# Coastal Restoration Annual Project Reviews

## December 2003

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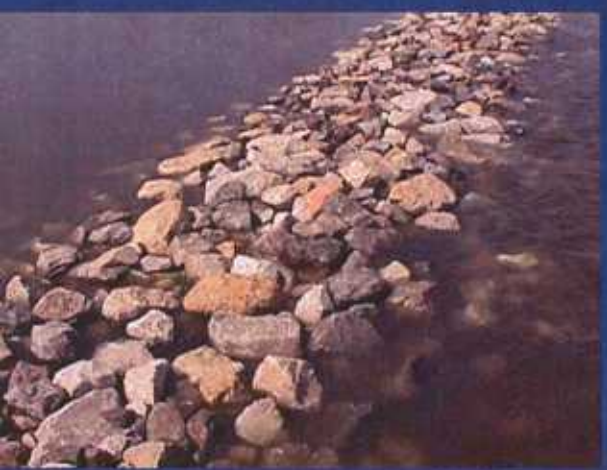

*Working to Save Our Coastal Wetlands*

**STATE OF LOUISIANA**
M. J. "Mike" Foster, Jr., Governor

**DEPARTMENT OF NATURAL RESOURCES**
Jack C. Caldwell, Secretary

**OFFICE OF COASTAL RESTORATION AND MANAGEMENT**
James "Randy" Hanchey, Assistant Secretary

**COASTAL RESTORATION DIVISION**
Bill Good, Ph.D., Administrator

**RESTORATION TECHNOLOGY SECTION**
William K. "Kirk" Rhinehart, Manager

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The purpose of this document is to provide interested parties with easily accessible information about projects constructed to date and the current efforts to address Louisiana's coastal land loss problem. The information contained in this report is current through November 2003. For more detailed information on these projects, or other relevant efforts, please refer to:

*Coast 2050: Toward a Sustainable Coastal Louisiana*
*Louisiana Coastal Wetlands Conservation Plan*
*1999 Status Report for Coastal Wetlands Conservation and Restoration Program*
*The 2003 Evaluation Report to the U.S. Congress on the Effectiveness Coastal Wetlands Planning, Protection, and Restoration Act Projects*

**For more information on projects:**
visit our website at www.saveLAwetlands.org, call 1-888-459-6107, or write to the Department of Natural Resources, Coastal Restoration Division, PO Box 44027, Capitol Station, Baton Rouge, Louisiana 70804-4027.

**TABLE OF CONTENTS**

## LIST OF FIGURES



## LIST OF TABLES

**ABBREVIATIONS**

| | |
|---|---|
| CED | Coastal Engineering Division |
| CORS | Continuously Operating Reference Station |
| CRD | Coastal Restoration Division |
| CWPPRA | Coastal Wetlands Planning, Protection and Restoration Act |
| DRS | Document Referencing System |
| EPA | Environmental Protection Agency |
| FEMA | Federal Emergency Management Administration |
| GIS | Geographic Information System |
| GIWW | Gulf Intracoastal Waterway |
| GPS | Global Positioning System |
| HILCP | Hydrologic Investigation of the Louisiana Chenier Plain |
| LCA | Louisiana Coastal Area |
| LDNR | Louisiana Department of Natural Resources |
| LSU | Louisiana State University |
| MRGO | Mississippi River Gulf Outlet |
| NMFS | National Marine Fisheries Service |
| NRCS | Natural Resources Conservation Service |
| NWRC | National Wetlands Research Center |
| PCWRP | Parish Coastal Wetlands Restoration Program |
| PPL | Priority Project List |
| SONRIS | Strategic Online Natural Resources Information System |
| SWCC | Soil and Water Conservation Committee |
| USACE | United States Army Corps of Engineers |
| USFWS | United States Fish and Wildlife Service |
| WRDA | Water Resources Development Act |

# AN INTRODUCTION TO COASTAL RESTORATION IN LOUISIANA

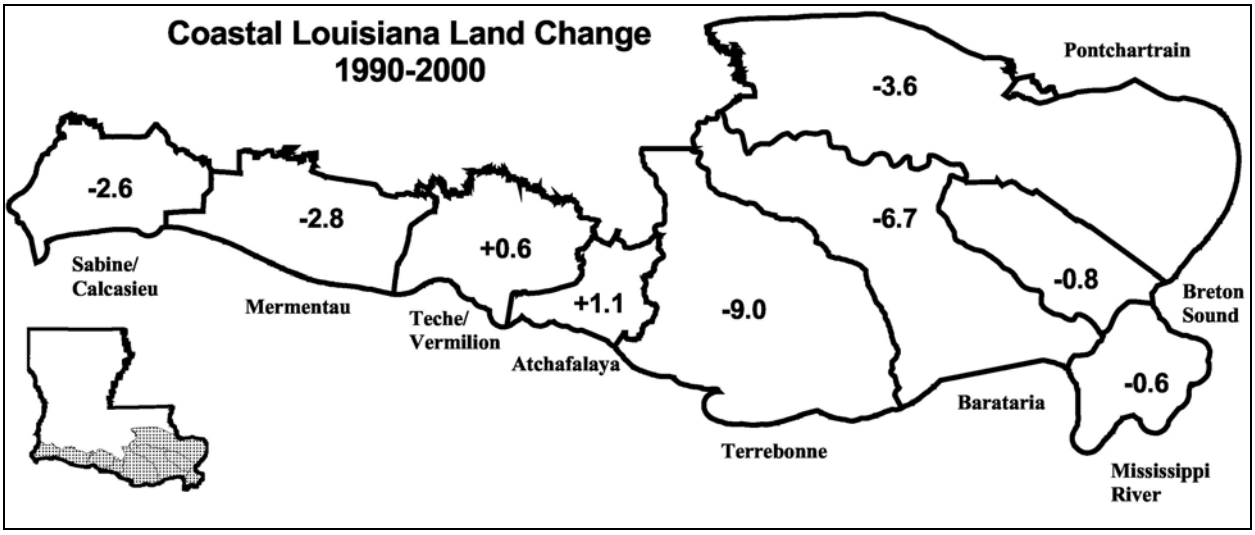



**Figure 1. Coastal Louisiana land change (square miles/year) by hydrologic basin from 1990-2000 (Barras et al. 2003[1]).**

## OVERVIEW

Since the 1930's Louisiana has lost over 1,900 square miles of land. Between 1990 and 2000 wetland loss was approximately 24 square miles per year. At this rate, an area the size of a football field is lost every 38 minutes. Currently Louisiana has 30% of the total coastal marsh and accounts for 90% of the coastal marsh loss in the lower 48 states (Figure1).

The causes of wetland loss are complex and vary across the state. They can be attributed to both natural processes (e.g., subsidence and storm events) and human activities (e.g., levee and canal construction). Wetlands, that are converting to open water, not only provide recreation such as sport fishing and hunting, photography, bird watching, and nature studies, but also ecological benefits such as hurricane protection, water quality improvement, flood peak reduction, and resource production. If this trend of wetland loss in Louisiana continues, it puts vital infrastructure valued at $90-100 billion at risk.

The state of Louisiana has initiated a series of programs to offset the catastrophic loss of coastal wetlands. The Louisiana State and Local Coastal Resources Management Act was passed in 1978 to regulate the developmental activities that affect wetland loss. The resulting Louisiana Coastal Resources Program became a federally approved coastal zone management program in 1980. Responding to the crisis at hand, the Louisiana Legislature passed Act 6 of the second extraordinary session of 1989 (R.S. 49:213-214), and a subsequent constitutional amendment which created the Coastal Restoration Division (CRD) within the Louisiana Department of Natural Resources (LDNR), as well as the Wetlands Conservation and Restoration Authority (Wetlands Authority). Act 6 also

[1] Barras, J. A., S. Beville, D. Britsch, S. Hartley, S. Hawes, J. Johnston, P. Kemp, Q. Kinler, A. Martucci, J. Porthouse, D. Reed, K. Roy, S. Sapkota, and J. Suhayda. 2003. Historical and projected coastal Louisiana land changes: 1978-2050: USGS Open File Report 03-xx (in press).

established the Wetlands Trust Fund, which provides revenues derived from oil and gas activities to wetland restoration efforts in Louisiana.

