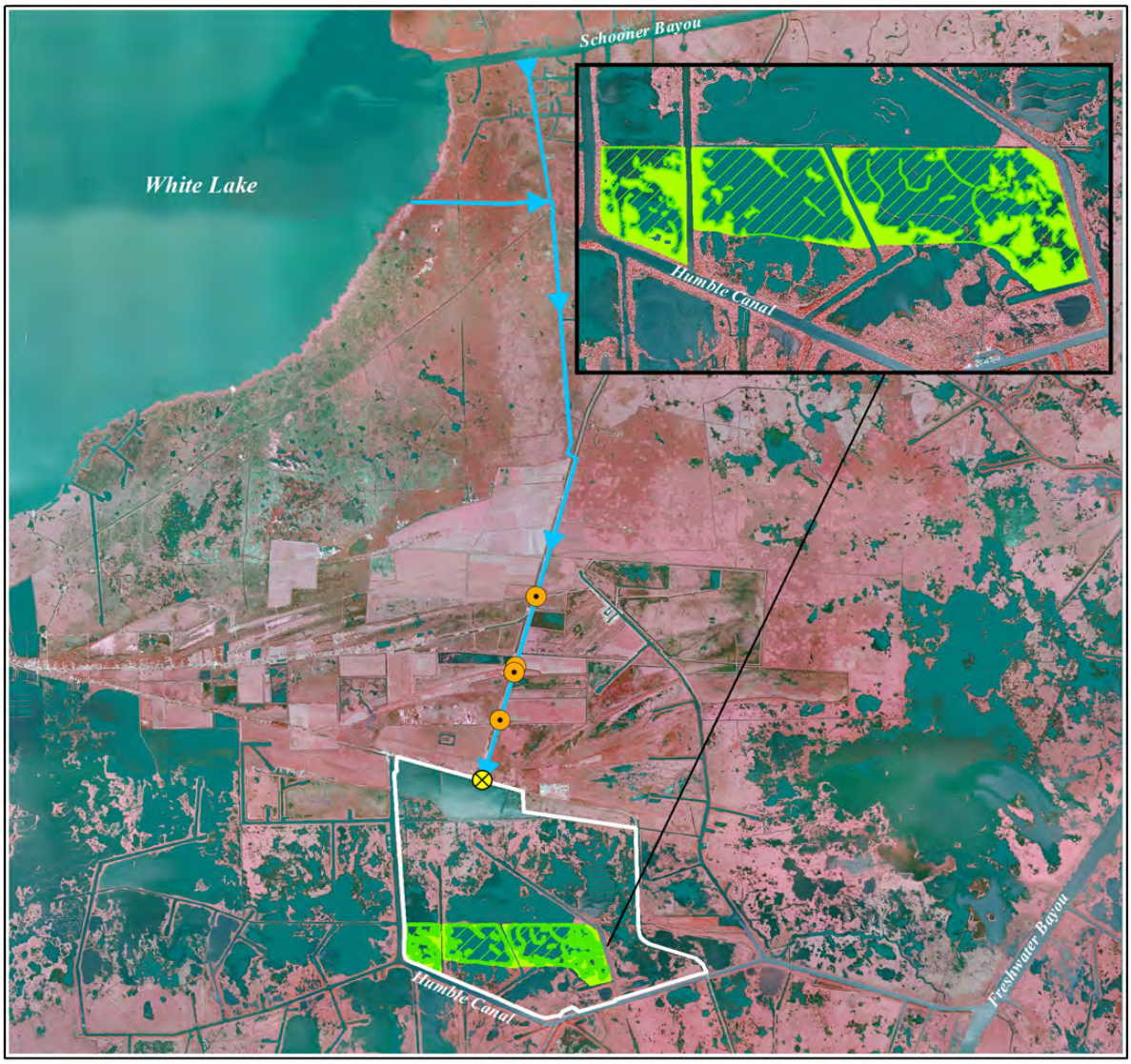
Proposed Solution:
Approximately 531acres of marsh will be created and/or nourished from dredged material from the Gulf of Mexico.

The proposed freshwater introduction would restore/improve hydrologic conditions by allowing water from the Lakes Subbasin to drain south into the Chenier Subbasin. The majority of the necessary infrastructure exists and would require construction of an outlet structure at Front Ridge, replacement of four sets of culverts along the conveyance channel, and the potential cleanout of culverts under Highway 82.

Project Benefits:
The project would result in approximately 372 net acres over the 20-year project life.

Project Costs:
The total fully-funded cost is $39,835,500.

Preparer of Fact Sheet:
Troy Mallach, NRCS, (337) 291-3064.



Southeast Pecan Island Marsh Creation and Freshwater Enhancement (PPL23 Candidate)

- Replacement Structure *
- Culvert with Flapgate *
- Freshwater Introduction *
- Marsh Creation *
- Marsh Nourishment *
- Influence Area/Project Boundary *

* denotes proposed features

1 0 1 Kilometers

1 0 1 Miles

Scale 1:100,000

USGS science for a changing world

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

Image Source:
2012 DOQQ

Map ID: USGS-NWRC 2013-11-0042
Map Date: September 10, 2013

PPL23 South Grand Chenier Marsh Creation – Baker Tract

Project Location:
The project is located in Region 4, Mermentau Basin, south of Grand Chenier in Cameron Parish, Louisiana, between Highway 82 and Hog Bayou.

