



24th PRIORITY PROJECT LIST REPORT

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

September 2015

Coastal Wetlands Planning, Protection, and Restoration Act

24th Priority Project List Report

Executive Summary of PPL 24 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 24th PPL (PPL 24) and fulfills the requirements of CWPPRA Section 303(a).

Under the development of PPL 24, 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 61 project proposals and 7 demonstration project proposals, 18 projects and 4 demonstration projects were nominated by CWPPRA agencies and qualifying parish representatives via electronic vote on February 25, 2014. Ten candidate projects and one candidate demonstration project was selected from the list of nominees at the Technical Committee meeting held on April 15, 2014. These PPL 24 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 24 development process the Task Force authorized the following four new coastal restoration projects:

- No Name Bayou Marsh Creation and Nourishment (CS-78)
- New Orleans Landbridge Shoreline Stabilization and Marsh Creation (PO-169)
- Shell Beach South Marsh Creation (PO-168)
- West Fourchon Marsh Creation and Nourishment (TE-134)

These PPL 24 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 24 coastal restoration projects is estimated to be \$11,045,165. 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 \$92,264,573. The total net wetland benefit that would be derived by implementing the four PPL 24 projects is estimated to be 1,312 acres or 704 AAHUs over a 20-year period. The Task Force will consider approving Phase II funding for individual PPL 24 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 two 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:

- West Pointe a La Hache Marsh Creation (BA-47)
- Chenier Ronquille Barrier Island Restoration (BA-76)

With the addition of the four new PPL 24 projects and the removal of the two de-authorized project, there are a total of 144 active Louisiana coastal restoration projects in the CWPPRA Program. The current estimate for the 144 CWPPRA projects combined is \$2.32B. The current funded estimate for approved phases for all projects is \$1.7B. At the time of the production of this PPL 24 report, \$1.12B has been obligated and \$936M had been expended on all CWPPRA coastal restoration projects in Louisiana since inception of the program in 1991. Of the 144 active projects, 101 projects have completed construction, 21 projects are under construction, and 22 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 \$73 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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Coastal Wetlands Planning, Protection, and Restoration Act

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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 24th 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 24. 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 24th PRIORITY PROJECT LIST

IDENTIFICATION & SELECTION OF CANDIDATE & DEMONSTRATION PROJECTS

Regional Planning Team (RPT) meetings were held during the period of February 11 through February 13, 2014 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 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 25, 2014 for the 24th PPL to choose four projects each in Terrebonne and Barataria based on the high loss rates (1985-2006) in those basins, three projects in Pontchartrain two projects each in the Teche/Vermilion, Mermentau, and Calcasieu/Sabine, and one coast wide project. In addition, four demonstration projects were selected as nominees. A total of 18 projects and four demonstration projects were nominated. A schedule of meetings is shown in Table 1.

Table 1: RPT Meetings to Propose/Nominate Projects

| | |
|-------------------------|-------------------|
| Region 1: Lacombe, LA | February 13, 2014 |
| Region 2: Lacombe, LA | February 13, 2014 |
| Region 3: Houma, LA | February 12, 2014 |
| Region 4: Lafayette, LA | February 11, 2014 |
| Electronic Voting | February 25, 2014 |

The Engineering and Environmental Work Groups and the AAG met March 19 and March 20, 2014 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 four demonstration project nominees. At this meeting, after extensive evaluation, a decision was made by the Environmental and Engineering Work Groups and AAG to pursue only one of the four nominee demonstration projects. The Engineering and Environmental Work Groups also identified any potential issues associated with each nominee. The P&E Subcommittee prepared a matrix of nominated projects' cost estimates and benefits and furnished it to the Technical Committee and Coastal Protection and Restoration Authority (CPRA) on April 3, 2014. 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 and future PPL's include selecting projects that would be consistent with the 2012 State Master Plan.

Table 2a: 24th Priority Project List - Candidate Nominee Project Matrix by Basin

| Rg | Basin | Type | Project | Preliminary Fully-Funded Cost Range | Preliminary Benefits (Net Acres Range) | Potential Issues | | | | |
|----|------------|-------|--|-------------------------------------|--|------------------|-------------|----------------------|-----|--------------|
| | | | | | | Oysters | Land Rights | Pipelines /Utilities | O&M | Other Issues |
| 1 | PO | MC/SP | New Orleans Landbridge Shoreline Stabilization & Marsh Creation | \$10M-\$15M | 100-150 | | | x | | x |
| 1 | PO | MC/SP | Shell Beach South Marsh Creation | \$25M - \$30M | 350-400 | x | | | | x |
| 1 | PO | MC | Bayou Bienvenue Marsh Creation | \$30M - \$35M | 300-350 | | x | x | | |
| 2 | BA | MC | Bayou Dupont Sediment Delivery - Marsh Creation 4 | \$25M - \$30M | 200-250 | | | x | | x |
| 2 | BA | MC | Barataria Bay Waterway East Marsh Creation 4 | Over \$50M | 200-250 | | | x | | x |
| 2 | BA | MC | East Leeville Marsh Creation and Nourishment | \$35M - \$40M | 300-350 | x | | x | | x |
| 2 | BA | MC | Grand Bayou Marsh Creation and Terracing | \$35M - \$40M | 350-400 | | | x | | x |
| 3 | TE | MC/TR | East Catfish Lake Marsh Creation and Terracing | \$30M - \$35M | 500-600 | x | | x | | |
| 3 | TE | MC | West Fourchon Marsh Creation and Nourishment | \$30M - \$35M | 300-350 | x | | x | | |
| 3 | TE | SP/MC | Lake Felicite Oyster Reef Shoreline Protection and Marsh Creation | \$25M - \$30M | 200-250 | x | | x | | |
| 3 | TE | MC | Bayou Dularge Ridge Restoration and Marsh Creation | \$30M - \$35M | 300-350 | x | | | | x |
| 3 | TV | SP | South and West Vermilion Bay Shoreline Protection-Critical Reaches | \$30M - \$35M | 150-200 | | | x | x | |
| 3 | TV | MC | South Humble Marsh Creation and Nourishment | \$35M - \$40M | 350-400 | | | x | | x |
| 4 | ME | MC/FD | Southeast Pecan Island Marsh Creation and Freshwater Enhancement | \$35M - \$40M | 350-400 | | | x | x | x |
| 4 | ME | SP | Umbrella Bay Shoreline Protection | \$20M - \$25M | 100-150 | | | x | x | |
| 4 | CS | MC | No Name Bayou Marsh Creation and Nourishment | \$25M - \$30M | 350-400 | | | x | | |
| 4 | CS | SP | East Holly Beach Gulf Shoreline Protection | \$30M - \$35M | 150-200 | | | | x | x |
| | Coast-wide | | Oyster Reef Shoreline Protection | \$30M - \$35M | 200-250 | 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.

Table 2b: 24th Priority Project List Demonstration Nominee Project Matrix

| Demonstration Project Name | Meets Demonstration Project Criteria? | Lead Agency | Technique Demonstrated |
|--|--|--------------------|---|
| Sediment Capture Tide Pump | Yes | None | This project utilizes a tide-driven pump to move water and associated sediment from a water source to an area in need of fresh water, sediments, and nutrients. It operates on tidal energy and thus requires no outside power source. In concept, it is similar to a siphon. |
| Stabilized Shorelines for Shoreline Protection | Yes | None | This project seeks to stabilize and protect eroding interior marsh shorelines along bays and lakes. The technique involves two methods; 1) placing stabilized soil material along the shoreline using a barge and long-reach excavator and 2) placing stabilized soil material into a trench which would be excavated along an eroding marsh shoreline. |
| Innovative Bedload Sediment Collector | Yes | COE | This project utilizes a passive sediment collector system placed on the bottom of a river to capture bedload sediments. The sediments are pumped from the collector to a nearby dewatering site or, with additional pumps, to a marsh creation site. |
| Ecosystems by Walter Marine | Yes | None | This project utilizes concrete discs, embedded with limestone, which are then stacked on pilings and placed along a shoreline to reduce wave energy. |

The CWPPRA Technical Committee met publicly on April 15, 2014 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 2014 through September 2014. The Environmental and Engineering Work Groups and AAG met to refine the projects and develop boundaries on May 16, 2014. Interagency field visits were conducted during May and June 2014 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 14 through August 16, 2014, the Engineering Work Group met to review and approve the Phase I and II cost estimates developed by the agencies for the ten PPL 24 candidates. In September 2014, 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 6, 2014. The Economics Work Group reviewed the final project cost estimates and developed annualized costs in the month of October 2014.

The Environmental and Engineering Work Groups and AAG also met on October 2, 2014 to evaluate and rank the one demonstration project. The demonstration project was evaluated using defined parameters. Within each of these parameters a project was graded as low, medium or high and assigned point scores of 1, 2, or 3, respectively. The summary of the evaluation from the Environmental and Engineering Work Groups and AAG is shown in Table 3.

The parameters used to evaluate the demonstration projects were:

(P₁) Innovativeness - The demonstration project should contain technology that has not been fully developed for routine application in coastal Louisiana or in certain regions of the coastal zone. The technology demonstrated should be unique and not duplicative in nature to traditional methods or other previously tested techniques for which the results are known.

Techniques which are similar to traditional methods or other previously tested techniques should receive lower scores than those which are truly unique and innovative.

(P₂) Applicability or Transferability - Demonstration projects should contain technology which can be transferred to other areas of the coastal zone. However, this does not imply that the technology must be applicable to all areas of the coastal zone. Techniques, which can only be applied in certain wetland types or in certain coastal regions, are acceptable but may receive lower scores than techniques with broad applicability.

(P₃) Potential Cost Effectiveness - The potential cost-effectiveness of the demonstration project's method of achieving project objectives should be compared to the cost-effectiveness of traditional methods. In other words, techniques which provide substantial cost savings over traditional methods should receive higher scores than those with less substantial cost savings. Those techniques which would be more costly than traditional methods, to provide the same level of benefits, should receive the lowest scores. Information supporting any claims of potential cost savings should be provided.

(P₄) Potential Environmental Benefits - Does the demonstration project have the potential to provide environmental benefits equal to traditional methods? Somewhat less than traditional methods? Above and beyond traditional methods? Techniques with the potential to provide benefits above and beyond those provided by traditional techniques should receive the highest scores.

(P₅) Recognized Need for the Information to be Acquired - Within the restoration community, is there a recognized need for information on the technique being investigated? Demonstration projects which provide information on techniques for which there is a great need should receive the highest scores.

(P₆) Potential for Technological Advancement - Would the demonstration project significantly advance the traditional technology currently being used to achieve project objectives? Those techniques which have a high potential for completely replacing an existing technique at a lower cost and without reducing wetland benefits should receive the highest scores.

Table 3: Review of 24th Priority Project List Candidate Demonstration Projects

| Demonstration Project Name | Total Fully-Funded Cost | P1 | P2 | P3 | P4 | P5 | P6 | Total Score |
|--|-------------------------|----|----|----|----|----|----|-------------|
| Innovative Bedload Sediment Collector Demo | \$2,608,601 | 3 | 1 | 1 | 2 | 1 | 1 | 9 |

Demonstration Project Parameters: (P₁) Innovativeness; (P₂) Applicability or Transferability; (P₃) Potential Cost Effectiveness; (P₄) Potential Environmental Benefits; (P₅) Recognized Need for the Information to be Acquired; (P₆) Potential for Technological Advancement. Parameter Grading as to effect: 1= low; 2 = medium; 3 = high

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

Table 4: 24th 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 Creation | 94 | 167 | \$17,549,317 | \$1,170,739 | \$12,455 | \$105,086 |
| Shell Beach South Marsh Creation Restoration | 184 | 344 | \$28,101,520 | \$1,883,180 | \$10,235 | \$81,690 |
| Bayou Bienvenue Marsh Creation | 85 | 276 | \$34,219,915 | \$2,315,093 | \$27,236 | \$123,985 |
| Grand Bayou Marsh Creation & Terracing | 174 | 340 | \$37,405,780 | \$2,511,573 | \$14,434 | \$110,017 |
| East Leeville Marsh Creation & Nourishment | 196 | 326 | \$34,883,208 | \$2,333,005 | \$11,903 | \$107,004 |
| West Fourchon Marsh Creation & Marsh Nourishment | 195 | 304 | \$29,405,764 | \$1,976,277 | \$10,135 | \$96,729 |
| Bayou Dularge Ridge Restoration & Marsh Creation | 176 | 304 | \$42,725,312 | \$2,897,022 | \$16,460 | \$140,544 |
| South Humble Marsh Creation & Nourishment | 183 | 294 | \$34,489,655 | \$2,318,781 | \$12,671 | \$117,312 |
| Southeast Pecan Island Marsh Creation & Freshwater Enhancement | 215 | 388 | \$38,586,563 | \$2,566,812 | \$11,939 | \$99,450 |
| No Name Bayou Marsh Creation & Nourishment | 231 | 497 | \$28,253,137 | \$1,884,364 | \$8,157 | \$56,847 |

The CWPPRA Technical Committee met on December 11, 2014 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, 2015, the CWPPRA Task Force reviewed the Technical Committee recommendations and moved to adopt the recommendation without change.