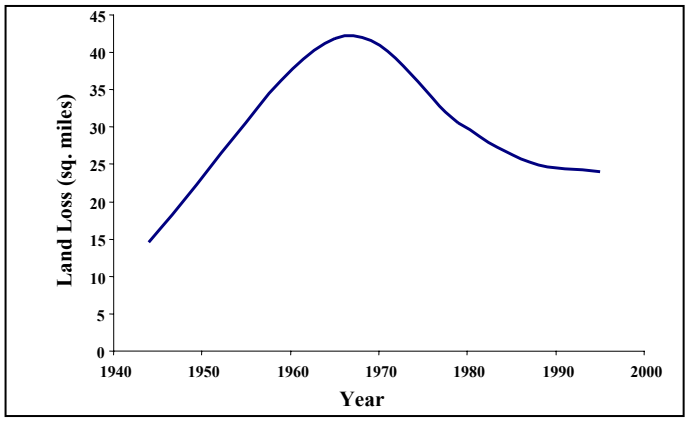



**Figure 2: Land loss rate in Louisiana coastal plain (Dunbar et al. 1992[2] and Barras et al. 2003[3]).**

In August 2003 the Coastal Restoration Division split into the Coastal Restoration Division and the Coastal Engineering Division (CED). The CRD is comprised of the Restoration Technology Section, the Land Section, the Ecosystem Planning and Management Section, and the Biological Monitoring Section. The CED is comprised of the Project Management Section, the Engineering and Design Section, and the Field Engineering Section.

## BREAUX ACT

In 1990, the United States Congress recognized the national significance of wetland loss in Louisiana and passed the Coastal Wetlands Planning, Protection, and Restoration Act (hereinafter, the "Breaux Act"; Public Law 101-646, Title III) to contribute federal monies to state restoration activities. Since passage, the Breaux Act has dedicated approximately $40 million annually to wetland restoration projects in Louisiana. The Breaux Act also created a partnership between Louisiana and five federal agencies: the United States Departments of the Army, Agriculture, Commerce, and the Interior; and the United States Environmental Protection Agency. Since 1991, the state of Louisiana and its cooperating federal partners have been formally selecting restoration projects on an annual basis for implementation. The CRD's Restoration Technology Section and Biological Monitoring Section cooperate with federal, state, and local agencies to evaluate all restoration projects prior to, and following, project construction. Project monitoring provides an unbiased, scientific approach to assessing the effectiveness of each project. The types of monitoring activities vary, depending on the type of project and its specific goals and strategies. Breaux Act projects are typically monitored over the 20-year project life.

## OTHER RESTORATION PROGRAMS

Several other wetland restoration programs have been implemented, each utilizing a specific strategy to combat coastal wetland loss, including: the Parish Coastal Wetlands Restoration Program (PCWRP), the LDNR/Natural Resources Conservation Service (NRCS)/Soil and Water Conservation Committee (SWCC) Vegetation Planting Program, and the beneficial use of dredged material program governed by Sections 204 and 1135 of the Water Resources Development Act (WRDA).

The PCWRP, also known as the "Christmas Tree Program," is designed to encourage public involvement and participation in coastal restoration. Wooden enclosures are filled with recycled Christmas trees that have been donated by the public. These structures are built in

[2] Dunbar, J.B., L.D. Britch and E.B. Kemp, III. 1992. Land loss rates: report 3, Louisiana coastal plane. Technical Report GL-90-2, U.S. Army Corps of Engineers District, New Orleans, La. 28 pp.

[3] Barras, J. A., S. Beville, D. Britsch, S. Hartley, S. Hawes, J. Johnston, P. Kemp, Q. Kinler, A. Martucci, J. Porthouse, D. Reed, K. Roy, S. Sapkota, and J. Suhayda. 2003. Historical and projected coastal Louisiana land changes: 1978-2050: USGS Open File Report 03-xx (in press).

close proximity to the shoreline and absorb wave energy, protecting existing marsh or vegetation. Sediment is deposited behind these structures and promotes subsequent colonization and growth of new marsh vegetation. Christmas tree fences are relatively inexpensive, with an average cost of $50 per linear foot.

Through WRDA, the United States Congress authorized the United States Army Corps of Engineers (USACE) to construct large-scale freshwater diversion projects along the Mississippi River. These river diversions have the potential to benefit vast areas of deteriorating marsh by introducing beneficial freshwater, sediment, and nutrients. It is anticipated that the Caernarvon and Davis Pond Freshwater Diversions near New Orleans will benefit over 51,200 acres of wetland habitat.

**COAST 2050**

In 1997 a significant planning effort called "Coast 2050" was initiated to combine all elements of Louisiana's previous coastal restoration efforts, as well as new initiatives. This new approach included input from private citizens, local governments, state and federal agency personnel, and the academic community. This comprehensive plan focused all efforts of the participating agencies on the common goal of restoring and protecting the coastal ecosystem in Louisiana. Coast 2050 subdivided the Louisiana coast into 4 planning regions based on hydrologic basins. In order to reestablish a sustainable, highly productive ecosystem, Coast 2050 identified the following three strategic goals as the essential natural processes required:

Goal 1: Assure vertical accumulation to achieve sustainability;
Goal 2: Maintain estuarine gradient to achieve diversity; and
Goal 3: Maintain exchange and interface to achieve system linkages.

The Louisiana Coastal Wetlands Conservation and Restoration Task Force (Breaux Act Task Force) and the State Wetlands Authority adopted the Coast 2050 effort as their official restoration plan. It has also garnered the support of the 20 parish councils and police juries within the Louisiana coastal zone.

**LOUISIANA COASTAL AREA FEASIBILITY STUDY**

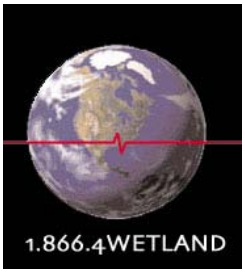
The Louisiana Coastal Area (LCA) Feasibility Study, based on Coast 2050, contains the long-range, large-scale ecosystem restoration strategies necessary to preserve and protect coastal Louisiana. The LCA study subdivided the Louisiana coast into 4 subprovinces similar to the Coast 2050 planning regions. The study will develop the report needed by the United States Congress to authorize a comprehensive coastwide restoration program in Louisiana. The LCA study, initiated in 1999, is expected to progress over a 10-year period, at an estimated cost of $35 million. The projected cost estimate to construct and implement the Coast 2050 strategies is $14 billion. The feasibility study evaluates the existing research and consensus-based solutions arrived at throughout the state's various coastal regions and provides the necessary scientific, technical, and engineering details that the United States Congress will need in order to make an informed decision.

**AMERICA'S WETLAND CAMPAIGN**

In the largest, most comprehensive public education initiative in its history,

America's WETLAND
Campaign to Save Coastal Louisiana

Louisiana launched America's WETLAND: Campaign to Save Coastal Louisiana, with an initial three-year effort announced by Governor M.J. "Mike" Foster, Jr. at the annual meeting of the Southern Governors Association in August 2002. The campaign will establish a powerful, consistent, and effective identity and brand along with images and core messages to define the problem and the impact of the loss of Louisiana's wetlands. The America's Wetland campaign will elevate issues associated with coastal wetland loss to national and world status. It will also create outreach opportunities and utilize comprehensive print and electronic media strategies to increase news coverage, educate the public, and engender campaign support. The campaign received support from the Louisiana congressional delegation, state legislature, and prominent business and civic leaders. For more information, please visit the campaign's website www.americaswetland.com.




## GOVERNOR'S COMMISSION ON COASTAL RESTORATION AND CONSERVATION

Act No. 114 of the Louisiana State Legislature created the Governor's Commission on Coastal Restoration and Conservation during the First Extraordinary Session of 2002. The 31-member commission represents statewide stakeholders. The purpose of the Commission is to advise the Governor and the Executive Assistant for Coastal Activities on the overall status and direction of the state's coastal restoration program, while fostering cooperation on coastal preservation and restoration issues among federal, state, and local governmental agencies, conservation organizations, and the private sector.

## OTHER RECENT PROGRAM DEVELOPMENTS

*The 2003 Evaluation Report to the U.S. Congress on the Effectiveness of Coastal Wetlands Planning, Protection, and Restoration Act Projects*

The Breaux Act legislation requires that a report be provided to the U.S. Congress every three years on the effectiveness of restoration projects in creating, restoring, protecting, and enhancing coastal wetlands in Louisiana. Having previously organized the production of the 1997 and 2000 reports, CRD convened an ad hoc committee in December 2002 for the purpose of preparing *The 2003 Evaluation Report to the U.S. Congress on the Effectiveness of Coastal Wetlands Planning, Protection, and Restoration Act Projects*, commonly known as the "Report to Congress".