Problem:
Marshes within the Hog Bayou Unit are stressed due to limited freshwater input and seasonal salinity spikes exacerbated by construction of the Mermentau Ship Channel. The dredging of the Mermentau River Ship Channel and subsequent wetland loss has increased tidal amplitude and salt water intrusion into the watershed. Other contributors to land loss in the area are subsidence, compaction, and erosion of organic soils. Currently, the project area is characterized as large open water with degraded areas of wetland vegetation, low organic production, and large areas of wave fetch.

Goals:
The primary project goal is to create new wetland habitat, restore degraded marsh, and reduce wave erosion. The project would promote the expansion of emergent marsh and submerged aquatic vegetation throughout the project area. Primary focus is on substantial marsh creation to increase organic production and reduce tidal prism. Successful CWPPRA beneficial use and dedicated dredging marsh creation projects show that placement of dredged material in shallow open water areas can restore vegetated marsh within a few years post construction

Proposed Solution:
Approximately 420 acres of marsh will be created and nourished using material dredged from the Gulf of Mexico. Retention levees will be degraded and approximately 11,756 linear feet of tidal creeks will be constructed by tracking marsh buggies on the marsh platform for estuarine fisheries access. Smooth cordgrass plugs will be planted on 20-foot centers throughout the area (total 49,268 plants).

Project Benefits:
The project would result in approximately 393 net acres over the 20-year project life.

Project Costs:
The total fully-funded cost is $25,441,833.

Preparer of Fact Sheet:
Troy Mallach, NRCS, (337) 291-3064

South Grand Chenier Marsh Creation
(PPL23 Candidate)

Tidal Creeks *
Marsh Creation *
Project Boundary
* denotes proposed features

0.4 0 0.4 Kilometers
0.4 0 0.4 Miles
Scale 1:25,000

Map ID: USGS-NWRC 2013-11-0035
Map Date: July 01, 2013

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

Image Source:
2012 DOQQ

IV. DESCRIPTION OF CANDIDATE DEMONSTRATION PROJECTS

PPL23 had no candidate demonstration projects selected.

V. PROJECT SELECTION

On April 16th, 2013 the CWPPRA Task Force made its selection for the 23rd PPL. The CWPPRA Task Force selection for the 23rd PPL is shown in Table 6.

Table 5: The 23rd Priority Project List

Project Number	Project Name	Physical Type	Sponsoring Agency	Total Fully Funded Cost	Fully-Funded Phase I Cost	Fully-Funded Phase II Cost	Average Annual Habitat Units (AAHU)
TE-117	Island Road MC and Nourishment	MC	NMFS	$39,185,267	$3,721,447	$35,463,820	166
BA-171	Caminada Headlands Back Barrier MC	MC	EPA	$31,034,094	$3,354,935	$27,679,159	144
BA-173	Bayou Grand Cheniere Marsh and Ridge Restoration	MC	USFWS	$29,937,575	$2,742,302	$27,195,273	146
ME-32	South Grand Chenier MC – Baker Tract	MC	NRCS	$25,441,833	$2,653,242	$22,788,591	196
TOTALS				$125,598,769	$12,471,926	$113,126,843	652

Project Physical Type:
MC=Marsh Creation

Sponsoring Agencies:
EPA=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 project location, problem, goals, solution, benefits, costs, sponsoring agency and contact persons, and a map identifying the project area and features if applicable.

PPL23 Caminada Headlands Back Barrier Marsh Creation

Project Location:
Region 2, Barataria Basin, Lafourche Parish

Problem:
The Caminada Headland has experienced some of the highest shoreline retreat rates in Louisiana. Historically the shoreline has migrated landward at about 40 feet per year. Between 2006 and 2011, shoreline migration increased dramatically, exceeding 80 feet per year in near Bay Champagne and 110 feet per year in the Bayou Moreau area. The increased losses occurred in the wake of Hurricanes Katrina and Rita in 2005 as the breaches remained open for an extended length of time. The losses were exacerbated by Tropical Storm Fay and Hurricanes Gustav and Ike in 2008. Significant prolonged breaches greatly increase the net export of sediment from the headland.

In addition to the shoreline migration, the area is also experiencing high loss rates of interior marshes. As the beach and dune continue to migrate landward, overwashed sediment will be lost into newly formed open water and land loss rates will be exacerbated. The continued deterioration of Caminada headland threatens thousands of acres of wetland habitat as well as critical infrastructure, including Port Fourchon, LA Highway 1, and the lower Lafourche levee system.

Goals:
The goals of this project are to: 1) Create and/or nourish 430 acres of back barrier marsh, by pumping sediment from an offshore borrow site; 2) Create a platform upon which the beach and dune can migrate, reducing the likelihood of breaching, improving the longevity of the barrier shoreline, and protecting wetlands and infrastructure to the north and west. The proposed project is expected to slow the current trend of degradation in the headland.

Proposed Solution:
This project would create 300 acres of back barrier intertidal marsh and nourish 130 acres of emergent marsh behind 3.5 miles of the Caminada beach using material dredged from the Gulf of Mexico. The marsh creation and nourishment cells are designed to minimize impacts on existing marsh and mangroves. Assuming some natural vegetative recruitment, vegetative plantings are planned at a 50% density, with half planned at project year one and half planned at project year 3. Containment dikes will be degraded or gapped by year three to allow access for estuarine organisms.

Project Benefits:
The project would result in approximately181 net acres over the 20-year project life.

Project Costs:
The total fully-funded cost is $31,034,094.