Table 5: 24th 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 |
|--------------|---|-------------------|-------|-------|-----|-----|------|------|--------------|--------------------|
| CS-78 | No Name Bayou Marsh Creation & Nourishment | R4 | 5 | 4 | 4 | 1 | 6 | 5 | 6 | 25 |
| PO-169 | New Orleans Landbridge Shoreline Stabilization & Marsh Creation | R1 | 4 | 5 | 3 | 6 | 2 | 3 | 6 | 23 |
| PO-168 | Shell Beach South Marsh Creation | R1 | 6 | | 5 | 3 | 4 | | 4 | 18 |
| TE-134 | West Fourchon Marsh Creation & Marsh Nourishment | R3 | | 6 | 2 | 4 | 3 | | 4 | 15 |
| + | Southeast Pecan Island Marsh Creation & Freshwater Enhancement | R4 | | | 1 | 2 | 1 | 6 | 4 | 10 |
| + | East Leeville Marsh Creation & Nourishment | R2 | 2 | 3 | | | 5 | | 3 | 10 |
| + | Bayou Bienvenue Marsh Creation t | R1 | | 1 | 6 | | | | 3 | 8 |
| + | Grand Bayou Marsh Creation & Terracing Enhancement | R2 | | 2 | | 5 | | 1 | 3 | 8 |
| + | Bayou Dularge Ridge Restoration & Marsh Creation | R3 | 3 | | | | | 4 | 2 | 7 |
| + | South Humble Marsh Creation & Nourishment | R3 | | | | | | 2 | 1 | 2 |

*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. V₁--percent of wetland covered by emergent vegetation,
 - b. V₂--percent open water dominated by submerged aquatic vegetation,
 - c. V₃--marsh edge and interspersed,
 - d. V₄--percent open water less than or equal to 1.5 feet deep,
 - e. V₅--salinity, and
 - f. V₆--aquatic organism access.
2. A Suitability Index graph for each variable, which defines the assumed relationship between habitat quality (Suitability Index) and different variable values; and
3. A mathematical formula that combines the Suitability Index for each variable into a single value for wetland habitat quality; that single value is referred to as the Habitat Suitability Index, or HSI.

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

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

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

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

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

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

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

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

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

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

Financial costs chiefly consist of the resources needed to plan, design, construct, operate, monitor, and maintain the project. These are the costs, when adjusted for inflation, which the Task Force uses in budgeting decisions.

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

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

III. DESCRIPTION OF CANDIDATE PROJECTS

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

PPL24 New Orleans Landbridge Shoreline Stabilization and Marsh Creation

Project Location:

The project is located in 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 Hurricane Katrina. Within the project area, Hurricane Katrina 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, the Fort Pike State Historical Site, and infrastructure including U.S. Highway 90. USGS land change analysis determined a loss rate of -0.35% per year for the 1984 -2011 period 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 271 acres of brackish marsh and to enhance 15,340 linear feet of shoreline to maintain the structural integrity of the Orleans Landbridge.

Proposed Solution:

Approximately 1.6 million cubic yards of material will be dredged from two borrow areas in Lakes St. Catherine and Pontchartrain to create 169 acres and nourish 102 acres of brackish marsh. Containment dikes will be constructed around four marsh creation areas to retain sediment during pumping. Approximately 15,340 linear feet of lake shoreline will be enhanced with an earthen berm, with a top width of 20 feet, to add additional protection from wind-induced wave fetch. This berm will also function as containment for dredged material. No later than three years post construction, containment dikes that are not functioning as shoreline enhancement will be degraded and/or gapped. Vegetative plantings are proposed including five rows along the crown and two rows along the front slope of the shoreline protection berm, as well as within the marsh platform area.

Project Benefits:

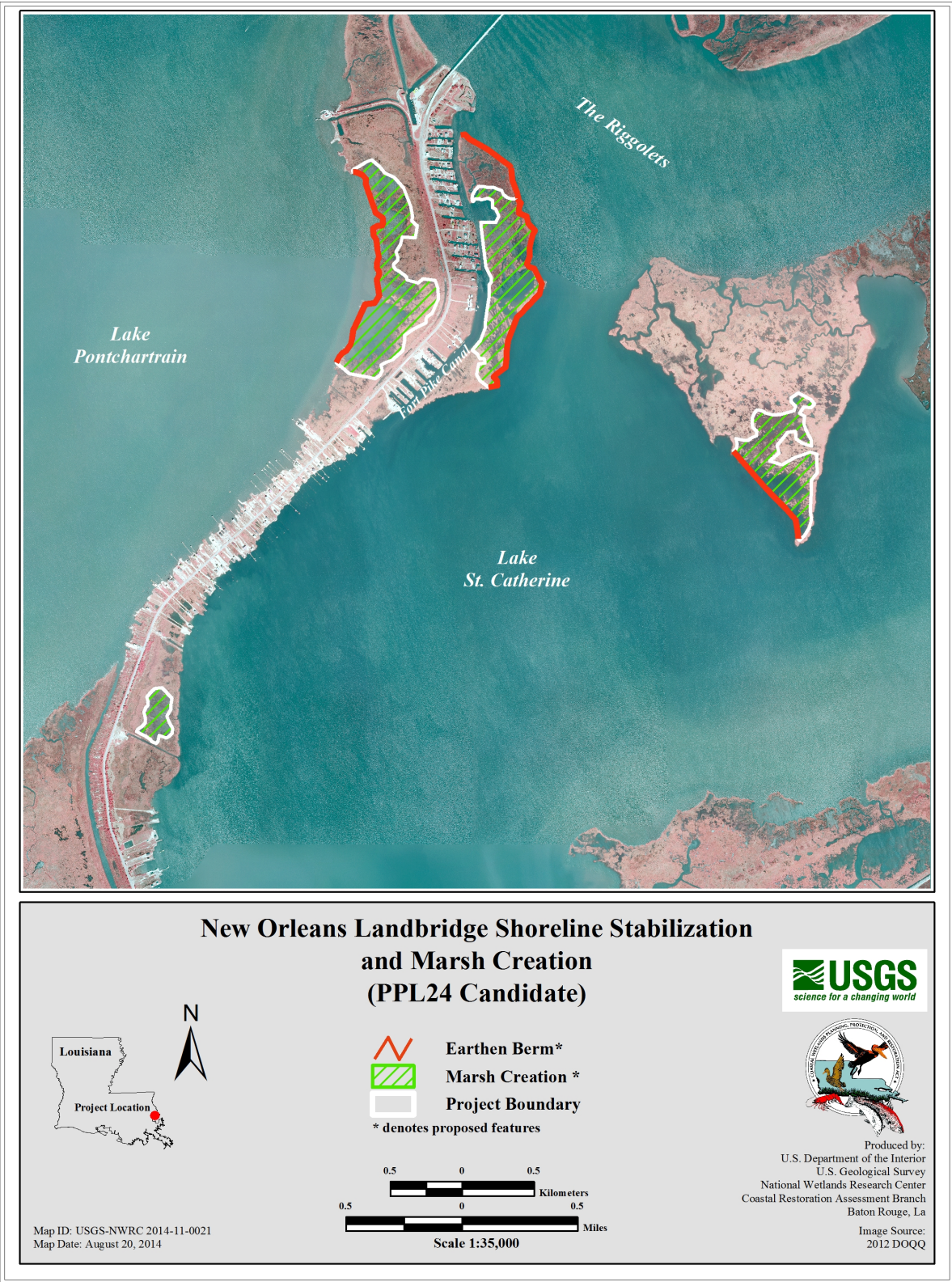
The project would result in approximately 167 net acres over the 20-year project life.

Project Costs:

The total fully-funded cost is \$17,549,317.

Preparers of Fact Sheet:

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PPL24 Shell Beach South Marsh Creation

Project Location:

Region 1, Pontchartrain Basin, South Lake Borgne Mapping Unit, St. Bernard Parish, north bank of the Mississippi River Gulf Outlet (MRGO) in the vicinity of Shell Beach.

Problem:

The marsh boundary separating Lake Borgne and the MRGO has undergone both interior and shoreline wetland losses due to subsidence, impacts related to construction and use of the MRGO (i.e., deep draft vessel traffic), and wind-driven waves. Although much of the project area is protected from edge erosion by shoreline protection measures, interior wetland loss due to subsidence continues to cause marsh fragmentation and pond enlargement. Wetland loss rates in the project area are estimated to be -0.60 percent a year based on USGS analysis.

Goals:

The project would create and/or nourish 634 acres (ac) of emergent brackish marsh to stabilize the landform separating Lake Borgne from the MRGO. Using fill material from Lake Borgne, 346 ac of new marsh would be created and 288 ac nourished.

Proposed Solution:

The proposed project will create and nourish 634 acres of marsh using dredged sediment from Lake Borgne. Existing high shorelines along Lake Borgne, remnants of previous containment dikes and marsh edge, would be used for containment to the extent practical. Constructed containment dikes would be breached/gapped as needed to provide tidal exchange after fill materials settle and consolidate. The project would create 346 acres of marsh and nourish at least 288 acres of existing fragmented marsh. A target fill elevation of +1.2 feet is envisioned to enhance longevity of this land form. Additionally, 187 acres of vegetative planting will occur within the newly created areas. Due to the presence of existing banklines, dredged slurry overflow could potentially be discharged immediately adjacent to the project polygons, resulting in nourishment of additional areas.

Project Benefits:

The project would result in approximately 344 net acres over the 20-year project life.

Construction Costs

The total fully-funded cost is \$28,101,520.

Preparer(s) of Fact Sheet:

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Aaron Hoff, USEPA, 214.665.7319, hoff.aaron@epa.gov

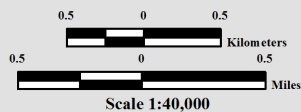
Barbara Aldridge, 214.665.2712, aldridge.barbara@epa.gov



Shell Beach South Marsh Creation (PPL24 Candidate)



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



Map ID: USGS-NWRC 2014-11-0023
Map Date: July 11, 2014



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

PPL24 Bayou Bienvenue Marsh Creation

Project Location:

Region 1, Pontchartrain Basin, Orleans Parish, adjacent to St. Bernard Parish.

Problem:

Over the past decades, the wetlands and wetland function in the area have been lost because of altered hydrology due to impoundment, subsidence, and saltwater intrusion. The area was heavily impacted by the construction of the MRGO in the 1960's. The majority of the area is shallow open water, littered with cypress stumps and snags. The land loss rate for the project area is -2.04% per year.

Goals:

The goal of the project is to create/nourish 351 acres of emergent marsh in the triangle area adjacent to Bayou Bienvenue using sediment mined from the Mississippi River. Specific goals include:

1. Create 337 acres of marsh and nourish 14 acres of existing marsh using Mississippi River sediment; and
2. Restore the historic bankline along Bayou Bienvenue.

Proposed Solution:

Sediment from the Mississippi River will be hydraulically dredged and pumped via pipeline to create/nourish approximately 351 acres of wetlands by converting open water into marsh and nourishing existing marsh remnants in the triangular-shaped area adjacent to the headwaters of Bayou Bienvenue. To help stabilize the new marsh platform, approximately half of the project area (176 ac) will be planted after construction to reduce time for full vegetation. Containment dikes will be constructed around the marsh creation area to keep material within the project area during pumping, which will be degraded in appropriate areas no later than three years after construction is completed. Restoration in this area will build New Orleans' defenses against hurricanes and flooding and offer opportunities for public recreation and wildlife habitat.