The ad hoc committee, composed of representatives from each Breaux Act partner agency, CRD, and a contractor, directed the development and distribution of the report. The Report to Congress conveyed the accomplishments of the Breaux Act to date and described the goals and direction of recent Breaux Act initiatives. The report emphasized the national importance of Louisiana's coastal wetlands in preserving vital infrastructure, sustaining critical habitats, and protecting local communities.

The Report to Congress was submitted to the U.S. Congress on behalf of the Breaux Act Task Force in December 2003.

*The Coastwide Reference Monitoring System*

The Coastwide Reference Monitoring System (CRMS)-Wetlands program, which was designed and reviewed by state and federal agency personnel, academia, and industry professionals, will strengthen the current CWPPRA monitoring program. Implementation of CRMS-Wetlands will provide a cost-effective means of evaluating individual projects and the collective effects of projects at the hydrologic basin and ecosystem scale. Information gathered by the program will be used for planning activities, adaptive management, and predicting future changes in Louisiana's coastal ecosystems with an increased degree of accuracy, and will also help guide future management decisions. The CRMS-Wetlands program is essential to determine the ecological condition of the coastal wetlands to ensure that the strategic coastal plan for Louisiana (Coast 2050/ LCA) is effective in recreating a sustainable coastal ecosystem. The program will also provide data to fill critical information gaps and support refinement of hydrodynamic and ecological simulation and desktop models developed under the LCA.

The CRMS-Wetlands program was officially adopted by the CWPPRA Task Force in August 2003. Landrights acquisition has been initiated and site-specific arrangements for data collection activities are currently being made to pave the way from CRMS-Wetlands implementation.

*Louisiana Coastal Zone Global Positioning System Network*

Louisiana has a dynamic geology as much of the state is composed of sedimentary alluvial soils which are compacting over time, and there may also be tectonic movements as yet undescribed. These processes create difficulties for surveyors, who use permanently-placed reference devices called "benchmarks", in determining the elevation of specific geographic locations.

This problem has been addressed with the creation of a Global Positioning System (GPS) Network that consists of a primary network and a secondary network. The primary network consists of 49 permanently fixed monuments situated throughout the southern portion of the state. The secondary network is project specific and will be developed with the primary GPS network as its origin.

Future uses and benefits of the Louisiana Coastal Zone GPS Network are already being discussed by various agencies, such as the National Oceanic Atmospheric Administration (NOAA), who are proposing the development of the Continuously Operating Reference Stations (CORS) network. The CORS network is another system of vertical/horizontal control which utilizes GPS technology. The CORS stations will work in unison with the GPS Network, making it more user-friendly and less expensive to access the Louisiana Coastal Zone GPS Network.

*The Breaux Act Oyster Lease Acquisition Program*

The Breaux Act Oyster Lease Acquisition Program was adopted by the Breaux Act Task Force on April 16th, 2003. This policy was simultaneously promulgated by emergency rule through the Louisiana State Legislature and went into full effect on April 20th, 2003.

The purpose of the regulations, and the program itself, is to give the state a mechanism to acquire active oyster leases within an area affected by Breaux Act restoration projects. The lease will be acquired in whole, or in part, depending upon the nature and duration of the anticipated impact. As with all land rights

issues associated with Breaux Act projects, this program is strictly voluntary on the part of the lease holder.

*Information Management System*

Implementation of the coastal restoration program generates an abundance of environmental monitoring data, engineering data, geospatial data, and both project-specific and programmatic reports. Moreover, as the science of coastal restoration grows there is an increasing need for information exchange within the restoration community worldwide. In an effort to effectively manage and make available the large amount of data and information generated by the coastal restoration program, the CRD/CED maintains a detailed information management system that is currently accessible through the CRD/CED web site located at www.saveLAwetlands.org.

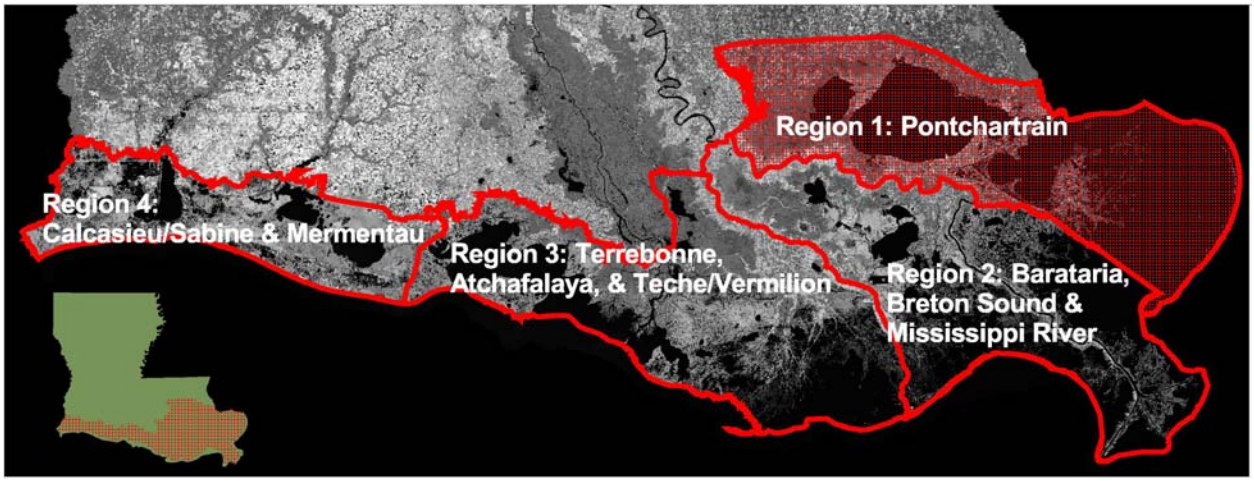
This web site contains a link to a GIS-integrated system that combines the web site with a GIS database and a coastal restoration project relational database. GIS data that are available on the system include satellite imagery, aerial photography, coastal restoration project boundaries, elevation benchmarks, geotechnical soil borings, and monitoring stations. Users can perform a wide range of custom queries on many of the GIS data layers available to refine and summarize information. Through use of this GIS technology, it is possible to seamlessly link directly to the coastal restoration project database and download environmental data, geospatial data, and project reports for any coastal restoration project. This innovative approach to environmental data and information dissemination will elevate public awareness and advance the science behind coastal restoration

**SYNOPSIS**

The CRD/CED, its Federal partners, and the State Wetlands Authority have implemented projects throughout coastal Louisiana that have already been successful at restoring, protecting, and enhancing coastal wetlands. These projects are reducing coastal erosion, improving habitat conditions for coastal fisheries and wildlife species, and building new wetlands.

This report provides information about all coastal restoration projects that have been completed or are in the planning stages in the four Coast 2050 regions to date. It includes results from monitoring data, as well as a compilation of information from all federal and state agencies involved in coastal restoration in Louisiana.

# REGION 1




**INTRODUCTION**

Region 1 encompasses the Lake Pontchartrain Basin, extending from the Mississippi River Gulf Outlet (MRGO) on the south to the Prairie Terrace on the north, and from the Chandeleur Islands on the east to Lake Maurepas on the west. This region covers all or part of the following parishes: Livingston, Tangipahoa, St. Tammany, St. Bernard, Orleans, Jefferson, St. Charles, St. John the Baptist, St. James, and Ascension.

Region 1 contains 576,570 acres of coastal wetlands consisting of approximately 110,000 acres of bottomland hardwood forest, 213,570 acres of swamp, 34,700 acres of freshwater marshes, 27,700 acres of intermediate marshes, 110,900 acres of brackish marshes, and 79,700 acres of saline marshes.

Estimates of wetland loss from Region 1 indicate that between 1990 and 2000, a total of 23,296 acres of wetlands have been lost (an average of 2,304 acres per year). Lakes Pontchartrain, Maurepas, and Borgne are the dominant hydrologic features within this region. Predominantly all of the Amite, Lake Maurepas, and Tickfaw watersheds (a combined area of 3,255 square miles) drain into Lake Maurepas. Lake Pontchartrain, connected to Lake Maurepas by Pass Manchac and North Pass, also receives freshwater inflows from the Tangipahoa and Liberty Bayou-Tchefuncte watersheds (a combined area of 1,471 square miles), as well as the Bonnet Carrè Spillway. Major navigation channels within the region are the MRGO and the Gulf Intracoastal Waterway (GIWW).