Preparers of Fact Sheet:
Barbara Aldridge (EPA), (214) 665-2712; Stuart Brown, CPRA, (225) 342-4596

Caminada Headlands Back Barrier Marsh Creation (PPL23 Candidate)

Marsh Creation *
Project Boundary
* denotes proposed features

0.5 0 0.5 Kilometers
0.5 0 0.5 Miles
Scale 1:35,000

USGS science for a changing world

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

Image Source:
2012 DOQQ

Map ID: USGS-NWRC 2013-11-0044
Map Date: August 01, 2013

PPL23 Bayou Grande Cheniere Marsh and Ridge Restoration

Project Location:
Region 2, Barataria Basin, Plaquemines Parish

Problem:
Significant marsh loss has occurred south of Lake Hermitage with the construction of numerous oil and gas canals, subsidence, and sediment deprivation. The most significant loss occurred during the 1960s and 1970s. Based on the hyper-temporal analysis conducted by USGS for the extended boundary, loss rates in the project area are estimated to be -1.16% per year for the period 1984 to 2011.

Goals:
The primary goal is to re-create marsh habitat in the open water areas and nourish marsh along the eastern side of the Bayou Grande Cheniere ridge. Specific goals of the project are: 1) Create approximately 342 acres of marsh with dredged material from the Mississippi River; 2) create 10,820 linear feet (12 acres) of forested coastal ridge habitat.

Proposed Solution:
Riverine sediments will be hydraulically dredged and pumped via pipeline to create/nourish approximately 342 acres of marsh. Containment dikes will be constructed as necessary. The proposed design is to place the dredged material to a fill height of +2.0 ft NAVD88. Approximately 8,200 ft of pre-dredged tidal creeks are also proposed. Tidal creeks will be dredged approximately 5 feet deep, with side slopes of 1(V):3(H), and with a 10-ft bottom width.

Approximately 10,820 linear feet of forested coastal ridge will be constructed along Bayou Grande Cheniere. The ridge will have a 25-ft crown width, a height of +5.0 ft NAVD88, and side slopes of 1(V):5(H). The current proposal is to create the ridge using material dredged from the Mississippi River. Herbaceous plantings (e.g., seashore paspalum) will occur immediately after construction and bottomland hardwood species (seedlings and saplings) will be planted at Year 2. Funding for tallow control and maintenance plantings is also included.

Project Benefits:
The project would result in approximately 264 net acres over the 20-year project life.

Project Costs:
The total fully-funded cost is $29,937,575.

Preparer of Fact Sheet:
Kevin Roy, FWS, Kevin_Roy@fws.gov, 337-291-3120

Bayou Grande Cheniere Marsh and Ridge Restoration (PPL23 Candidate)

USGS science for a changing world

Ridge *
Marsh Creation *
Project Boundary
* denotes proposed features

0.5 0 0.5 Kilometers
0.5 0 0.5 Miles
Scale 1:35,000

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

Image Source:
2012 DOQQ

Map ID: USGS-NWRC 2013-11-0033
Map Date: September 04, 2013

PPL23 Island Road Marsh Creation and Nourishment

Project Location:
Region 3, Terrebonne Basin, Terrebonne Parish

Problem:
The Terrebonne Basin is an abandoned delta complex, characterized by a thick section of unconsolidated sediments that are undergoing dewatering and compaction, contributing to high subsidence, and a network of old distributary ridges extending southward from Houma. Historically, subsidence and numerous oil and gas canals and pipelines in the area have contributed significantly to wetland losses. Since 1932, the Terrebonne Basin has lost approximately 20% of its wetlands. One-third of the Terrebonne Basin's remaining wetlands are estimated to be lost to open water by the year 2040. There has been a significant reduction in the marsh platform in the vicinity of Island Road (1.60%/year based on USGS data from 1984 to 2011) that has provided some historical wave energy protection. Island Road is the only land access to the Isle of Jean Charles located west of Pointe Aux Chenes which serves unique Native American and minority communities that historically relied on fishing for their livelihood.

Goals:
The restoration concept provides for the creation and/or nourishment of approximately 383 acres of emergent saline marsh that will form a land bridge along portions of the perimeter of Cutoff Canal, Twin Pipelines Canals, and Island Road.

Proposed Solution:
The proposed project's primary feature is to create 364 acres and nourish 19 acres of saline marsh. Sediment will be hydraulically pumped from a borrow source near Lake Felicity. Containment dikes will be constructed around the marsh creation area to retain sediment during pumping and will be degraded and/or gapped no later than three years post construction. Half of the newly constructed marsh (182 acres) will be planted following construction to stabilize the platform and reduce time for full vegetation.

Project Benefits:
The project would result in approximately 312 net acres over the 20-year project life.

Project Costs:
The total fully-funded cost is $39,185,267.

Preparers of Fact Sheet
Kimberly Clements, NOAA's National Marine Fisheries Service, (225) 389-0508, ext 204
Kimberly.Clements@noaa.gov
Patrick Williams, NOAA's National Marine Fisheries Service, (225) 389-0508, ext 208
Patrick.Williams@noaa.gov

Island Road Marsh Creation and Nourishment (PPL23 Candidate)

Marsh Creation *

Project Boundary

* denotes proposed features

0.5 0 0.5 Kilometers

0.5 0 0.5 Miles

Scale 1:35,000

Map ID: USGS-NWRC 2013-11-0045
Map Date: August 02, 2013

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

Image Source:
2012 DOQQ

PPL23 South Grand Chenier Marsh Creation – Baker Tract

Project Location:
The project is located in Region 4, Mermentau Basin, south of Grand Chenier in Cameron Parish, Louisiana, between Highway 82 and Hog Bayou.

Problem:
Marshes within the Hog Bayou Unit are stressed due to limited freshwater input and seasonal salinity spikes exacerbated by construction of the Mermentau Ship Channel. The dredging of the Mermentau River Ship Channel and subsequent wetland loss has increased tidal amplitude and salt water intrusion into the watershed. Other contributors to land loss in the area are subsidence, compaction, and erosion of organic soils. Currently, the project area is characterized as large open water with degraded areas of wetland vegetation, low organic production, and large areas of wave fetch.