Project Benefits:

The project would result in approximately 276 net acres over the 20-year project life.

Project Costs:

The total fully-funded cost is \$34,219,915.

Preparers of Fact Sheet:



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Bayou Bienvenue Marsh Creation (PPL24 Candidate)



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



Map ID: USGS-NWRC 2014-11-0026
Map Date: September 19, 2014



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 Digital Orthophoto Quarter Quadrangles

PPL24 Grand Bayou Marsh Creation and Terracing

Project Location:

Region 2, Barataria Basin, Plaquemines Parish

Problem:

Within the Lake Hermitage basin, between Bayou Grande Cheniere and the Mississippi River, significant marsh loss has occurred with the construction of oil/gas canals, subsidence, and sediment deprivation. From examination of aerial photography, it appears that the majority of this loss occurred during the 1960s and 1970s when numerous oil/gas canals were dredged in the area. Based on the hyper-temporal analysis conducted by USGS for the extended project boundary, loss rates in the project area are estimated to be -1.49% per year for the period 1984 to 2011.

Goals:

The primary goals of this project are; 1) restore marsh habitat in the open water areas via marsh creation and terracing and 2) reduce fetch and wave energy in open water areas via the construction of terraces. Specific goals of the project are: 1) Create approximately 366 acres of marsh with dredged material from the Mississippi River; 2) create 52,650 linear feet (37 acres) of terraces.

Proposed Solution:

Sediments from a Mississippi River borrow site will be hydraulically dredged and pumped via pipeline to create/nourish approximately 366 acres of marsh. The proposed design is to place the dredged material to a fill height of +2.0 ft NAVD88 (per the BA-42 Lake Hermitage Marsh Creation Project). Dewatering and compaction of dredged sediments should produce marsh elevations conducive to the establishment of emergent marsh and within the intertidal range. Containment dikes will be constructed as necessary. Perimeter containment dikes exposed to high wave energy will be planted. Containment dikes will be gapped.

Approximately 52,650 linear feet of terraces (35 acres) will be constructed in open water areas east and west of Grand Bayou. Terraces will have a 15-ft crown width, a height of +2.5 ft NAVD88, and side slopes of 1(V):6(H). A barge-mounted bucket dredge and marsh buggies will be utilized for construction. The terraces will be planted with seashore paspalum on the crown and smooth cordgrass on the side slopes.

Project Benefits:

The project would result in approximately 340 net acres over the 20-year project life.

Project Costs:

The total fully-funded cost is \$37,405,780.




Preparer of Fact Sheet:

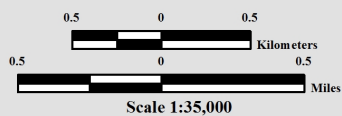
Kevin Roy, FWS, Kevin_Roy@fws.gov, 337-291-3120



Grand Bayou Marsh Creation and Terracing (PPL24 Candidate)



-  Marsh Creation *
 -  Terrace Field *
 -  Project Boundary
- * denotes proposed features



Map ID: USGS-NWRC 2014-11-0020
Map Date: July 02, 2014



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

PPL24 East Leeville Marsh Creation and Nourishment

Project Location:

Region 2, Barataria Basin, Lafourche Parish (primary)
Region 3, Terrebonne Basin, Lafourche Parish

Problem:

There is historic and continued rapid land loss within the project and surrounding areas resulting from oil and gas exploration, subsidence, wind erosion, storms, and altered hydrology. The limits of Southwestern Louisiana Canal are difficult to determine in some areas because land loss is causing the coalescence of the canal with adjacent water bodies. A large section of the western bank of South Lake has been lost increasing wave fetch and further coalescence of natural lakes with adjacent waters that were once marsh. Natural tidal flow and drainage patterns which once existed are currently circumvented by the increasing area of open water. The wetland loss rate for the project area is -1.15%/year based on USGS data from 1984 to 2011.

Goals:

The project goal is to create approximately 352 acres and nourish 130 acres of saline marsh east of Leeville.

Proposed Solution:

After consideration of three potential alternatives, an alignment was selected to re-establish an arc of wetlands along the north side of Southwestern Canal, Lake Jesse, and the west side of South Lake. This is to begin rebuilding the structural framework of wetlands east of Leeville and provide protection for Leeville from southeasterly winds and tides. A robust engineering and design cost was included for full flexibility during Phase 1 to expand the project if cost allows or to assess alternative configurations, if necessary. The proposed features consist of hydraulically mining sediment from a borrow source in Little Lake west of Leeville and pumping material to create and nourish marsh east of Leeville. The disposal areas would be fully contained during construction and gapped no later than three years post construction to establish tidal connection and function. Additionally, 50% of the created marsh acres would be planted with smooth cordgrass following construction to help stabilize the created platform by increasing the rate of colonization.

Project Benefits:

The project would result in approximately 326 net acres over the 20-year project life.

Project Costs:

The total fully-funded cost is \$34,883,208.

Preparers of Fact Sheet

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East Leeville Marsh Creation and Nourishment (PPL24 Candidate)

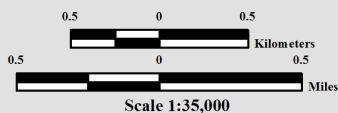


Marsh Creation *



Project Boundary

* denotes proposed features



Map ID: USGS-NWRC 2014-11-0024
Map Date: June 25, 2014



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

PPL24 West Fourchon Marsh Creation and Marsh Nourishment

Project Location:

The project is located in Region 2, Terrebonne Basin, in Lafourche Parish

Problem:

The primary causes of land loss in the project area are oil and gas canals, subsidence, and sediment deprivation, which have resulted in an estimated rate of -0.41% per year based on hyper-temporal analysis conducted by USGS for the extended project boundary for the years 1984 to 2012. Bounded by Bayou Lafourche to the east and Timbalier Bay to the west the project area is also subject to shoreline erosion.

Goals:

The goals of this project are to create and nourish 614 acres of marsh, by pumping sediment from an offshore borrow site in the Gulf of Mexico. This project will create new marsh habitat and increase the longevity of existing habitat. The project will also help protect the people and infrastructure of Port Fourchon.

Proposed Solution:

This project would create 302 acres of saline intertidal marsh and nourish 312 acres of emergent marsh using material dredged from the Gulf of Mexico, southwest of the project area. Earthen containment dikes will be constructed along the project boundary to contain the material. Vegetative plantings are planned at a 50% density, with half planned at TY1 and half planned at TY3 if necessary. Containment dikes will be degraded or gapped by TY3 to allow access for estuarine organisms. Funding will be set aside for the creation of tidal creeks if needed. This project, along with TE-23 and TE-52, will help stabilize the edge of the marshes and protect Port Fourchon from the west. The initial construction elevation is +2.4 feet NADV 88; after settlement, marsh is expected to be +1.4 NAV 88.

Project Benefits:

The project would result in approximately 304 net acres over the 20-year project life.

Project Costs:

The total fully-funded cost is \$29,405,764.

Preparers of Fact Sheet:

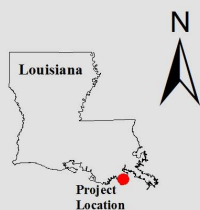
Costal Restoration and Protection Authority

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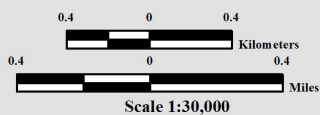


West Fourchon Marsh Creation and Marsh Nourishment (PPL24 Candidate)



Map ID: USGS-NWRC 2014-11-0025
Map Date: June 25, 2014

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



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

Image Source:
2012 DOQQ

PPL24 Bayou Dularge Ridge Restoration and Marsh Creation

Project Location:

Region 3, Terrebonne Basin, Terrebonne Parish, Bayou Dularge at Grand Pass

Problem:

The Bayou Dularge Ridge is a prominent feature in the south central Terrebonne Basin forming a diagonal ridge extending from northeast to southwest that historically restricted the Gulf marine influence into Central Terrebonne marshes. The project location provides a unique opportunity to manage salinity intrusion into a vast area where historically salinity was naturally moderated through intact land features. The Grand Pass, a 900 ft wide artificial cut through the Bayou Dularge Ridge, south of Lake Mechant, is currently being addressed in the CWPPRA TE-66 project. However, the integrity of the ridge is also of concern due to erosion of the adjacent marshes. Loss of this important land bridge separating Lake Mechant from Sister Lake would undermine efforts to restore the fresh and intermediate marshes to the north and eliminate an important landscape feature of critical importance to basin hydrology. The State Master Plan has also identified the ridge as a restoration priority.

Goals:

The project will create/restore a ridge feature and marsh in the landbridge that separates Lake Mechant from Sister Lake to insure the integrity of the ridge and the important function of sustaining optimal salinity gradients and promote healthy marsh recovery in the region.

Proposed Solution:

The project would create approximately 20,182 linear feet (26 acres) of forested coastal ridge south of Bayou Dularge and create/nourish approximately 464 acres of marsh. Lake sediments will be hydraulically dredged and pumped via pipeline to supply material to the marsh creation locations. Containment dikes will be constructed around marsh creation areas to retain material during pumping. Additionally, the ridge feature will be fully planted with appropriate hardwood species.

Project Benefits:

The project would result in approximately 304 net acres of emergent marsh and forested coastal ridge over the 20-year project life.

Project Costs:

The total fully-funded cost is \$42,725,312.

Preparers of Fact Sheet:

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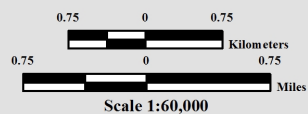
John Jurgensen, NRCS, (318) 473-7694, john.jurgensen@la.usda.gov



Bayou Dularge Ridge Restoration and Marsh Creation (PPL24 Candidate)



- Ridge Restoration *
 - Marsh Creation *
 - Project Boundary
- * denotes proposed features



Map ID: USGS-NWRC 2014-11-0028
Map Date: September 03, 2014



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

PPL24 South Humble Marsh Creation and Nourishment

Project Location:

The project is located in Region 3, Teche - Vermilion Basin, in Vermilion Parish

Problem:

Project area wetlands are being lost at a rate of -0.78 % per year based on USGS analysis (1985-2010). Marshes in this area are subject to losses from shoreline erosion, subsidence/sediment deficit, hurricane impacts, and interior ponding. Shoreline erosion along the Freshwater Bayou Canal has resulted in direct wetland loss as the canal has widened from an authorized width of less than 200 feet to 800 feet. In addition to these direct losses, significant interior marsh loss has resulted from saltwater intrusion and hydrologic changes associated increasing tidal influence, storm surge impacts, and herbivory. The ensuing erosion creates water turbidity within the interior ponds, this coupled with increased pond depth, decreases the coverage of submerged aquatic vegetation. Recent hurricane scour sites are not likely to recover unaided. Erosion of the eastern bank line of Freshwater Bayou has resulted in formation of three breaches, allowing boat wakes and hydrologic action to adversely affect the interior project area marshes. The wakes from passing vessels and tidal action are also causing the export of organic material from the project area.

Goals:

The project goal is to create and/or nourish approximately 516 ac of marsh (301 ac created, 215 ac nourished) of emergent brackish marsh using sediment from the Gulf.

Proposed Solution:

The proposed project would create and/or nourish approximately 516 acres of marsh (301 acres created, 215 acres nourished). Sediment will be hydraulically pumped from the Gulf of Mexico into the shallow water marsh creation area. Containment dikes will be constructed around the marsh creation area to keep material on site during pumping. The saline effluent will be direct toward Freshwater Bayou and will not be discharged eastward into existing marshes. Once pumping has been completed, dikes will be gapped, tidal channels will be constructed and some vegetative plantings will occur if needed within the newly created areas.

Project Benefits:

The project would result in approximately 294 net acres over the 20-year project life.

Project Costs:

The total fully funded cost is \$34,489,655.