Considerable wetland loss began in Region 1 in the early 1960s after the construction of the MRGO, with marsh loss occurring directly through channel dredging, and indirectly through saltwater intrusion. Effects of increased salinities were seen as far away as the Pontchartrain/Maurepas Land Bridge. Marshes east of New Orleans and adjacent to the MRGO were severely impacted by levee-induced ponding of water. Other major causes of land loss within this region include shoreline erosion, subsidence, and altered hydrology.

The most critical concerns of parish governments and the public are preserving the present habitats and current levels of productivity. Near the Manchac and North Shore areas and around the Pearl River mouth, conversion of some intermediate and brackish marshes to fresh marshes is needed. Open water in the interior of the forested wetlands near Lake Maurepas is also

recommended for conversion back to forested wetland. Forested wetlands located immediately southwest of the MRGO in the Central Wetlands are denoted for expansion. Some of the saline Biloxi Marshes are recommended for conversion to brackish marshes.

Coast 2050 identified specific ecosystem strategies for protecting and sustaining the region's coastal resources. These strategies can be grouped into one of the following five general categories: restoring swamps, restoring and sustaining marshes, protecting the integrity of the shorelines, restoring and maintaining the Chandeleur Islands, and restoring and maintaining critical landforms.

**PROJECT INFORMATION**

A total of 59 restoration projects have been authorized in Region 1 (Table 1). Project specific information is presented below, organized by project funding source.

*Breaux Act*

A total of 17 projects have been authorized under the direction of the Breaux Act in Region 1, which are anticipated to benefit 11,856 acres of wetlands at a cost of $25,475,934. An additional project, Lake Borgne and MRGO Shoreline Protection (PO-32) was authorized in 2003 on the 12th Project Priority List. Four projects in Region 1 address imminent marsh loss due to changes in natural hydrology. The constructed projects are Fritchie Marsh Restoration (PO-06), Bayou Sauvage National Wildlife Refuge Hydrologic Restoration (PO-16 and PO-18). A project that is currently authorized for construction is Hopedale Hydrologic Restoration (PO-24). This project will restore hydrology to a more natural state.

One dedicated dredging project exists within Region 1, Bayou LaBranche Wetland Creation (PO-17). This project involved filling an open water area with dredged material from Lake Pontchartrain. Monitoring data indicate that the area was converted from 18.5% land/81.5% open water in 1993 to 81.7% land/18.3% open water by 1997. Approximately 51% of the area is now emergent marshes and 31% is scrub/shrub.

The MRGO Disposal Area Marsh Protection (PO-19) project involves hydrologic modifications with the intent of preserving fresh marshes that are considered valuable for waterfowl. This marsh management project will also prevent bank erosion along the MRGO.

Two projects within Region 1, the LaBranche Wetlands Terracing, Planting and Shoreline Protection (PO-28) project and the Bayou Chevee Shoreline Protection (PO-22) project, are designed to protect the shoreline of Lake Pontchartrain. Both involve building rock dikes to protect the shoreline and create favorable conditions for submerged aquatic vegetation growth.

The Lake Borgne Shoreline Protection (PO-30) project is authorized for future construction. The project will maintain the integrity of the marshes that separate Lake Borgne from the MRGO.

The Chandeleur Islands Marsh Restoration (PO-27) project utilizes vegetation plantings at 22 selected sites to aid in the recovery of the Chandeleur Islands from damage sustained during Hurricane Georges in 1998.

Two water diversion projects are authorized within Region 1, Opportunistic Use of Bonnet Carre Spillway (PO-26), and River Reintroduction into Maurepas Swamp (PO-29). These projects will divert water from the Mississippi River to wetlands surrounding lakes Pontchartrain and Maurepas, creating more favorable conditions for the vegetation in that area.

The Breaux Act Task Force officially deauthorized the following four

projects in Region 1: Violet Freshwater Distribution (P0-09a), Red Mud Demonstration (PO-20), Eden Isles East Marsh Restoration (PO-21), Bayou Bienvenue Pump Station Diversion and Terracing (PO-25).

*State*

Six projects, which were implemented in Region 1 by the CRD/CED and funded by the Wetlands Trust Fund, are currently estimated to benefit 2,443 acres of land at a cost of $3,673,435.

Two freshwater diversion projects, Violet Siphon (PO-01) and Central Wetlands (PO-08), address increased salinity and reduced sediment and nutrient availability in deteriorating marshes. By restoring the input of freshwater, salinity is decreased and the project area is nourished with the fine sediment and nutrients from the Mississippi River.

Four shoreline protection projects Bayou Chevee (PO-02c), LaBranche Shoreline (PO-03 and PO-03b), and Turtle Cove (PO-10) address erosion along critical areas of the Lake Pontchartrain shoreline. Post construction monitoring data from Turtle Cove from October 1994 to December 1996 indicate that the shoreline in the project area prograded an average of 23.4 feet, creating more than 5 acres of wetlands.

*Parish Coastal Wetlands Restoration Program*

The following seven Christmas tree projects have been constructed within Region 1: Blind Lagoon, Crab Pond, Goose Point, LaBranche, The Prairie, Bayou Bienvenue and Jones Island. In 2003 The Prairie, LaBranche, Blind Lagoon Bayou Bienvenue and Jones Island Christmas tree projects were refurbished.

Elevation surveys at the LaBranche site revealed the accumulation of approximately 0.35 feet of sediment during the first two years leading to the creation of 3 acres of wetlands. These results clearly demonstrate the effectiveness of this technique. Since 1990, approximately 6,044 linear feet of fences have been constructed in Region 1.

*DNR/NRCS/SWCC Vegetation Planting Program*

Since 1988, a total of 22 vegetation planting projects have been implemented within Region 1. These projects involved planting approximately 62,213 plants (70% smooth cordgrass, *Spartina alterniflora*) along more than 208,758 linear feet of shoreline/bankline. Several phases exist for many of the planting projects, which span over several years. The 2003 vegetation planting projects for Region 1 are Point Platte Demo Project, Amite River Diversion Canal, Bayou Conway, and Couba Island Cut-off.

*Section 204/1135*

Within Region 1, three Section 204 projects were constructed in 1999 along the MRGO between Mile -3 and Mile 14. These projects utilized dredged material from routine maintenance of the MRGO to create approximately 76 acres of wetlands.

A fourth project, MRGO, Mile 14 to 12 will be constructed in 2002 in Region 1. This project will utilize dredged material from the MRGO to create approximately 50 acres of wetlands behind the MRGO jetty.