Goals:
The primary project goal is to create new wetland habitat, restore degraded marsh, and reduce wave erosion. The project would promote the expansion of emergent marsh and submerged aquatic vegetation throughout the project area. Primary focus is on substantial marsh creation to increase organic production and reduce tidal prism. Successful CWPPRA beneficial use and dedicated dredging marsh creation projects show that placement of dredged material in shallow open water areas can restore vegetated marsh within a few years post construction

Proposed Solution:
Approximately 420 acres of marsh will be created and nourished using material dredged from the Gulf of Mexico. Retention levees will be degraded and approximately 11,756 linear feet of tidal creeks will be constructed by tracking marsh buggies on the marsh platform for estuarine fisheries access. Smooth cordgrass plugs will be planted on 20-foot centers throughout the area (total 49,268 plants).

Project Benefits:
The project would result in approximately 393 net acres over the 20-year project life.

Project Costs:
The total fully-funded cost is $25,441,833.

Preparer of Fact Sheet:
Troy Mallach, NRCS, (337) 291-3064

South Grand Chenier Marsh Creation
(PPL23 Candidate)

Tidal Creeks *
Marsh Creation *
Project Boundary
* denotes proposed features

0.4 0 0.4
Kilometers
0.4 0 0.4
Miles
Scale 1:25,000

Map ID: USGS-NWRC 2013-11-0035
Map Date: July 01, 2013

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

Image Source:
2012 DOQQ

VII. SUMMARY AND CONCLUSIONS

The 23rd PPL consists of 4 projects, for a Phase I cost of $12,471,926 and a Phase II cost of $113,126,843, which will be funded as these projects mature. The total benefits of the projects are estimate to be 652 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 23rd 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.

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

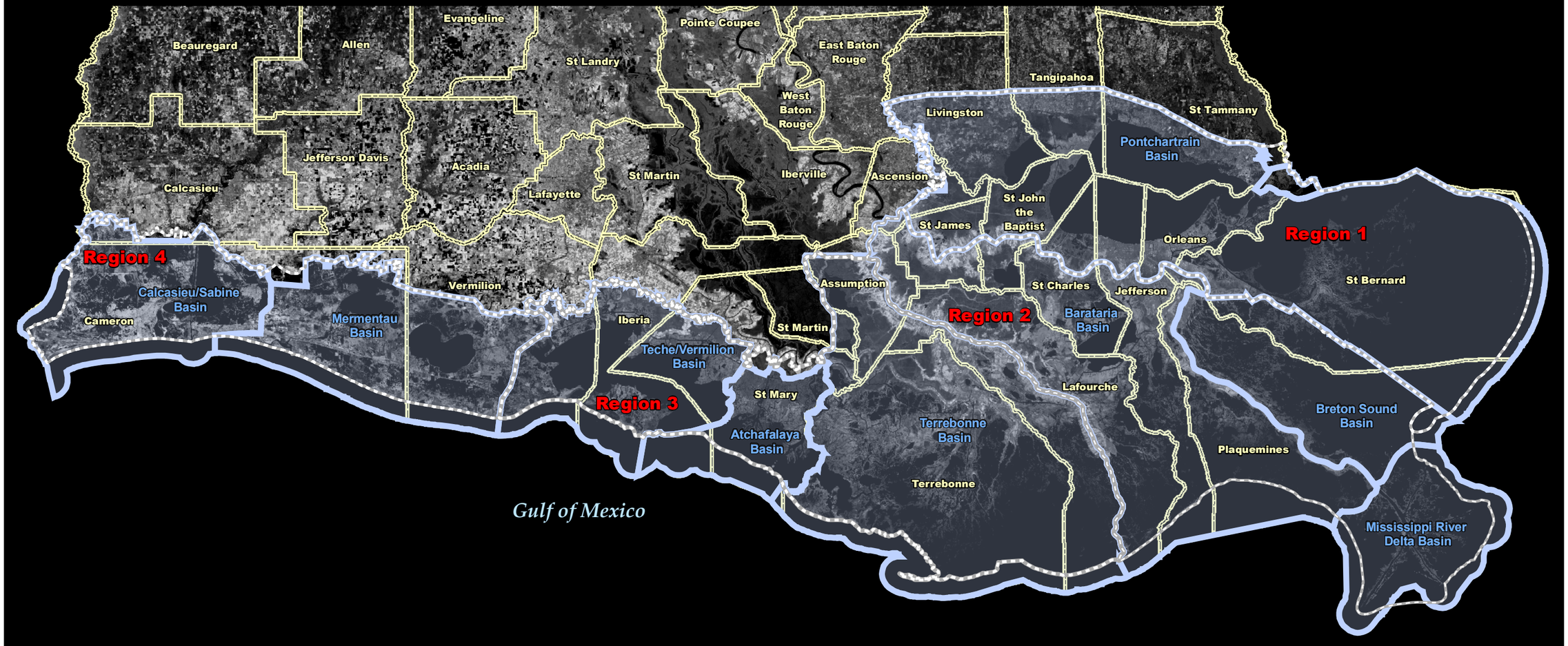

Image Source:
2009 Thematic Mapper Imagery

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 1-23 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 Waterwa 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

ME-04	Freshwater Bayou Wetland Protection
CS-09	Brown Lake Hydrologic Restoration
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-26	Lake Chapeau Sediment Input and Hydrologic Restoration
TE-25	East Timbalier Island Sediment Restoration, Phase 1
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-09a	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. Environmental Protection Agency