Preparer(s) of Fact Sheet:

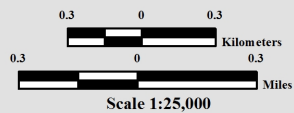
Ronald Paille: U.S. Fish and Wildlife Service; 337-291-3117



South Humble Marsh Creation and Nourishment (PPL24 Candidate)



- Water Control Structure *
 - Tidal Creeks *
 - Marsh Creation *
 - Project Boundary
- * denotes proposed features



Map ID: USGS-NWRC 2014-11-0029
Map Date: July 21, 2014



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

PPL24 Southeast Pecan Island Marsh Creation and Freshwater Enhancement

Project Location:

Region 4, Mermentau Basin, Vermilion Parish, east of Pecan Island and south of Highway 82.

Problem:

The Southeast Pecan Island project area and surrounding marshes have experienced significant land loss from storm impacts, increased tidal exchange, saltwater intrusion, and reduced freshwater retention. Based on USGS data from 1984 to 2010, the wetland loss rate for the proposed project area is 0.84 %/year. Recent land loss, resulting from Hurricanes Rita and Ike, left Louisiana State Highway 3147 and Front Ridge Road exposed to open water wave action and vulnerable to additional storms.

Currently, Highway 82 forms a hydrologic barrier that isolates the Chenier Subbasin from freshwater associated with the Grand and White Lakes Subbasin. Highway 82 traverses cheniers wherever possible, however, low spots between cheniers historically allowed drainage from the Lakes Subbasin south into the Chenier Subbasin.

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 freshwater 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.

Proposed Solution:

The project would create/nourish approximately 401 acres of emergent marsh; create 55,348 linear feet (45 acres) of terraces; and promote growth of submerged aquatic vegetation.

The freshwater enhancement feature would 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 channel clean out and the construction of two outlet structures, 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 388 net acres over the 20-year project life.

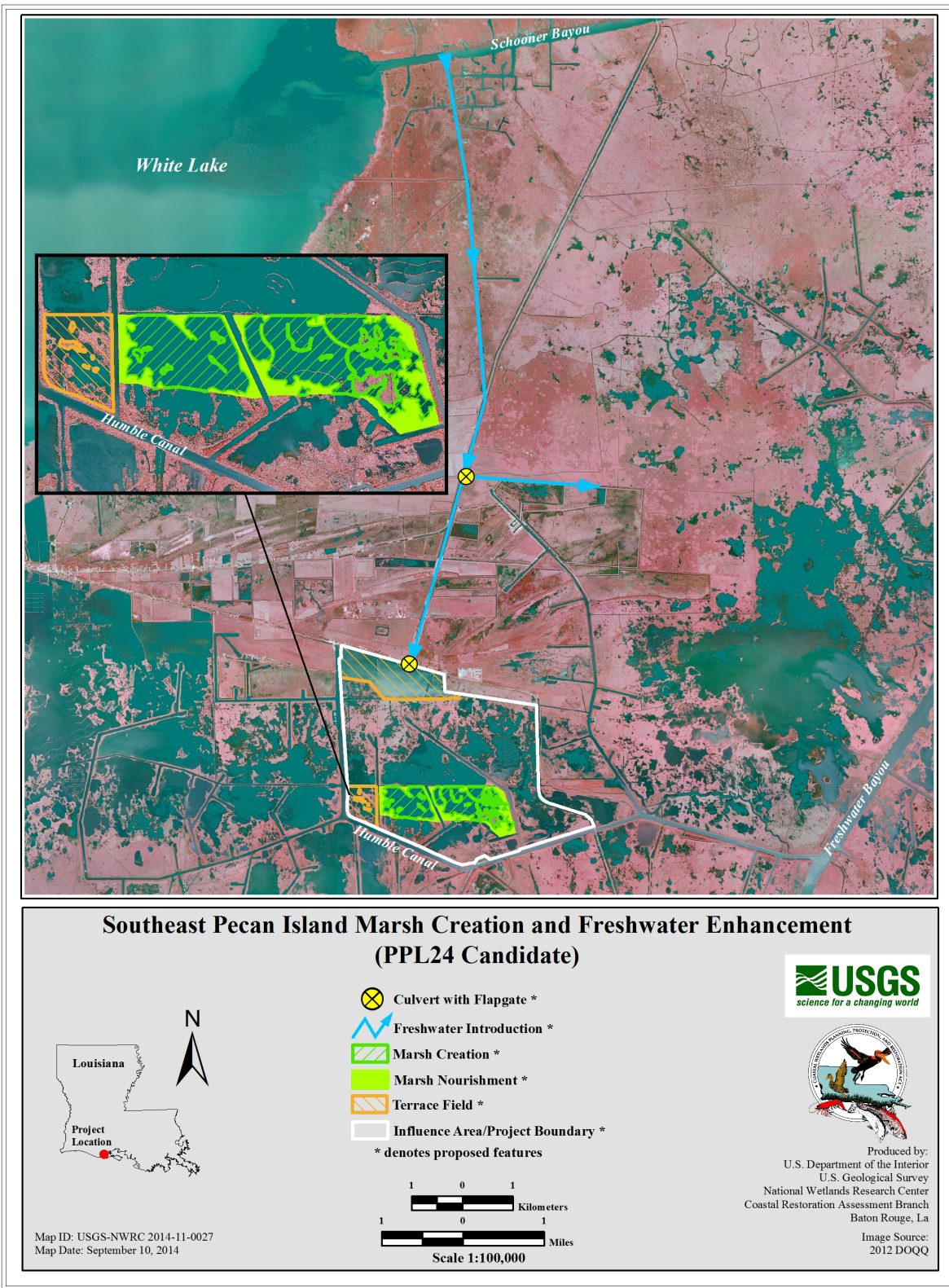
Project Costs:

The total fully-funded cost is \$38,586,563.

Preparers of Fact Sheet:

Troy Mallach, NRCS, (337) 291-3064, troy.mallach@la.usda.gov

Billy Broussard, Vermilion Corps, (337) 893-0268, bbillypb@kaplantel.net



PPL24 No Name Bayou Marsh Creation and Nourishment

Project Location:

Region 4, Calcasieu-Sabine Basin, Cameron Parish

Problem:

The project area is located in the Cameron-Creole Watershed Management Area which protects approximately 64,000 acres in the watershed. It includes a 16.5 mile levee along Calcasieu Lake and five large concrete water control structures to manage the unit and prevent the effects of saltwater intrusion, by managing salinity, tidal exchange, water levels, and estuarine organism movement into and out of the watershed. The Calcasieu Ship Channel, immediately west of the project area, provides an avenue for the rapid movement of high-salinity water into the marshes around Calcasieu Lake. This movement increased salinity in the area, resulting in plant death and marsh loss. The weakened marshes located between the East Fork of the Calcasieu River and Calcasieu Lake has also been decimated by hurricanes. Marshes that once provided a buffer to the southwest rim of Calcasieu Lake are now shallow open water areas.

Goals:

The project goal is to create and/or nourish approximately 533 acres of emergent saline marsh within the Cameron-Creole watershed along the Calcasieu Lake rim using sediment from upland disposal sites of the Calcasieu River.

Proposed Solution:

The proposed project's primary feature is to create and/or nourish approximately 533 acres of saline marsh (502 acres created, 21 acres nourished) south of Calcasieu Lake. In order to achieve this, approximately 3.5 million cubic yards of sediment will be hydraulically pumped from the upland disposal areas of the Calcasieu River immediately adjacent to (across East Fork), and into the shallow water marsh creation area to an elevation of 1.4 ft NAVD 88. Clean out approximately 5,000 LF of the Cameron Creole Watershed Levee borrow channel to facilitate water movement into the newly created area. Containment dikes will be constructed around the marsh creation area to keep material on site during pumping. Once pumping has been completed, the containment dikes will be degraded to the current platform elevation and gaps will be excavated. Additionally, 251 acres of vegetative plantings will occur within the newly created areas. Approximately 10,000 linear feet of tidal creeks and two 2.5 acre ponds will be constructed to help facilitate hydrologic flow of water in and out of project area.

Project Benefits:

The project will result in approximately 497 net acres over the 20-yr project life.

Project Costs:

The total fully funded cost is \$28,253,137.

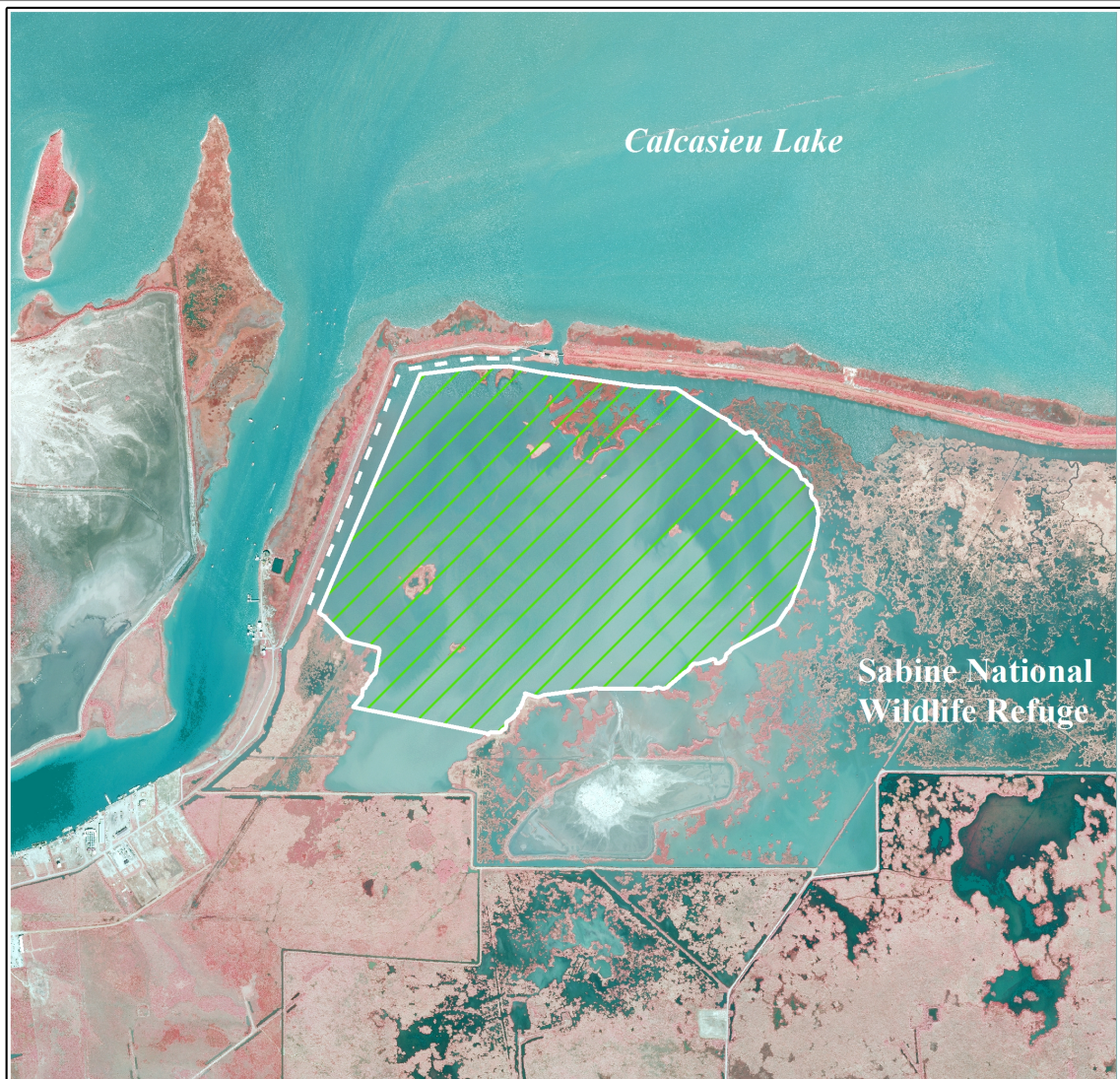
Preparer(s) of Fact Sheet:

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
No Name Bayou Marsh Creation and Nourishment (PPL24 Candidate)



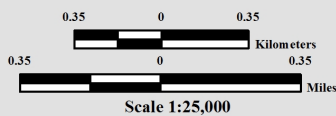
Produced by:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Assessment Branch
Baton Rouge, La

Image Source:
2012 DOQQ



-  Channel Cleanout *
-  Marsh Creation *
-  Project Boundary

* denotes proposed features



Map ID: USGS-NWRC 2014-11-0022
Map Date: June 25, 2014

IV. DESCRIPTION OF CANDIDATE DEMONSTRATION PROJECTS

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

PPL24 Innovative Bedload Sediment Collector Demonstration Project

Potential Demonstration Project Location:

Coastwide

Problem:

Sediments for restoration projects are typically excavated from static borrow sources by disruptive and costly dredge platforms and dredging operations. These sediment borrow sources have limited capacity, with nominal natural replenishment rates following their excavation.