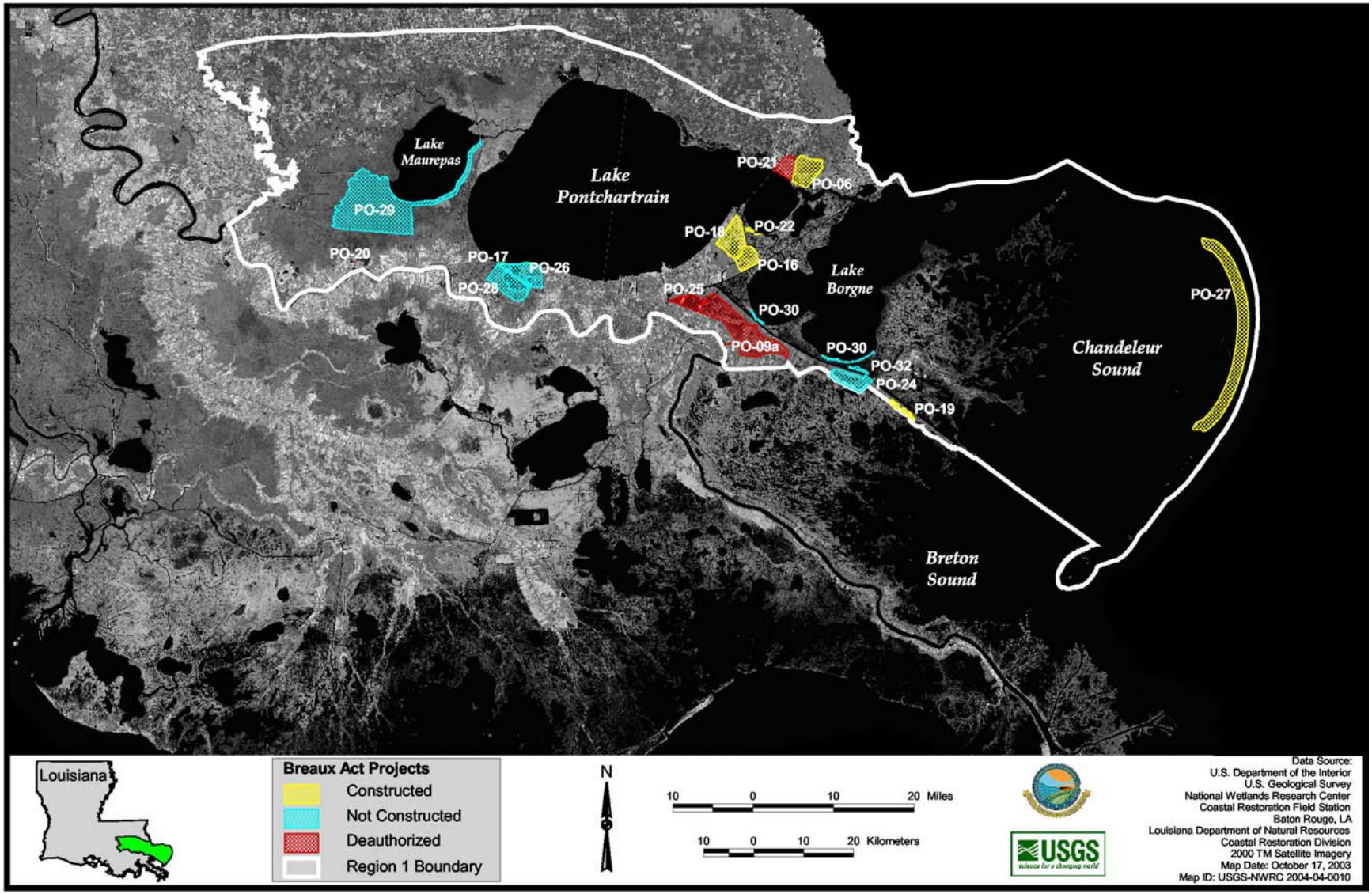



**Figure 3: Location of Breaux Act projects authorized in Coast 2050 Region 1.**

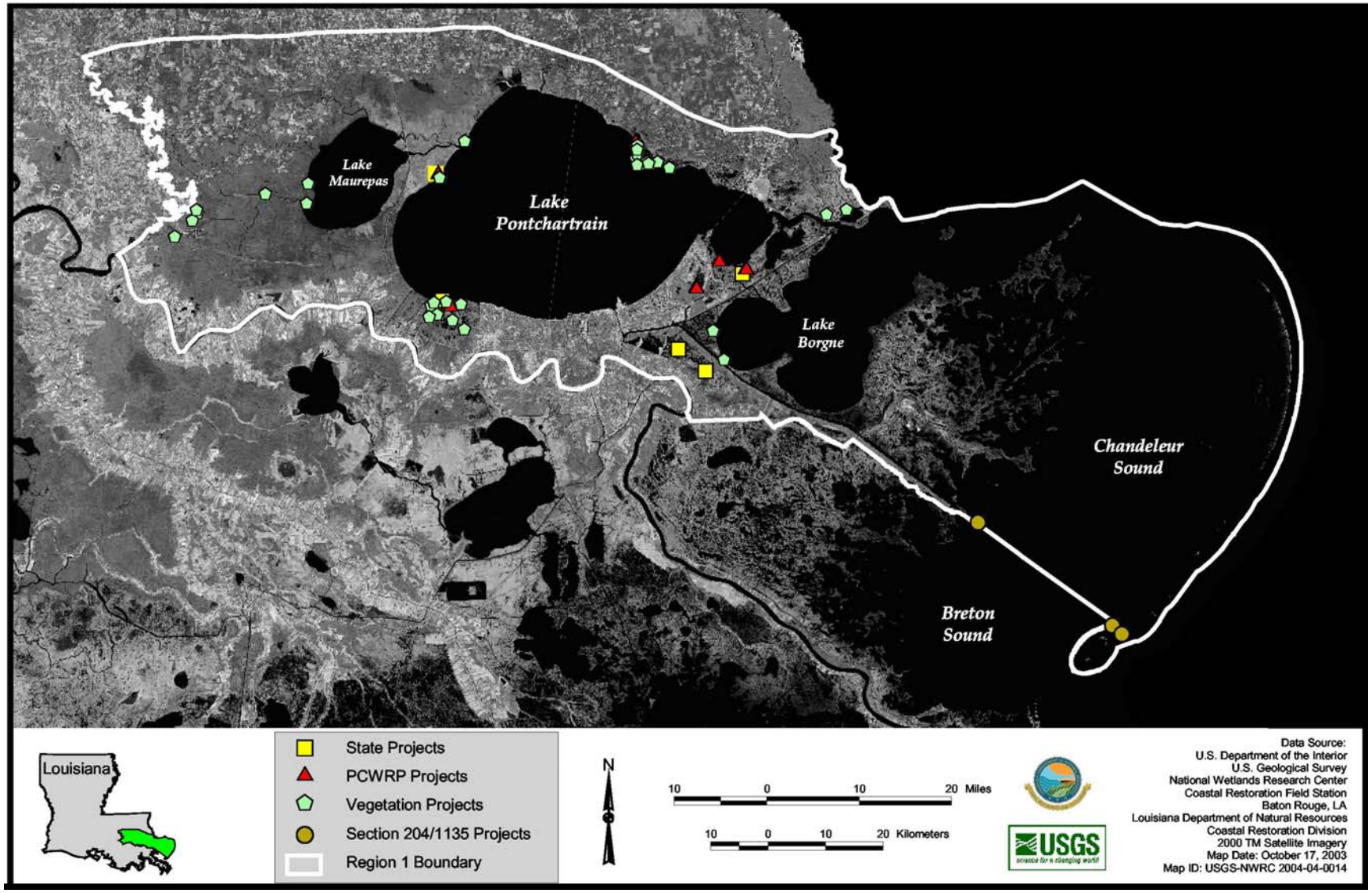



**Figure 4: Location of State, PCWRP, Vegetation, and Section204/1135 projects in Coast 2050 Region 1.**

**Table 1.** Restoration projects completed or pending in Coast 2050 Region 1.

| Program | State Project Number (Federal) | Project Name | Project Type | PPL | Agency/Sponsor | Senator | Representative | Parish | Acres Benefitted | Construction Completion Date | Engineering, Design, & Landrights Cost | Construction Cost | Operation, Maintenance, & Monitoring Cost | Baseline Cost Estimate | Current Cost Estimate | Project Summary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Breaux Act | PO-06 (PO-06) | Fritchie Marsh Restoration | HR | 2 | NRCS | Schedler | Crowe, Schneider | StT. | 1,040 | 2001 | $279,347 | $781,707 | $1,140,858 | $3,048,389 | $2,201,912 | This project was authorized to address imminent marsh loss caused by alterations in the natural hydrology. The implementation of this project will restore a more natural hydrologic regime to a wetland near Slidell, Louisiana by facilitating the input of freshwater into the wetlands. |
| Breaux Act | PO-09a (PO-09a) | Violet Freshwater Distribution (Deauthorized) | HR | 3 | NRCS | Dean, Johnson | Odinet, Hutter | StB. | N/A | Deauth. | $155,743 | N/A | $42,854 | $1,821,438 | $198,597 | This project was authorized to manage the distribution of freshwater from the existing state-funded Violet Siphon (PO-01) project. The implementation of this project would conserve and enhance vegetated wetlands by distributing freshwater from the Mississippi River and municipal storm water pumping stations into adjacent wetlands. Based on findings from pre-construction geotechnical investigations, the required design revisions made this project economically unjustifiable. This project was officially deauthorized by the Breaux Act Task Force in October of 2001. |
| Breaux Act | PO-16 (XPO-52A) | Bayou Sauvage National Wildlife Refuge Hydrologic Restoration, Phase 1 | HR | 1 | USFWS | Johnson | Odinet | Orl. | 1,550 | 1996 | $86,863 | $887,847 | $654,692 | $1,657,708 | $1,629,403 | This project utilizes pumps to remove excess water from the project area, to promote the growth of fresh marsh vegetation, and to protect black willow (*Salix nigra* ) stands. Construction was completed in May 1996 and biological monitoring has been initiated. |
| Breaux Act | PO-17 (PPO-10) | Bayou LaBranche Wetland Creation | DM | 1 | USACE | Chaisson | Smith | StC. | 203 | 1994 | $608,007 | $2,784,909 | $274,584 | $4,461,301 | $3,667,501 | This project utilized dredged material from Lake Pontchartrain to replace lost wetlands by directly creating a 70:30 land/water wetland area in shallow open water near New Orleans, Louisiana. Construction was completed in April 1994 and biological monitoring has been initiated. |
| Breaux Act | PO-18 (XPO-52B) | Bayou Sauvage National Wildlife Refuge Hydrologic Restoration, Phase 2 | HR | 2 | USFWS | Johnson | Odinet, Swilling | Orl. | 1,280 | 1997 | $101,483 | $892,402 | $648,666 | $1,452,035 | $1,642,552 | This project utilizes pumps to remove excess water from the project area and to promote the growth of fresh marsh vegetation. Construction was completed in June 1997 and biological monitoring has been initiated. |
| Breaux Act | PO-19 (XPO-71) | Mississippi River Gulf Outlet (MRGO) Disposal Area Marsh Protection | MM | 3 | USACE | Dean | Odinet | StB. | 755 | 1999 | $252,134 | $40,000 | $26,311 | $512,198 | $318,445 | This project was authorized to address loss of fresh marsh on the Mississippi River Gulf Outlet (MRGO) disposal area. The project was reduced in scope from its original design to repair a shorter reach of earthen dikes and was completed by the USACE in January of 1999. |
| Breaux Act | PO-20 (XTE-43) | Red Mud Demonstration (Deauthorized) | MC | 3 | EPA | Lambert | Faucheux | StJo. | N/A | Deauth. | $26,836 | $321,499 | $122,165 | $350,000 | $470,500 | This project was authorized to determine whether red mud, produced as a by-product of removing alumina from bauxite, could be utilized as marsh-creation material in combination with compost and marsh sediment. Construction of the experimental units was initiated in 1997; however, due to unexpected problems with fill material, liners, and contaminants in the water source, the project was officially deauthorized by the Breaux Act Task Force in August 2001. |
| Breaux Act | PO-21 (PPO-4) | Eden Isles East Marsh Restoration (Deauthorized) | HR | 4 | NMFS | Schedler, Hainkel | Schneider | StT. | N/A | Deauth. | $36,079 | N/A | $2,947 | $5,018,968 | $39,026 | There was a change in landowners of the project area during the planning phase of this project. The new landowner chose not to participate in the restoration program. Consequently, the project was officially deauthorized by the Breaux Act Task Force in January 1998. |