CS-28-1 Sabine Refuge Marsh Creation, Cycle 1

CS-28-2 Sabine Refuge Marsh Creation, Cycle 2

CS-28-3 Sabine Refuge Marsh Creation, Cycle 3

CS-28-4 Sabine Refuge Marsh Creation, Cycle 4

CS-28-5 Sabine Refuge Marsh Creation, Cycle 5

U.S. Department of Commerce

PO-25 Bayou Bienvenue Pump 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 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
AT-04	Castille Pass Channel Sediment Delivery
TV-18	Four Mile Canal Terracing and Sediment Trapping
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 Chaland 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 Chaland 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, Phase 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. Environmental Protection Agency
MR-15 Venice Ponds Marsh Creation and Crevasses
U.S. Department of the Army
BS-13 Bayou Lamoque Freshwater Diversion
U.S. Department of Commerce
ME-23 South Pecan Island Freshwater Introduction
U.S. Department of Interior
BA-42 Lake Hermitage Marsh Creation

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 Commerce
BA-48 Bayou Dupont Ridge Creation and Marsh Restoration
LA-08 Bioengineered Oyster Reef Demonstration
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 the Interior
BS-16 Caernarvon Outfall Management/Lake Lery Shoreline Restoration

18th Priority Project List

U.S. Environmental Protection Agency
BS-18 Bertrandville Siphon
U.S. Department of Commerce
BA-68 Grand Liard Marsh and Ridge Restoration
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

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 Agriculture

LA-39 Coastwide Planting
CS-53 Kelso Bayou Marsh Creation

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

21st Priority Project List

U.S. Department of Commerce

CS-59 Oyster Bayou Marsh Restoration
TV-63 Cole's Bayou Marsh Restoration

U.S. Department of Agriculture

PO-133 LaBranche Central Marsh Creation

U.S. Department of the Interior

BA-125 Northwest Turtle Bay Marsh Creation

22nd Priority Project List

U.S. Environmental Protection Agency

BA-164 Bayou Dupont Sediment Delivery- Marsh Creation #3

U.S. Department of Commerce

CS-66 Cameron Meadows Marsh Creation and Terracing

U.S. Department of Agriculture

TE-112 North Catfish Lake Marsh Creation

U.S. Department of the Interior

BS-24 Terracing and Marsh Creation South of Big Mar

23rd Priority Project List

U.S. Department of Commerce

TE-117 Island Road Marsh Creation and Nourishment

U.S. Environmental Protection Agency

BA-171 Caminada Headlands Back Barrier Marsh Creation

U.S. Department of the Interior

BA-173 Bayou Grande Cheniere Marsh & Ridge Restoration

U.S. Department of Agriculture

ME-32 South Grand Chenier Marsh Creation - Baker Tract

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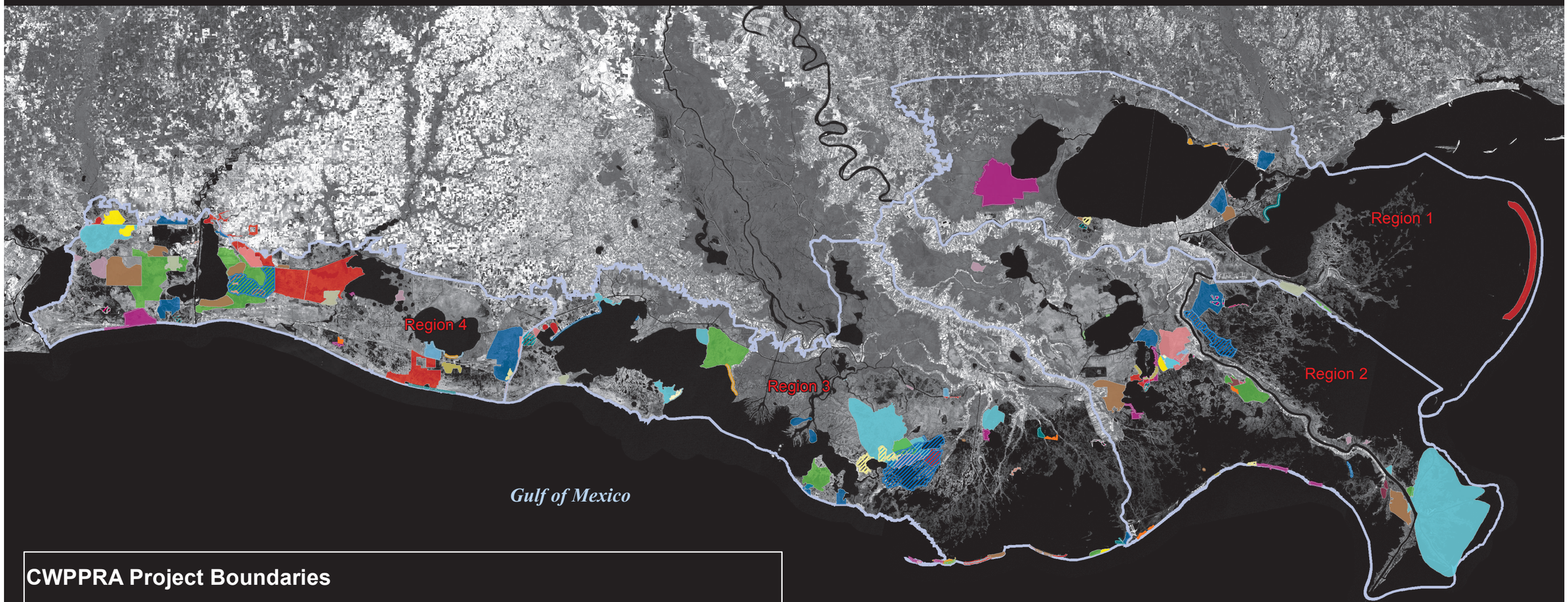
Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-23