Goals:

The goal of this project is to demonstrate the potential use and effectiveness of the Innovative Bedload Sediment Collector technology for passively collecting sediment at its natural transport rate, as an alternative to conventional dredging.

Proposed Solution:

The Innovative Bedload Sediment Collector demonstration project will consist of (3) 12' high capacity collectors at three separate locations of varying environments, for a 12 month duration, to monitor and evaluate the removal of bedload sediment for beneficial reuse. Each site will include one complete Streamside Systems 12' collector system with supporting equipment. The stainless steel 12' collector will be set in the main channel of a river or bayou and will be located at or just above grade of the channel bottom to collect migrating sediment. After the sediment is collected, it will be hydraulically pumped to adjacent beneficial reuse sites. Each site will be approximately one acre and fully contained.

Project Benefits:

Potential benefits include: 1) passive collection and delivery of sediments for the purpose of beneficial use; 2) capture sediment that would otherwise migrate out of the system; 3) reduce impacts by optimally collecting sediment in a non-disruptive, non-intrusive, and sustainable manner.

Project Costs:

The fully-funded cost is \$2,608,601.

Preparer of Fact Sheet:

Scott Wandell, USACE, 504-862-1878, scott.f.wandell@usace.army.mil
Brian Halm, Streamside Environmental LLC, 419-423-1290,
bhalm@streamsideenvironmental.com

Sediment Collectors

- Sediment Collectors represent a new, innovative technology, using simple physical principles to capture bedload sediments.
- Passive Collectors allow the energy of the stream to move bedload sediment up the Collector's ramp and into a hopper. As the sediment fills the hopper, it is pumped to a beneficial use site.

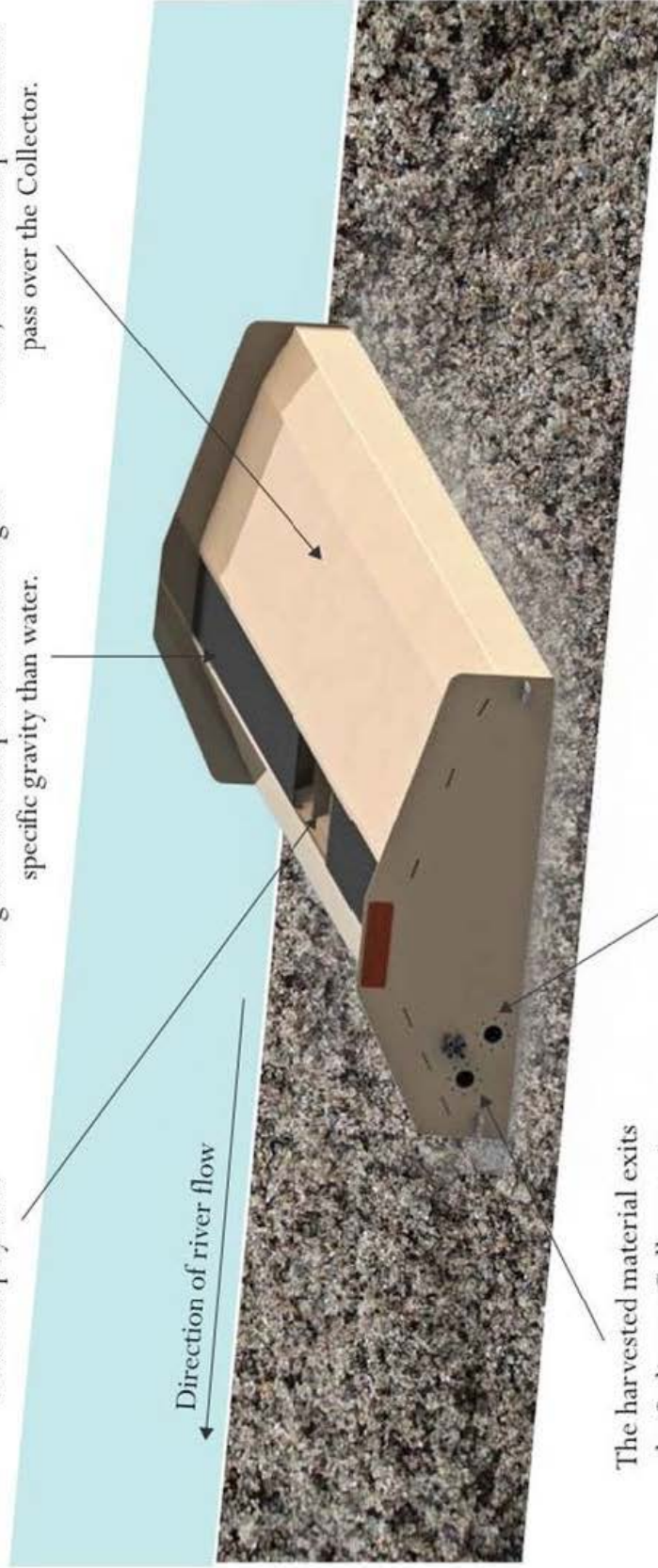


**STREAMS DE
TECHNOLOGY**
simplified thinking.

Once the material has passed through the grate system, it is collected within the hopper. The hopper acts as a collection basin that contains alternating suction and inject ports, which allows for a modified closed-loop system.

The grate system installed above the hopper acts as a screen to selectively remove a specified particle size and allow for larger sized material to continue moving downstream. The Sediment Collector is designed to collect particles with a higher specific gravity than water.

Coarse-grained sediment – fine sands to gravel – migrates as bedload and travels up the ramp of the Sediment Collector. Finer sediments (silts & clays), as well as other organic matter, remain in suspension and pass over the Collector.



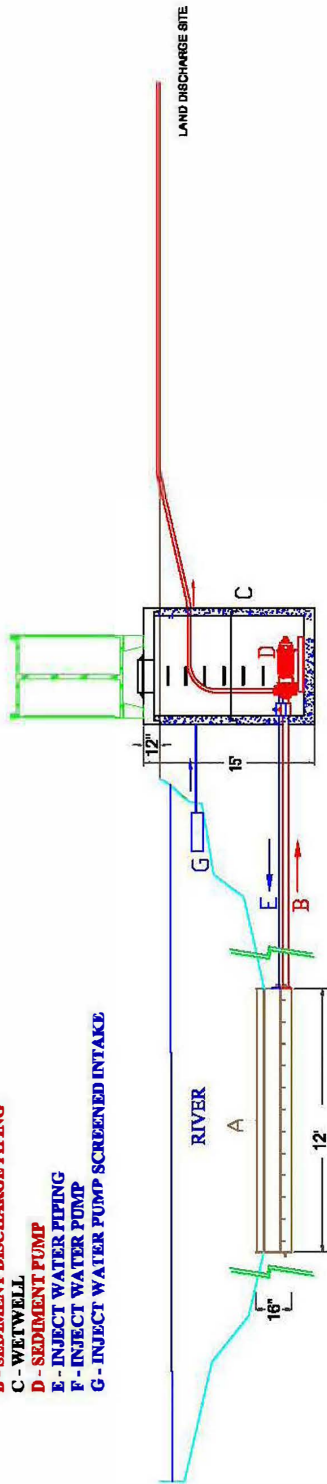
The harvested material exits the Sediment Collector via suction ports and is pumped as a slurry to a placement or dewatering site.

Inject ports allow the water from the dewatering system to be returned to the Collector, this helps to reduce impingement and minimize discharge of water to the river.

| | |
|---|--|
| Large-Scale Sediment Collector | |
| Summary of Sediment Collector Technology | |
| Copyright © 2014 Streamside Technology, LLC | |

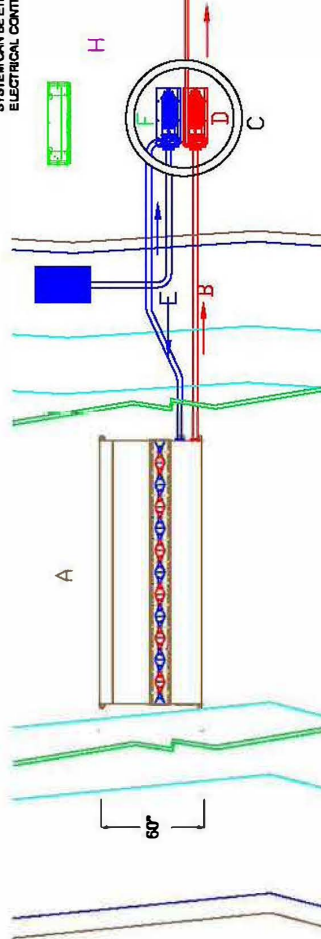
**STREAMSIDE
TECHNOLOGY**
simplified thinking

- A - 12' SEDIMENT COLLECTOR
- B - SEDIMENT DISCHARGE PIPING
- C - WETWELL
- D - SEDIMENT PUMP
- E - INJECT WATER PIPING
- F - INJECT WATER PUMP
- G - INJECT WATER PUMP SCREENED INTAKE



STREAMSIDE SYSTEMS ®
12' COLLECTOR W/LAND APPLICATION OF DISCHARGE
CONCEPTUAL DRAWING (SIDE VIEW)

STREAMSIDE SYSTEMS' PATENTED BEDLOAD SEDIMENT COLLECTOR
 MODEL 60 X 144 X 18 HIGH CAPACITY WITH RETURN WATER INJECT TO REDUCE IMPINGEMENT
 (4) EXTERNAL ANCHORING POINTS, (6) 2 FOOT PANELS OF 3/8" OPENING STAINLESS STEEL GRATES
 4" DISCHARGE PIPING AND 7" INJECT PIPING,
 ALL STAINLESS STEEL WELDED CONSTRUCTION, 120" STEEL INTERNAL SUPPORTS, 1/4" END PLATES, 120" RAMP DECIS
 ON, 120" STEEL INTERNAL SUPPORTS, 120" STEEL INTERNAL SUPPORTS, 120" STEEL INTERNAL SUPPORTS,
 (1) WETWELL SIZED FOR THE PUMP, TO A DEPTH NO GREATER THAN THE COLLECTOR, (SUPPLIED BY CONTRACTOR)
 20 HP DREDGE PUMP IN WETWELL, 420 GPM WITH 80 FEET OF HEAD
 SYSTEM CAN BE EITHER 230/390 OR 460/390;
 ELECTRICAL CONTROL PANEL WITH VARIABLE FREQUENCY DRIVE FOR ALL MOTORS



STREAMSIDE SYSTEMS ®
12' COLLECTOR W/LAND APPLICATION OF DISCHARGE
CONCEPTUAL DRAWING (PLAN VIEW)

| | | | | | |
|--|--|------|-------------|------------|-------------|
| STREAMSIDE TECHNOLOGY LLC | | DATE | DESIGNED BY | CHECKED BY | APPROVED BY |
| THIS DRAWING IS A PART OF THE PROJECT FOR LAND DISCHARGE | | DATE | DESIGNED BY | CHECKED BY | APPROVED BY |
| PROJECT NO. 201-A | | DATE | DESIGNED BY | CHECKED BY | APPROVED BY |
| PROJECT NO. 201-A | | DATE | DESIGNED BY | CHECKED BY | APPROVED BY |

V. Project Selection

On April 15th, 2014 the CWPPRA Task Force made its selection for the 24th PPL. The CWPPRA Task Force selection for the 24th PPL is shown in Table 6.