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| Breaux Act | PO-22 (XPO-69) | Bayou Chevee Shoreline Protection | SP | 5 | USACE | Johnson | Odinet | Orl. | 75 | 2001 | $401,597 | $1,802,719 | $380,871 | $2,555,029 | $2,585,187 | The scope of this project has been modified from a Beneficial Use of Dredged Material project. The revised project will utilize two sections of rock dikes to protect this currently exposed wetland area from erosive wave energy from Lake Pontchartrain, and to enhance the establishment of submerged aquatic vegetation in the ponds behind the rock dikes. |
| Breaux Act | PO-24 (PPO-38) | Hopedale Hydrologic Restoration | HR | 8 | NMFS | Dean | Odinet | StB. | 134 | Pending | $250,000 | $438,000 | $874,000 | $2,179,491 | $1,562,000 | This project will abate site-specific wetland loss by replacing collapsed culverts installed in the 1950s near Yscloskey, Louisiana. These degraded water control structures are currently preventing the drainage of high tides and storm water runoff, resulting in impounded water on the marsh. |
| Breaux Act | PO-25 (XPO-74a) | Bayou Bienvenue Pump Station Diversion and Terracing (Deauthorized) | HR MC | 8 | NMFS | Dean, Johnson | Odinet, Richmond | Orl. StB. | N/A | Deauth. | $185,606 | N/A | $706 | $3,295,574 | $186,312 | This project combines the use of existing pump stations with the construction of a 2,500 foot-long diversion channel, water control structures, and earthen terraces planted with smooth cordgrass (*Spartina alterniflora* ). This will force the flow of freshwater and nutrients through a deteriorated marsh area to abate site-specific marsh loss. The project was officially deauthorized by the Breaux Act Task Force in April 2002. |
| Breaux Act | PO-26 (XPO-55a) | Opportunistic Use of the Bonnet Carre' Spillway | FD | 9 | USACE | Chaisson | Smith, Ansardi | StC. | 177 | Pending | $68,427 | N/A | $82,279 | $150,706 | $150,706 | To abate high salinity stress on vegetated wetlands surrounding Lake Pontchartrain, this project incorporates the removal of pins from the Bonnet Carre Spillway structure during high flow periods in the Mississippi River to allow no more than 4,000 cubic feet per second of water to flow from the river into Lake Pontchartrain. This will not be possible every year and the pins will be replaced by April 1 of each year to reduce the possibility of algal blooms in the lake. |
| Breaux Act | PO-27(XPO-95) | Chandeleur IslandsMarsh Restoration | VP | 9 | NMFS | Dean | Odinet | StB. | 220 | 2001 | $211,493 | $1,343,061 | $42,404 | | | This project was authorized to accelerate the recovery period of barrier island areas overwashed by Hurricane Georges in 1998 through vegetation plantings. The overwash areas which encompass 364 acres, are located at 22 sites along the Chandeleur Sound side of the island chain, and were planted with smooth cordgrass (Spartina alterniflora). |
| Breaux Act | PO-28 (PPO-07a) | LaBranche Wetlands Terracing, Planting, and Shoreline Protection | SNT SP VP | 9 | NMFS | Chaisson | Smith, Ansardi | StC. | 489 | Pending | $989,813 | N/A | $37,378 | $821,752 | $1,027,191 | This area has experienced wetland loss as a result of Mississippi River levee construction, agricultural impoundment failure, transportation infrastructure construction, oil and gas development, and shoreline erosion. This project includes shoreline protection, marsh terraces, vegetation planting, and herbivore control components to create emergent marsh, and to protect interior marsh fringes and the Lake Pontchartrain shoreline from continued erosion. This project is currently on hold. |
| Breaux Act | PO-29 (Complex Project) | River Reintroduction into Maurepas Swamp | FD | 11 | EPA | Fontenot, Lambert, Chaisson | Faucheux, Quezaire, Diez, Beard | StJo. | 5,438 | Pending | $6,731,444 | N/A | $48,863 | $5,434,288 | $6,780,307 | This project is intended to restore a natural hydrologic regime and increase nutrient inputs in cypress-tupelo swamp tracts south of Lake Maurepas. This will be accomplished through the diversion of Mississippi River water into the region of degraded swamp. |
| Breaux Act | PO-30 | Lake Borgne Shoreline Protection | SP | 10 | EPA | Dean | Odinet | StB. | 229 | Pending | $1,645,962 | N/A | $21,988 | $1,334,360 | $1,667,950 | This project is necessary to maintain the integrity of the narrow strip of marsh that separates Lake Borgne from the Mississippi River Gulf Outlet (MRGO). This land protects the communities of Shell Beach, Yscloskey, and Hopedale from direct exposure to lake wave energies and storm surges. This will be accomplished through construction of a continuous nearshore rock breakwater. This project was merged with the adjoining project, PO-31 |