CWPPRA Project Boundaries

PPL 1	PPL 6	PPL 11	PPL 16	PPL 21
PPL 2	PPL 7	PPL 12	PPL 17	PPL 22
PPL 3	PPL 8	PPL 13	PPL 18	PPL 23
PPL 4	PPL 9	PPL 14	PPL 19	
PPL 5	PPL 10	PPL 15	PPL 20	

Region Boundary

N

1:1,275,000

10 0 10 20 Kilometers

10 0 10 20 Miles

Image Source:
2010 Landsat Thematic Mapper 5 Imagery
Band 5 Mosaic

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

Map ID: USGS-NWRC 2014-11-0015
Map Date: June 18, 2014
Data accurate as of June 17, 2014

USGS
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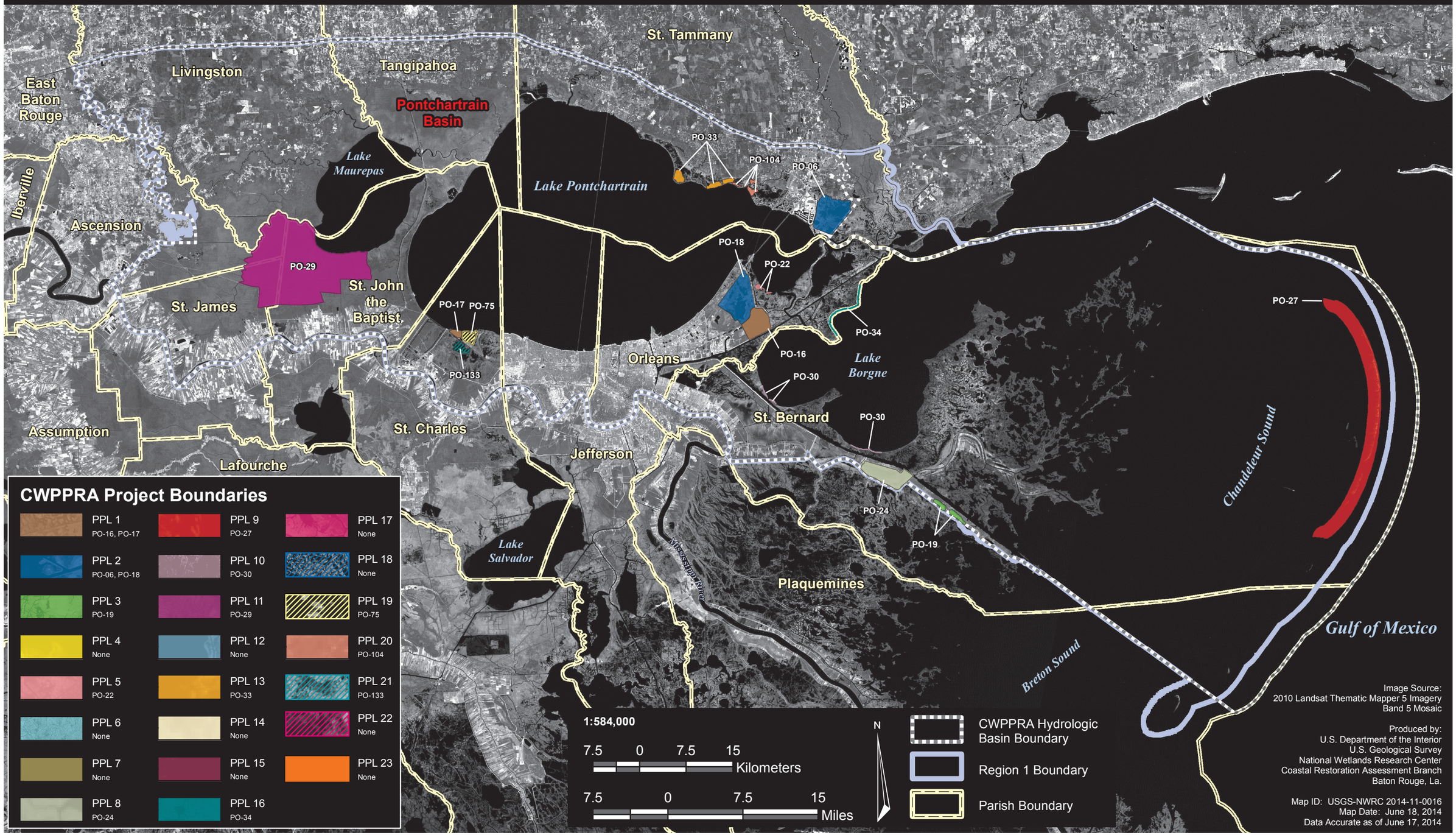
Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-23 Coast 2050 Region 1



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Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-23 Coast 2050 Region 2

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

BA-34-2
BA-15
BA-20
BA-27d
BA-03c
BA-41
BA-39
BA-27
BA-164
BA-48
BA-42
BA-47
BA-23
BA-36
BA-26
BA-125
BA-173
BA-04c
BA-02
BA-27c
BA-37
BA-19
BA-76
BA-35
BA-68
BA-28
BA-38
BA-171
BS-024
BS-03a
BS-16
BS-18
BS-11
MR-09
MR-06
MR-15
MR-03
MR-10