Table 6: The 24th 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) |
|----------------|---|---------------|-------------------|-------------------------|---------------------------|----------------------------|-------------------------------------|
| CS-78 | No Name Bayou Marsh Creation and Nourishment | MC | NMFS | \$28,253,137 | \$2,724,524 | \$25,528,613 | 231 |
| PO-169 | New Orleans Landbridge Shoreline Stabilization and Marsh Creation | MC | USFWS | \$17,549,317 | \$1,942,143 | \$15,607,174 | 94 |
| PO-168 | Shell Beach South Marsh Creation | MC | USACE/ EPA | \$28,101,520 | \$3,176,569 | \$24,924,951 | 184 |
| TE-134 | West Fourchon Marsh Creation and Nourishment | MC | NMFS | \$29,405,764 | \$3,201,929 | \$26,203,835 | 195 |
| TOTALS | | | | \$103,309,738 | \$11,045,165 | \$92,264,573 | 704 |

Project Physical Type:
MC=Marsh Creation

Sponsoring Agencies:
EPA=Environmental Protection Agency
NMFS=National Marine Fisheries Service
USACE=US Army Corps of Engineers
USFWS=US Fish & 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.

PPL24 No Name Bayou Marsh Creation and Nourishment

Project Location:

Region 4, Calcasieu-Sabine Basin, Cameron Parish

Problem:

The project area is located in the Cameron-Creole Watershed Management Area which protects approximately 64,000 acres in the watershed. It includes a 16.5 mile levee along Calcasieu Lake and five large concrete water control structures to manage the unit and prevent the effects of saltwater intrusion, by managing salinity, tidal exchange, water levels, and estuarine organism movement into and out of the watershed. The Calcasieu Ship Channel, immediately west of the project area, provides an avenue for the rapid movement of high-salinity water into the marshes around Calcasieu Lake. This movement increased salinity in the area, resulting in plant death and marsh loss. The weakened marshes located between the East Fork of the Calcasieu River and Calcasieu Lake has also been decimated by hurricanes. Marshes that once provided a buffer to the southwest rim of Calcasieu Lake are now shallow open water areas.

Goals:

The project goal is to create and/or nourish approximately 533 acres of emergent saline marsh within the Cameron-Creole watershed along the Calcasieu Lake rim using sediment from upland disposal sites of the Calcasieu River.

Proposed Solution:

The proposed project's primary feature is to create and/or nourish approximately 533 acres of saline marsh (502 acres created, 21 acres nourished) south of Calcasieu Lake. In order to achieve this, approximately 3.5 million cubic yards of sediment will be hydraulically pumped from the upland disposal areas of the Calcasieu River immediately adjacent to (across East Fork), and into the shallow water marsh creation area to an elevation of 1.4 ft NAVD 88. Clean out approximately 5,000 LF of the Cameron Creole Watershed Levee borrow channel to facilitate water movement into the newly created area. Containment dikes will be constructed around the marsh creation area to keep material on site during pumping. Once pumping has been completed, the containment dikes will be degraded to the current platform elevation and gaps will be excavated. Additionally, 251 acres of vegetative plantings will occur within the newly created areas. Approximately 10,000 linear feet of tidal creeks and two 2.5 acre ponds will be constructed to help facilitate hydrologic flow of water in and out of project area.

Project Benefits:

The project will result in approximately 497 net acres over the 20-yr project life.

Project Costs:

The total fully funded cost is \$28,253,137.

Preparer(s) of Fact Sheet:

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John.Foret@noaa.gov

Kimberly Clements, NOAA's National Marine Fisheries Service, (225) 389-0508, extension 204,

Kimberly.Clements@noaa.gov






No Name Bayou Marsh Creation and Nourishment (PPL24 Candidate)

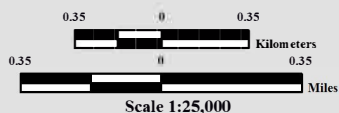


Produced by:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Assessment Branch
Baton Rouge, La

Image Source:
2012 DOQQ



-  Channel Cleanout *
 -  Marsh Creation *
 -  Project Boundary
- * denotes proposed features



Map ID: USGSNWRC 2014-11-0022
Map Date: June 25, 2014

PPL24 New Orleans Landbridge Shoreline Stabilization and Marsh Creation

Project Location:

The project is located in 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 Hurricane Katrina. Within the project area, Hurricane Katrina 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, the Fort Pike State Historical Site, and infrastructure including U.S. Highway 90. USGS land change analysis determined a loss rate of -0.35% per year for the 1984 -2011 period 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 271 acres of brackish marsh and to enhance 15,340 linear feet of shoreline to maintain the structural integrity of the Orleans Landbridge.

Proposed Solution:

Approximately 1.6 million cubic yards of material will be dredged from two borrow areas in Lakes St. Catherine and Pontchartrain to create 169 acres and nourish 102 acres of brackish marsh. Containment dikes will be constructed around four marsh creation areas to retain sediment during pumping. Approximately 15,340 linear feet of lake shoreline will be enhanced with an earthen berm, with a top width of 20 feet, to add additional protection from wind-induced wave fetch. This berm will also function as containment for dredged material. No later than three years post construction, containment dikes that are not functioning as shoreline enhancement will be degraded and/or gapped. Vegetative plantings are proposed including five rows along the crown and two rows along the front slope of the shoreline protection berm, as well as within the marsh platform area.

Project Benefits:

The project would result in approximately 167 net acres over the 20-year project life.

Project Costs:

The total fully-funded cost is \$17,549,317.

Preparers of Fact Sheet:

Angela Trahan, Fish and Wildlife Service, 337-291-3137, angela_trahan@fws.gov






New Orleans Landbridge Shoreline Stabilization and Marsh Creation (PPL24 Candidate)



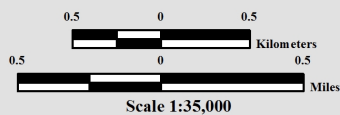
Produced by:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Assessment Branch
Baton Rouge, La

Image Source:
2012 DOQQ



-  Earthen Berm*
-  Marsh Creation *
-  Project Boundary

* denotes proposed features



Map ID: USGS-NWRC 2014-11-0021
Map Date: August 20, 2014

PPL24 Shell Beach South Marsh Creation

Project Location:

Region 1, Pontchartrain Basin, South Lake Borgne Mapping Unit, St. Bernard Parish, north bank of the Mississippi River Gulf Outlet (MRGO) in the vicinity of Shell Beach.

Problem:

The marsh boundary separating Lake Borgne and the MRGO has undergone both interior and shoreline wetland losses due to subsidence, impacts related to construction and use of the MRGO (i.e., deep draft vessel traffic), and wind-driven waves. Although much of the project area is protected from edge erosion by shoreline protection measures, interior wetland loss due to subsidence continues to cause marsh fragmentation and pond enlargement. Wetland loss rates in the project area are estimated to be -0.60 percent a year based on USGS analysis.

Goals:

The project would create and/or nourish 634 acres (ac) of emergent brackish marsh to stabilize the landform separating Lake Borgne from the MRGO. Using fill material from Lake Borgne, 346 ac of new marsh would be created and 288 ac nourished.

Proposed Solution:

The proposed project will create and nourish 634 acres of marsh using dredged sediment from Lake Borgne. Existing high shorelines along Lake Borgne, remnants of previous containment dikes and marsh edge, would be used for containment to the extent practical. Constructed containment dikes would be breached/gapped as needed to provide tidal exchange after fill materials settle and consolidate. The project would create 346 acres of marsh and nourish at least 288 acres of existing fragmented marsh. A target fill elevation of +1.2 feet is envisioned to enhance longevity of this land form. Additionally, 187 acres of vegetative planting will occur within the newly created areas. Due to the presence of existing banklines, dredged slurry overflow could potentially be discharged immediately adjacent to the project polygons, resulting in nourishment of additional areas.

Project Benefits:

The project would result in approximately 344 net acres over the 20-year project life.

Construction Costs

The total fully-funded cost is \$28,101,520.

Preparer(s) of Fact Sheet:

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Aaron Hoff, USEPA, 214.665.7319, hoff.aaron@epa.gov

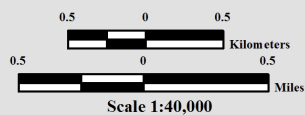
Barbara Aldridge, 214.665.2712, aldridge.barbara@epa.gov



Shell Beach South Marsh Creation (PPL24 Candidate)



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



Map ID: USGS-NWRC 2014-11-0023
Map Date: July 11, 2014



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

PPL24 West Fourchon Marsh Creation and Marsh Nourishment

Project Location:

The project is located in Region 2, Terrebonne Basin, in Lafourche Parish

Problem:

The primary causes of land loss in the project area are oil and gas canals, subsidence, and sediment deprivation, which have resulted in an estimated rate of -0.41% per year based on hyper-temporal analysis conducted by USGS for the extended project boundary for the years 1984 to 2012. Bounded by Bayou Lafourche to the east and Timbalier Bay to the west the project area is also subject to shoreline erosion.

Goals:

The goals of this project are to create and nourish 614 acres of marsh, by pumping sediment from an offshore borrow site in the Gulf of Mexico. This project will create new marsh habitat and increase the longevity of existing habitat. The project will also help protect the people and infrastructure of Port Fourchon.

Proposed Solution:

This project would create 302 acres of saline intertidal marsh and nourish 312 acres of emergent marsh using material dredged from the Gulf of Mexico, southwest of the project area. Earthen containment dikes will be constructed along the project boundary to contain the material. Vegetative plantings are planned at a 50% density, with half planned at TY1 and half planned at TY3 if necessary. Containment dikes will be degraded or gapped by TY3 to allow access for estuarine organisms. Funding will be set aside for the creation of tidal creeks if needed. This project, along with TE-23 and TE-52, will help stabilize the edge of the marshes and protect Port Fourchon from the west. The initial construction elevation is +2.4 feet NADV 88; after settlement, marsh is expected to be +1.4 NAV 88.

Project Benefits:

The project would result in approximately 304 net acres over the 20-year project life.

Project Costs:

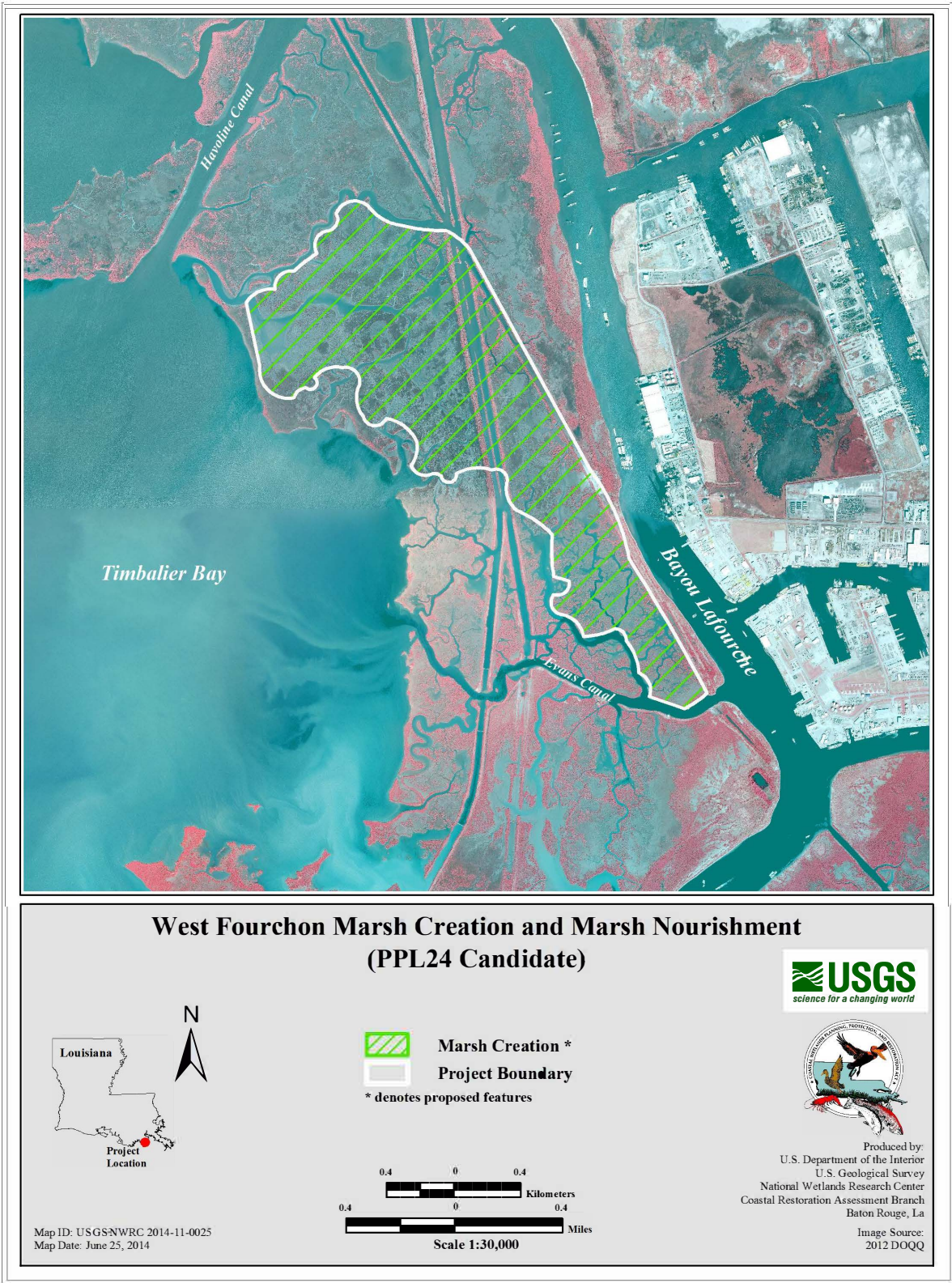
The total fully-funded cost is \$29,405,764.