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| Breaux Act | PO-31 | Lake Borgne Shoreline Protection at Bayou Dupre | SP | 11 | EPA | Dean | Odinet | StB. | N/A | N/A | N/A | N/A | N/A | N/A | N/A | This project is necessary to maintain the integrity of the narrow strip of marsh that separates Lake Borgne from the Mississippi River Gulf Outlet (MRGO). This land protects the communities of Shell Beach, Yscloskey, and Hopedale from direct exposure to lake wave energies and storm surges. This project was initially proposed and approved as an 11th list project, but was subsequently merged with the adjoining project, PO-30. The project will hence be referred to as PO-30. |
| Breaux Act | PO-32 | Lake Borgne and MRGO Shoreline Protection | SP | 12 | USACE | Dean | Odinet | StB. | 266 | Pending | $1,317,413 | N/A | $30,932 | $1,348,345 | $1,348,345 | The project is intended to stop shoreline erosion and cause shoreline accretion along approximately 18,500 feet of Lake Borgne shoreline between Doulluts Canal and Jahncke's Ditch and to stop shoreline erosion along 12,950 feet of MRGO shoreline. |
| State | PO-01 | Violet Siphon | FD | N/A | N/A | Dean | Odinet, Hutter | StB. | 84 | 1992 | N/A | N/A | N/A | N/A | $380,584 | The purpose of this project is to return into operation the existing siphon, and to enlarge the size of the diversion so that more sediment and freshwater are available to offset marsh subsidence and saltwater intrusion. |
| State | PO-02c | Bayou Chevee | SP | N/A | N/A | Johnson | Odinet | Orl. | 75 | 1994 | N/A | N/A | N/A | N/A | $62,000 | This project installed 2,000 feet of brush fences at the mouth of Bayou Chevee. |
| State | PO-03 | LaBranche Shoreline Stabilization and Canal Closure | SP | N/A | N/A | Chaisson, Lentini | Smith, Ansardi | StC. | 1,750 | 1987 | N/A | N/A | N/A | N/A | $1,324,000 | The purpose of this project is to restore the integrity of the shoreline which separates Lake Pontchartrain from the western edge of the LaBranche wetlands. |
| State | PO-03b | LaBranche Shoreline | SP | N/A | N/A | Chaisson | Smith | StC. | 50 | 1996 | N/A | N/A | N/A | N/A | $1,290,851 | A rock breakwater was constructed along the Lake Pontchartrain shoreline, east of Bayou LaBranche, to protect the hydrologic boundary between the lake and the wetlands from being breached. |
| State | PO-08 | Central Wetlands | FD | N/A | N/A | Dean, Johnson | Odinet, Hutter | StB. | 300 | 1992 | N/A | N/A | N/A | N/A | $250,000 | This project is designed to provide freshwater, nutrients, and sediment associated with storm water runoff to an area of marsh near the Violet Siphon, PO-01. |
| State | PO-10 | Turtle Cove | SP | N/A | N/A | Chaisson | Faucheux | StJo. | 184 | 1994 | N/A | N/A | N/A | N/A | $366,000 | A 1,640 foot rock-filled gabion breakwater was constructed to maintain and protect the Lake Pontchartrain shoreline that shelters "The Prairie" (an 800-acre expanse of shallow, open water marsh bordered by organic freshwater marsh) from high wave energies, and to encourage sediment deposition behind the gabion structure. An additional $195,600 was used for maintenance in 2001. |
| PCWRP | | Crab Pond | SP | N/A | N/A | Johnson | Odinet | Orl. | 1 | 1991 | N/A | N/A | N/A | N/A | $91,646 | The Crab Pond, an open-water area adjacent to Chef Menteur Pass, is located within the Bayou Sauvage National Wildlife Refuge. Christmas tree fences were constructed to prevent Chef Menteur Pass from eroding further into Crab Pond. Fences were originally constructed and filled in 1991 and maintenance was performed in 1994, 1997, 1998, 2000, and 2001. |
| PCWRP | | Goose Point | SP | N/A | N/A | Schedler, Hainkel | Winston | StT. | 3 | 1991 | N/A | N/A | N/A | N/A | $108,935 | The Goose Point project is located along the northern shore of Lake Pontchartrain. The project was constructed to restrict the opening between Lake Pontchartrain and the inner marsh, to protect existing marsh vegetation from erosion, and to encourage the colonization and growth of new marsh vegetation. Fences were originally constructed and filled in 1991 and maintenance was performed in 1992, 1993, 1998, 2000, 2001, and 2003. |

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| PCWRP | | The Prairie | SP | N/A | N/A | Chaisson | Faucheux | StJo. | 3 | 1991 | N/A | N/A | N/A | N/A | $147,387 | Wave action from Lake Pontchartrain was eroding the strip of land adjacent to "The Prairie", an 800-acre expanse of shallow, open water bordered by freshwater marsh between Lakes Maurepas and Pontchartrain. The project was constructed to maintain the separation between The Prairie and Lake Pontchartrain, to promote the growth of marsh vegetation, and to prevent the erosion of the lake rim. Fences were originally constructed and filled in 1991 and maintenance was performed in 1995, 1996, 1997, 1998, 1999, 2000, 2001, and 2003. |
| PCWRP | | LaBranche | SP | N/A | N/A | Chaisson | Smith | StC. | 5 | 1991 | N/A | N/A | N/A | N/A | $184,800 | The LaBranche Christmas tree fences were constructed in a series of open-water ponds located within the LaBranche wetlands. These pond edges are susceptible to erosion by wind-generated waves. The brush fences were designed to create emergent marsh in the LaBranche wetland area. Fences were originally constructed and filled in 1991 and maintenance was performed in 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, and 2003. |
| PCWRP | | Blind Lagoon | SP | N/A | N/A | Johnson | Odinet | Orl. | 1 | 2000 | N/A | N/A | N/A | N/A | $36,000 | Christmas trees were placed in a wind-row manner to trap sediment and provide wildlife habitat in the Bayou Sauvage National Wildlife Refuge. Fences were originally constructed and filled in 2000 and maintenance was performed in 2001. |
| PCWRP | | Bayou Bienvenue | SP | N/A | N/A | Dean | Odinet | StB. | 1 | 2001 | N/A | N/A | N/A | N/A | $18,000 | Approximately 400 feet of brush fence were constructed to the southwest of Bayou Gauche to slow tidal-influenced water exchange, trap sediment, and protect vegetation along Bayou Bienvenue. |
| PCWRP | | Jones Island | SP | N/A | N/A | Hainkel | Winston | Tan. | 10 | 2000 | N/A | N/A | N/A | N/A | $54,000 | Created Christmas tree island wildlife habitat and planted vegetation (cypress seedlings) to re-establish bottomland forest. Fences were originally constructed and filled in 2000 and maintenance was performed in 2001, 2002, and 2003. |
| Vegetation | | Turtle Cove | VP | N/A | N/A | Chaisson | Faucheux | StJo. | 6 | 1987, 1996 | N/A | N/A | N/A | N/A | $3,254 | A total of 480 giant cutgrass (*Zizaniopsis miliacea* ) plants were used over 2,400 linear feet of shoreline in order to establish vegetation in a reach of eroded shoreline on Lake Pontchartrain. These plants were installed behind a rock breakwater structure. |
| Vegetation | | Madisonville Lighthouse | VP | N/A | N/A | Hainkel | Winston | StT. | 10 | 1988 | N/A | N/A | N/A | N/A | $5,203 | A total of 4,400 smooth cordgrass (*Spartina alterniflora* ) plants were used to decrease erosion from wave action in Lake Pontchartrain near the Madisonville Lighthouse, which is located on a peninsula extending about 600 feet into Lake Pontchartrain. Plants were installed around a small nearby island, and along the sides of the peninsula where there was no rock protection. |
| Vegetation | | Goose Point | VP | N/A | N/A | Schedler, Hainkel | Winston | StT. | 166 | 1991, 1993, 1994, 1995, 1996, 1997, 1998, 2001 | N/A | N/A | N/A | N/A | $119,158 | A total of 31,200 smooth cordgrass (*Spartina alterniflora* ) plants, 500 seashore paspalum (*Paspalum vaginatum* ) plants, and 500 California bulrush (*Schoenoplectus californicus* ) plants were used in order to create a vegetation buffer against wave action from Lake Pontchartrain, re-colonize bare mud flats, and reduce interior marsh erosion along Lake Pontchartrain. |