CWPPRA Project Boundaries

PPL 1: BA-02, BA-19, MR-03	PPL 9: BA-27c	PPL 17: BA-47, BA-48, BS-16
PPL 2: BA-20, BS-03a	PPL 10: BA-34-2, BS-11	PPL 18: BA-68, BS-18
PPL 3: BA-04c, BA-15, MR-06	PPL 11: BA-27d, BA-35, BA-36, BA-37, BA-38	PPL 19: BS-76
PPL 4: BA-23	PPL 12: BA-39	PPL 20: None
PPL 5: BA-03c	PPL 13: None	PPL 21: BA-125
PPL 6: BA-26, MR-09, MR-10	PPL 14: BA-41	PPL 22: BA-164, BS-024
PPL 7: BA-27, BA-28	PPL 15: BA-42, MR-15	PPL 23: BA-171, BA-173
PPL 8: None	PPL 16: None	

1:625,000

6 0 6 12 Kilometers

6 0 6 12 Miles

N

CWPPRA Hydrologic Basin Boundary

Region 2 Boundary

Parish Boundary

Image Source:
2010 Landsat Thematic Mapper 5 Imagery Band 5 Mosaic

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

Map ID: USGS-NWRC 2014-11-0017
Map Date: June 18, 2014
Data Accurate as of June 17, 2014

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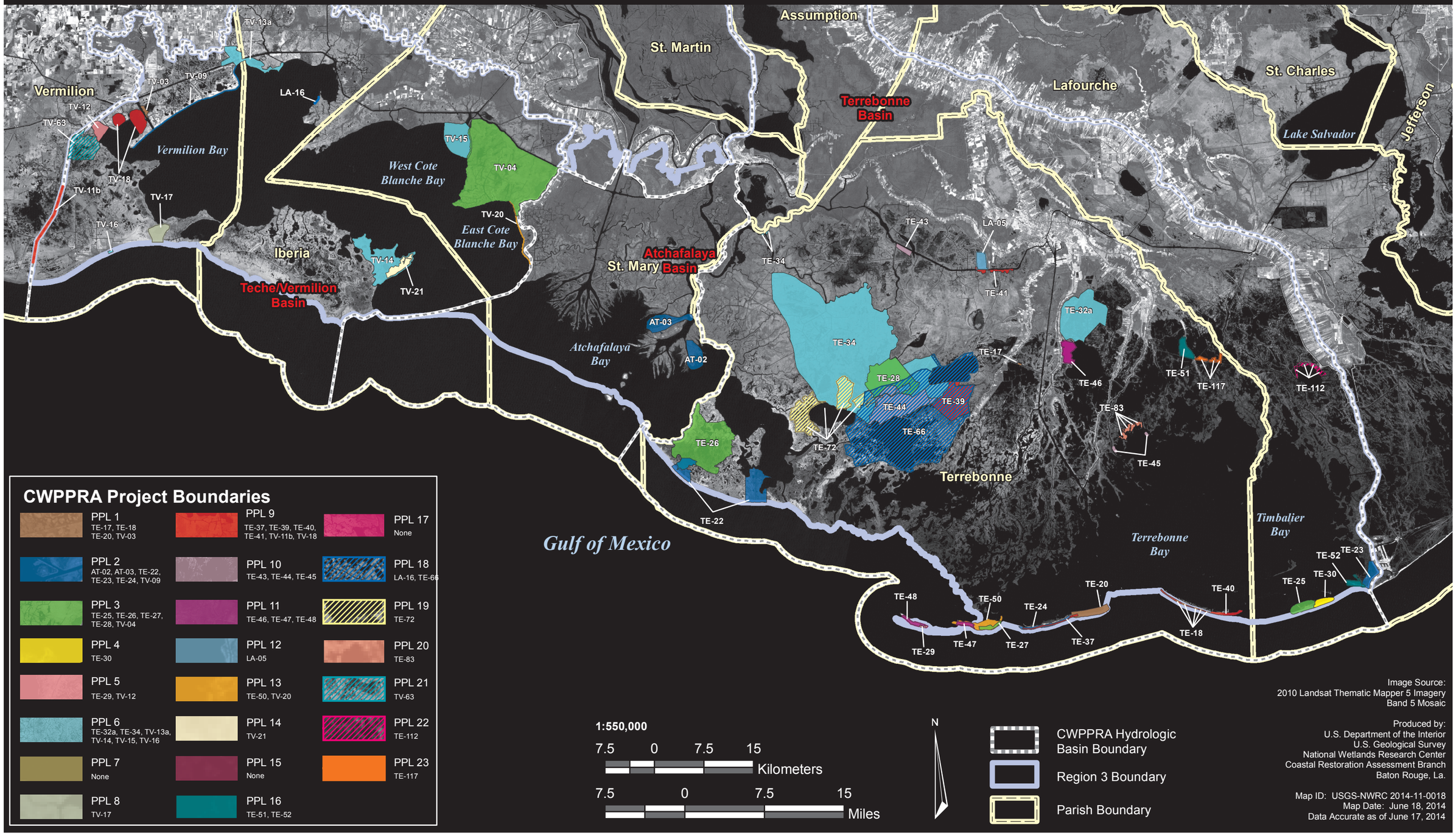
Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-23 Coast 2050 Region 3