Preparers of Fact Sheet:

Coastal Protection and Restoration Authority

Logan Boudreaux, logan.boudreaux@la.gov; (225) 342-2639

Stuart Brown, stuart.brown@la.gov; (225) 342-4596

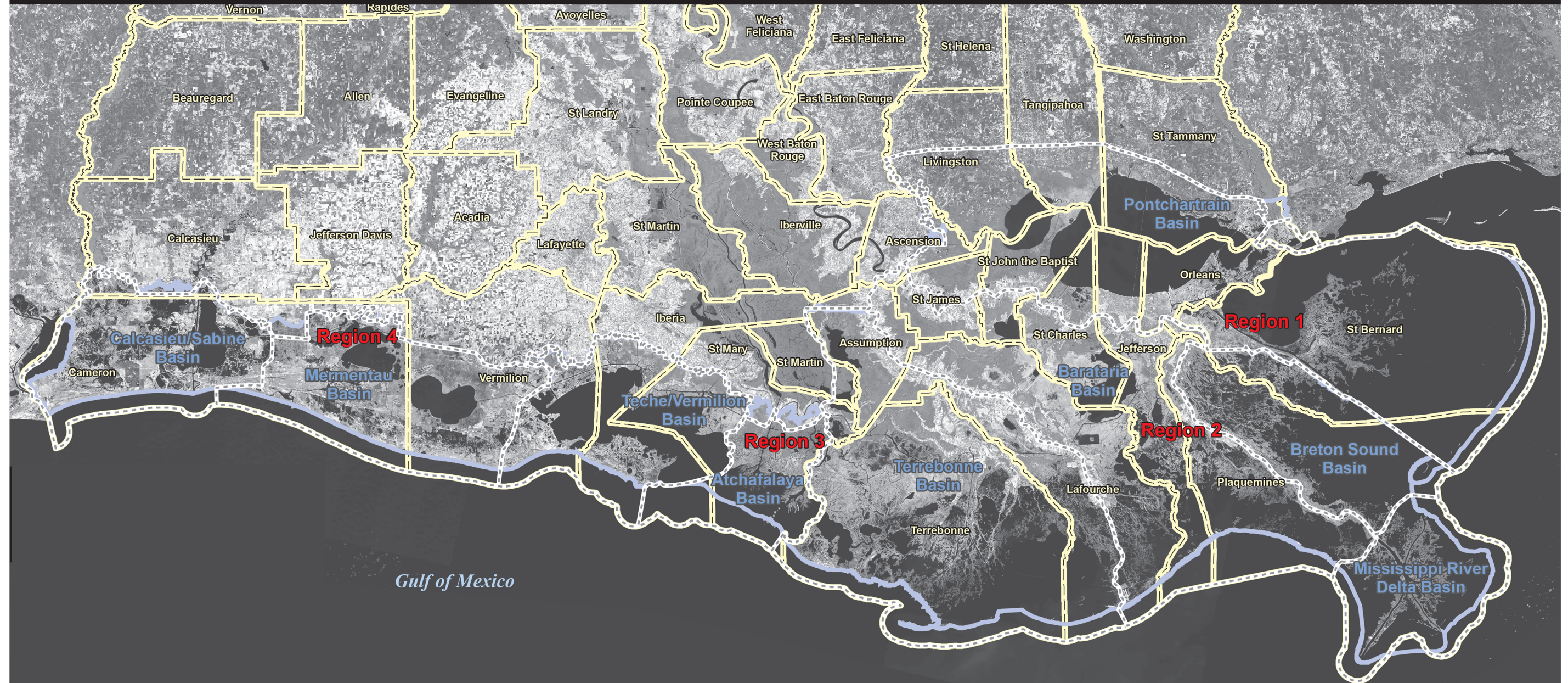


VII. SUMMARY AND CONCLUSIONS

The 24th PPL consists of 4 projects, for a Phase I cost of \$11,045,165 and a Phase II cost of \$92,264,573, which will be funded as these projects mature. The total net wetland benefits of the implementing the four PPL 24 projects is estimate to be 1,312 acres or 704 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 24th PPL.

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

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



1:1,275,000

10 0 10 20

Kilometers

10 0 10 20

Miles





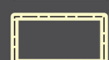
-  Hydrologic Basin
-  Region Boundary
-  Parish Boundary

Image Source:
2014 Landsat 8 OLI 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 2015-11-0019
Map Date: June 05, 2015

PLATE 2. SUMMARY OF PROJECTS 1-24 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 laCache 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

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| BA-29 | <u>LA Highway 1 Marsh Creation</u> |
| TE-40 | Timbalier Island Dune and Marsh Restoration |
| TE-37 | New Cut Dune and Marsh Restoration |

U.S. Department of the Army

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| PO-26 | <u>Opportunistic Use of the Bonnet Carre Spillway</u> |
| TV-11b | <i>Freshwater Bayou Bank Stabilization - Belle Isle Canal to Lock</i> |
| MR-11 | <u>Periodic Introduction of Sediment and Nutrients at Selected Diversion Sites Demonstration</u> |
| TV-19 | Weeks Bay MC and SP/Commercial Canal/Freshwater Redirection |

U.S. Department of Commerce

| | |
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| PO-27 | Chandeleur Islands Marsh Restoration |
| AT-04 | <u>Castille Pass Channel Sediment Delivery</u> |
| TV-18 | Four Mile Canal Terracing and Sediment Trapping |
| PO-28 | <u>LaBranche Wetlands Terracing, Planting, and Shoreline Protection</u> |
| BA-30 | <i>East Grand Terre Islands Restoration</i> |

U.S. Department of Agriculture

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| TE-39 | South Lake Decade Freshwater Introduction |
| CS-29 | Black Bayou Bypass Culverts Hydrologic Restoration |
| CS-30 | Perry Ridge West Bank Stabilization |
| ME-17 | <u>Little Pecan Bayou Hydrologic Restoration</u> |
| BA-27c | Barataria Basin Landbridge Shoreline Protection, Phase 3 |

U.S. Department of the Interior

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| ME-16 | Freshwater Introduction South of Hwy. 82 |
| TE-41 | Mandalay Bank Protection Demonstration |

10th Priority Project List

U.S. Environmental Protection Agency

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| PO-30 | Lake Borgne Shoreline Protection |
| BA-34 | Small Freshwater Diversion to the Northwestern Barataria Basin |

U.S. Department of the Army

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| MR-13 | <u>Benneys Bay Diversion</u> |
| BA-33 | <u>Delta Building Diversion at Myrtle Grove</u> |
| BS-10 | <u>Delta Building Diversion North of Fort. St. Phillip</u> |

U.S. Department of Commerce

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| ME-18 | <i>Rockefeller Refuge Gulf Shoreline Stabilization</i> |
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U.S. Department of Agriculture

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| TE-43 | <i>GIWW Bank Restoration of Critical Areas in Terrebonne</i> |
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U.S. Department of the Interior

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| 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 and Terracing

U.S. Department of Commerce

CS-66 Bayou Cameron Meadows Marsh Creation and Terracing

U.S. Department of Agriculture

TE-112 North Catfish Lake Marsh Creation

U.S. Department of 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

24th Priority Project List

U.S. Department of Commerce

CS-78 No Name Bayou Marsh Creation and Nourishment
TE-134 West Fourchon Marsh Creation and Marsh Nourishment

U.S. Environmental Protection Agency and Department of Defense

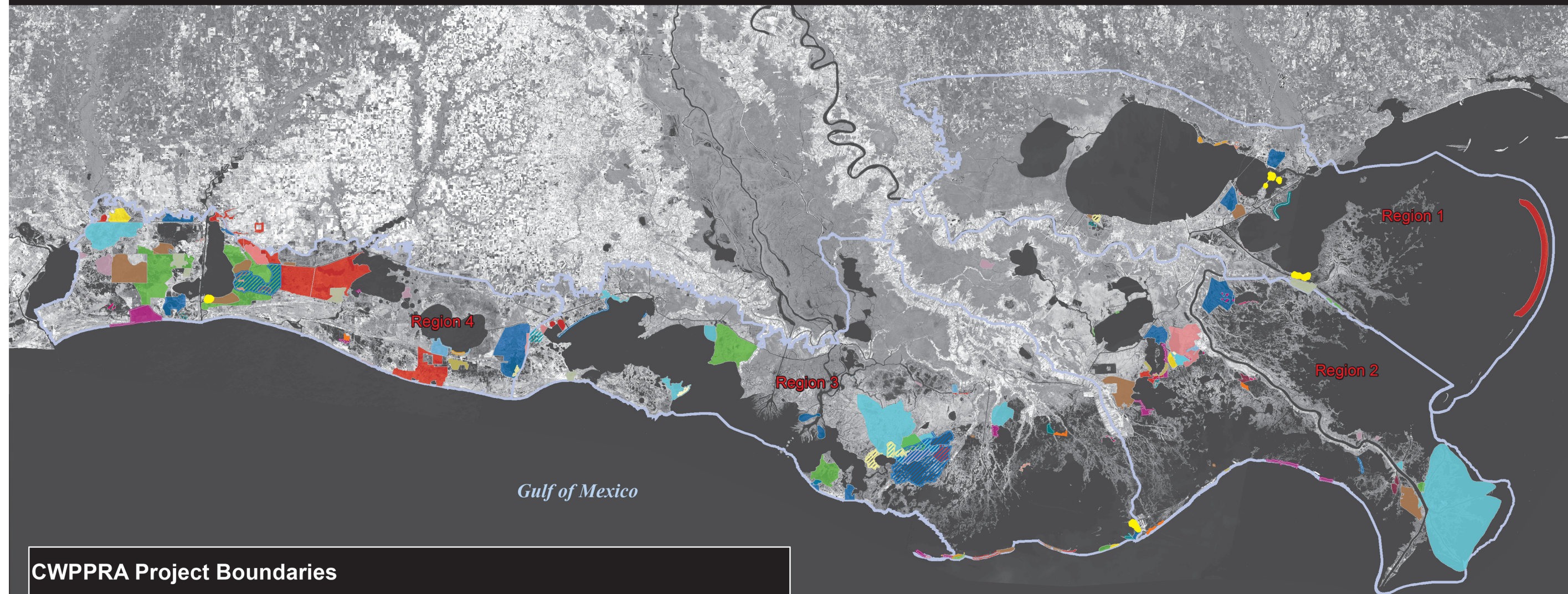
PO-168 Shell Beach South Marsh Creation

U.S. Department of the Interior

PO-169 New Orleans Landbridge Shoreline Stabilization and Marsh Creation



Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-24



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 24 |
|  | PPL 5 |  | PPL 10 |  | PPL 15 |  | PPL 20 | | |