CWPPRA Project Boundaries

PPL 1 TE-17, TE-18 TE-20, TV-03	PPL 9 TE-37, TE-39, TE-40, TE-41, TV-11b, TV-18	PPL 17 None
PPL 2 AT-02, AT-03, TE-22, TE-23, TE-24, TV-09	PPL 10 TE-43, TE-44, TE-45	PPL 18 LA-16, TE-66
PPL 3 TE-25, TE-26, TE-27, TE-28, TV-04	PPL 11 TE-46, TE-47, TE-48	PPL 19 TE-72
PPL 4 TE-30	PPL 12 LA-05	PPL 20 TE-83
PPL 5 TE-29, TV-12	PPL 13 TE-50, TV-20	PPL 21 TV-63
PPL 6 TE-32a, TE-34, TV-13a, TV-14, TV-15, TV-16	PPL 14 TV-21	PPL 22 TE-112
PPL 7 None	PPL 15 None	PPL 23 TE-117
PPL 8 TV-17	PPL 16 TE-51, TE-52	

1:550,000

7.5 0 7.5 15 Kilometers

7.5 0 7.5 15 Miles

N

CWPPRA Hydrologic Basin Boundary

Region 3 Boundary

Parish Boundary

Image Source:
2010 Landsat Thematic Mapper 5 Imagery
Band 5 Mosaic

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

Map ID: USGS-NWRC 2014-11-0018
Map Date: June 18, 2014
Data Accurate as of June 17, 2014

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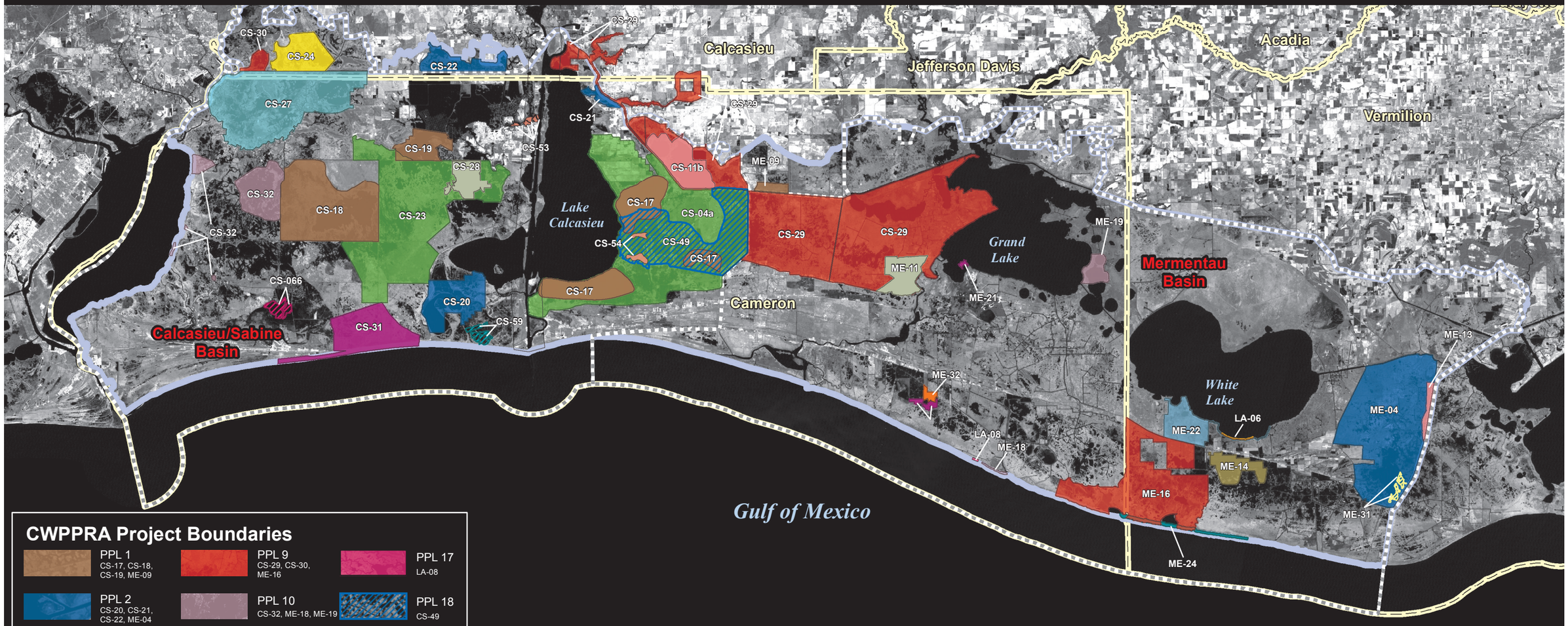
Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-23 Coast 2050 Region 4



CWPPRA Project Boundaries

PPL 1: CS-17, CS-18, CS-19, ME-09	PPL 9: CS-29, CS-30, ME-16	PPL 17: LA-08
PPL 2: CS-20, CS-21, CS-22, ME-04	PPL 10: CS-32, ME-18, ME-19	PPL 18: CS-49
PPL 3: CS-04a, CS-23	PPL 11: CS-31, ME-20, ME-21	PPL 19: ME-31
PPL 4: CS-24	PPL 12: ME-22	PPL 20: CS-53, CS-54
PPL 5: CS-11b, ME-13	PPL 13: LA-06	PPL 21: CS-59
PPL 6: CS-27	PPL 14: None	PPL 22: CS-066
PPL 7: ME-14	PPL 15: None	PPL 23: ME-32
PPL 8: CS-28, ME-11	PPL 16: ME-24	

1:460,000

7 0 7 14 Kilometers

7 0 7 14 Miles

N

CWPPRA Hydrologic Basin Boundary

Region 4 Boundary

Parish Boundary

Image Source:
2010 Landsat Thematic Mapper 5 Imagery Band 5 Mosaic

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Map ID: USGS-NWRC 2014-11-0019
Map Date: June 18, 2014
Data Accurate as of June 17, 2014