Region Boundary

1:1,275,000

10 0 10 20

Kilometers

10 0 10 20

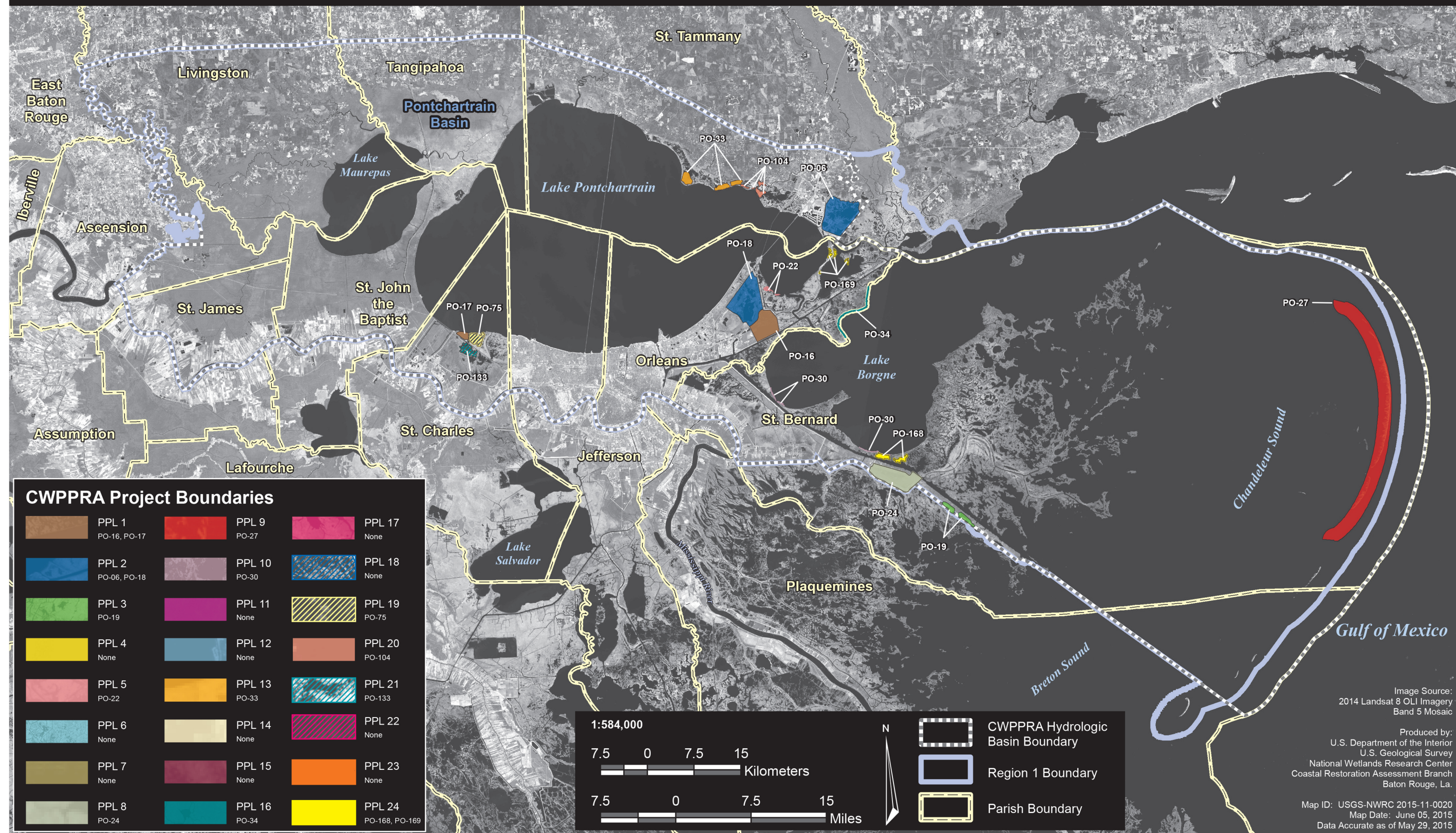
Miles

Image Source:
2014 Landsat 8 OLI Imagery
Band 5 Mosaic

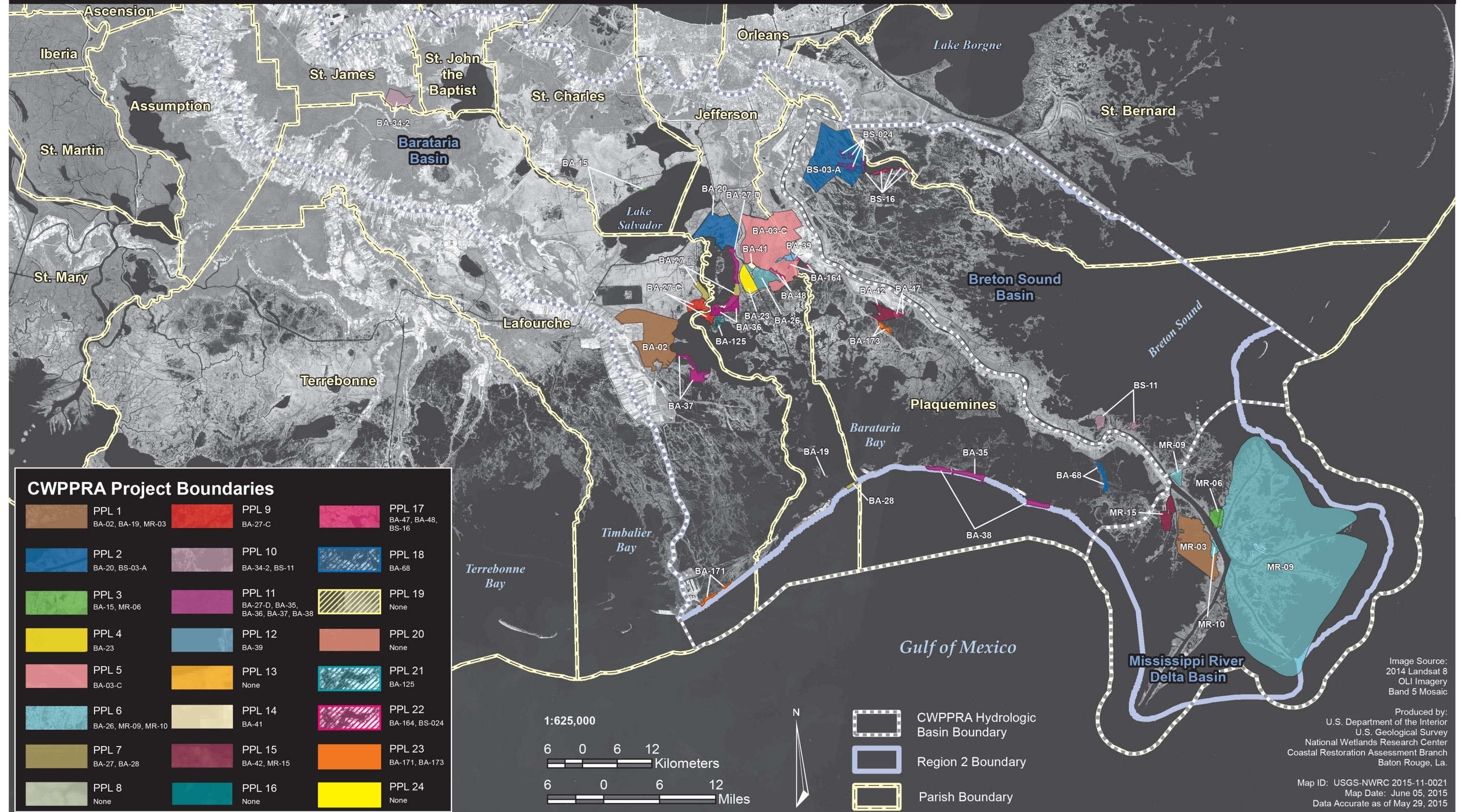
Produced by:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Assessment Branch
Baton Rouge, La.

Map ID: USGS-NWRC 2015-11-0012
Map Date: June 05, 2015
Data accurate as of May 29, 2015

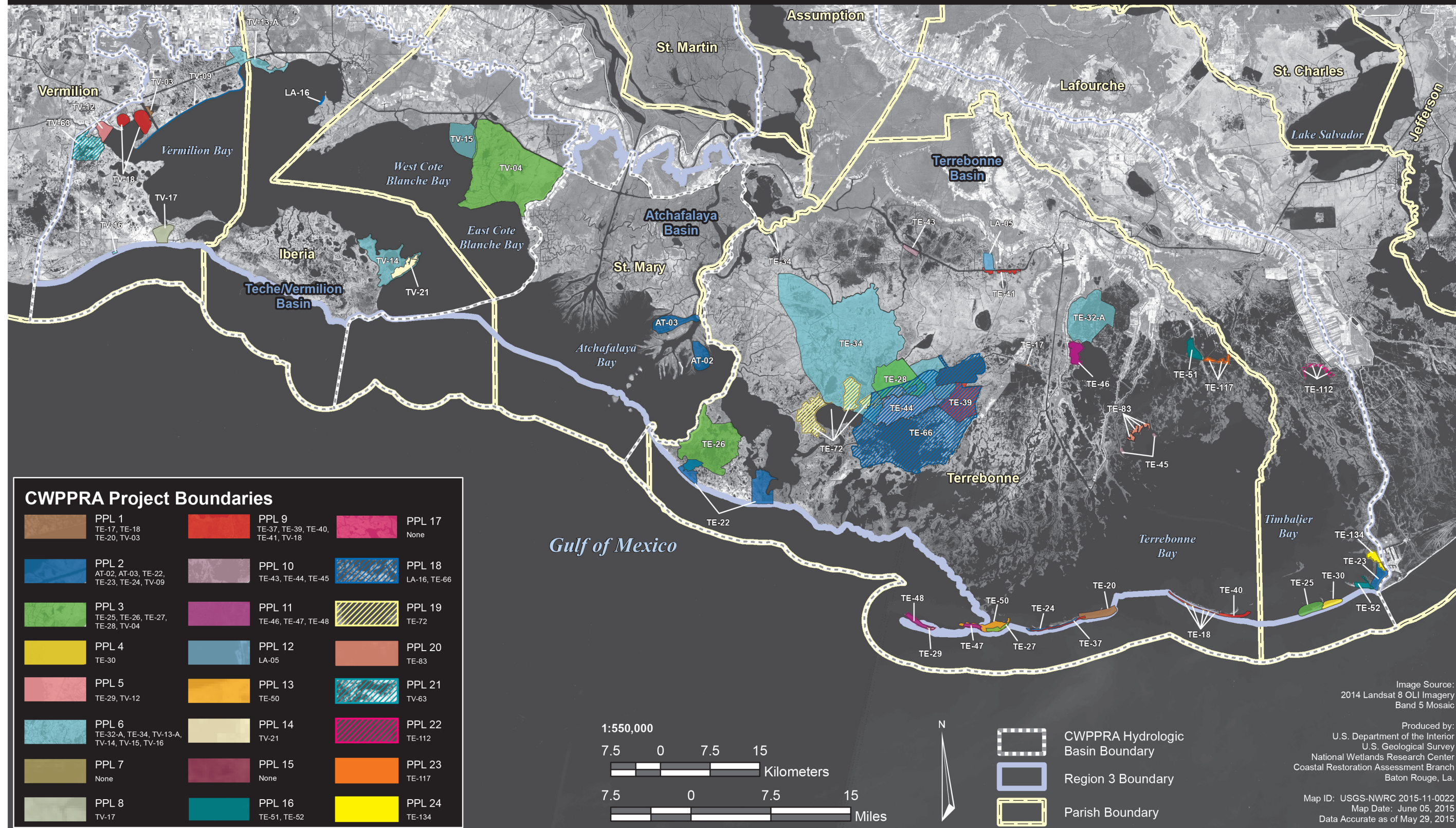
Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-24 Coast 2050 Region 1



Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-24 Coast 2050 Region 2



Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-24 Coast 2050 Region 3



Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Priority Project Lists 1-24 Coast 2050 Region 4