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| Vegetation | | LaBranche | VP | N/A | N/A | Chaisson | Smith, Ansardi | StC. | 113 | 1991, 1992, 1994, 1996, 1998, 1999, 2000 | N/A | N/A | N/A | N/A | $69,284 | A total of 2,210 smooth cordgrass (*Spartina alterniflora* ) plants, 7,800 California bulrush (*Schoenoplectus californicus* ) plants, and 209 giant cutgrass (*Zizaniopsis miliacea* ) plants were used to trap sediment, reduce wave erosion, and to establish marsh vegetation in the interior of a spoil disposal area. |
| Vegetation | | MRGO - North Shore | VP | N/A | N/A | Dean | Hutter | StB. | 17 | 1995 | N/A | N/A | N/A | N/A | $10,170 | A total of 1,500 smooth cordgrass (*Spartina alterniflora* ) plants were used along the Mississippi River Gulf Outlet (MRGO) in order to create marsh and to provide shoreline protection along Bayou Dupree. |
| Vegetation | | Bayou Bienvenue | VP | N/A | N/A | Dean | Hutter | StB. | 13 | 1996 | N/A | N/A | N/A | N/A | $7,580 | A total of 430 black mangrove (*Avicennia germinans* ) trees and 688 smooth cordgrass (*Spartina alterniflora* ) plants were used on Bayou Bienvenue along the levee and along an interior borrow canal in order to decrease shoreline erosion. |
| Vegetation | | Hog Island | VP | N/A | N/A | Schedler | Crowe | StT. | 18 | 1999 | N/A | N/A | N/A | N/A | $10,848 | A total of 800 giant cutgrass (*Zizaniopsis miliacea* ) plants and 800 California bulrush (*Schoenoplectus californicus* ) plants were used to provide a vegetation buffer along an eroding shoreline segment. |
| Vegetation | | Salvador Pump-in | VP | N/A | N/A | Chaisson | Smith | StC. | 11 | 1999 | N/A | N/A | N/A | N/A | $6,780 | A total of 1,000 giant cutgrass (*Zizaniopsis miliacea* ) plants were used along 5,000 linear feet of shoreline in order to protect an area of eroded shoreline, absorb wave energy, and prevent continued erosion. |
| Vegetation | | Blind River | VP | N/A | N/A | Fontenot | Erdey | Asc. | 14 | 2000 | N/A | N/A | N/A | N/A | $8,136 | A total of 200 California bulrush (*Schoenoplectus californicus* ) plants and 1,000 containers of giant cutgrass (*Zizaniopsis miliacea* ) plants were used in selected areas to provide a vegetation buffer and reclaim eroded areas along the banks of Blind River. |
| Vegetation | | West Pearl River | VP | N/A | N/A | Schedler | Crowe | StT. | 9 | 2000 | N/A | N/A | N/A | N/A | $5,424 | A total of 400 giant cutgrass (*Zizaniopsis miliacea* ) plants and 400 California bulrush (*Schoenoplectus californicus* ) plants were used along a barren channel bank to stabilize the eroding bank. |
| Vegetation | | Bayou La Branche | VP | N/A | N/A | Chaisson | Smith | StC. | 11 | 2001 | N/A | N/A | N/A | N/A | $7,558 | A total of 1,000 California bulrush (*Schoenoplectus californicus* ) plants were placed along Bayou La Branche to provide a buffer against shoreline erosion. This particular stretch of the canal bank is currently at risk of breaching, allowing water exchange between the canal and the adjacent marsh. |
| Vegetation | | Saveiro Canal | VP | N/A | N/A | Cazayoux | Open Seat | Asc. | 9 | 2000, 2001 | N/A | N/A | N/A | N/A | $7,260 | Both giant cutgrass (*Zizaniopsis miliacea* ) and California bulrush (*Schoenoplectus californicus* ) were planted along Saveiro Canal, east of Sorrento, to create a buffer against shoreline erosion. |
| Vegetation | | Lake Maurepas | VP | N/A | N/A | Fontenot | Erdey | Liv. | 9 | 2001 | N/A | N/A | N/A | N/A | $7,524 | A total of 800 giant cutgrass (*Zizaniopsis miliacea* ) plants were used in an attempt to close off an abandoned oil field canal located three miles north of the Blind River - Lake Maurepas junction. |
| Vegetation | | Big Branch Shore Demo | VP | N/A | N/A | Schedler | Winston | StT. | 7 | 2002 | N/A | N/A | N/A | N/A | $4,816 | Five hundred trade gallon containers of smooth cordgrass (*Spartina alterniflora* ) and 136 4-inch containers of bitter panicum (*Panicum amarum* ) were planted to demonstrate the effects of fertilizer application to smooth cordgrass on a shoreline planting, and to demonstrate the effectiveness of establishing bitter panicum on shallow sand banks; 2,908 linear feet of plantings were created. |

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| Vegetation | | Lake Maurepas Demo | VP | N/A | N/A | Hainkel | Powell | Liv. | 7 | 2002 | N/A | N/A | N/A | N/A | $6,200 | A river bank planting using 600 trade gallon containers of giant cutgrass (*Zizaniopsis miliacea* ) and a shoreline planting using 200 feet of coconut fiber logs planted with 100 plugs of giant cutgrass (*Zizaniopsis miliacea* ) were done to create a vegetative buffer along Blind River and to stabilize barren shoreline of Lake Maurepas in an area that was used by the oil industry; 3,200 feet of river bank and lake shoreline was protected. |
| Vegetation | | New Orleans GIWW | VP | N/A | N/A | Johnson | Ansardi | Orl. | 6 | 2002 | N/A | N/A | N/A | N/A | $4,000 | This is a canal bank project covering 2,500 linear feet using 500 trade gallon containers of smooth cordgrass (*Spartina alterniflora* ) to establish a vegetation corridor on what used to be the bank of the GIWW. |
| Vegetation | | La Branche '02 Demo | VP | N/A | N/A | Chaisson | Odinet | StC. | 11 | 2002 | N/A | N/A | N/A | N/A | $9,000 | This interior marsh planting project used 1,000 trade gallon containers of California bulrush (*Schoenoplectus californicus* ) and 200 feet of unvegetated coconut fiber logs to reclaim marshland that had eroded and subsided; a total of 5,000 feet was planted. |
| Vegetation | | New River Canal | VP | N/A | N/A | Lambert | Diez | Asc. | 9 | 2002 | N/A | N/A | N/A | N/A | $6,400 | This canal bank planting used 800 trade gallon containers of giant cutgrass (*Zizaniopsis miliacea* ) to vegetate a newly lifted levee bank along the canal; 4,000 ft of canal bank was vegetated. |
| Vegetation | | Point Platte Demo Project | VP | N/A | N/A | Schedler | Winston | StT. | 1 | 2003 | N/A | N/A | N/A | N/A | $1,550 | Approximately 100 trade gallon containers and 150-feet of smooth cordgrass (*Spartina alterniflora* ) plugs, impregnated into coconut fiber, were planted to establish vegetation on an oil canal spoilbank. |
| Vegetation | | Amite River Diversion Canal | VP | N/A | N/A | Fontenot | Beard | Liv. | 9 | 2003 | N/A | N/A | N/A | N/A | $6,400 | A total of 800 trade gallon containers of California bulrush (*Schoenoplectus californicus* ) was planted to establish a vegetative buffer to dampen wave action along the intersection of two channels. |
| Vegetation | | Bayou Conway | VP | N/A | N/A | Lambert | Diez | Asc. | 11 | 2003 | N/A | N/A | N/A | N/A | $8,000 | Approximately 1,000 trade gallon containers of giant cutgrass (*Zizaniopsis miliacea* ) was planted on Bayou Conway to create vegetation on new spoil. |
| Vegetation | | Couba Island Cut-off | VP | N/A | N/A | Chaisson | Smith | StC. | 9 | 2003 | N/A | N/A | N/A | N/A | $6,400 | Approximately 800 units of California bulrush (*Schoenoplectus californicus* ) were planted to regain marsh in an old oil field canal. |
| Section 204/1135 | | MRGO, Berm, Mile -2 to -3 | DM | N/A | N/A | Dean | Wooton | Plaq. | N/A | 1999 | N/A | N/A | N/A | N/A | $150,000 | This Section 204 project utilized material from maintenance dredging activities along the Mississippi River Gulf Outlet (MRGO) to nourish the littoral system that feeds Breton Island. This project was completed in August 1999. |
| Section 204/1135 | | MRGO, Breton Island Restoration, Mile 2.3 to 4.0 | DM | N/A | N/A | Dean | Wooton | Plaq. | 26 | 1999 | N/A | N/A | N/A | N/A | $1,050,000 | This Section 204 project utilized material from maintenance dredging activities along the Mississippi River Gulf Outlet (MRGO) to repair Breton Island. This project was completed in November 1999. |
| Section 204/1135 | | MRGO (1999), Mile 14 to 11 | DM | N/A | N/A | Dean | Odinet | StB. | 50 | 1992 | N/A | N/A | N/A | N/A | $350,000 | This Section 204 project provided for the unconfined placement of 3,468,901 cubic yards of material into shallow water adjacent to the south jetty at about mile 15.3. The material was dredged from miles 14.0 to 11.0 of the Mississippi River Gulf Outlet (MRGO) navigation channel and placed to an elevation conducive to marsh vegetation establishment. |

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| Section 204/1135 | | MRGO, Mile 14 to 12 (2002) | DM | N/A | N/A | Dean | Odinet | StB. | N/A | 2002 | N/A | N/A | N/A | N/A | $290,000 | The project involved pumping approximately 1.6 million cubic yards to create some 50 acres of marsh behind the MRGO jetty. This project was fast tracked due to the impact of Hurricane Lili and Tropical Storm Isidore. |
| FEMA | DSR-81768 | LaBranche Wetlands (FEMA) | SP | N/A | N/A | Chaisson | Smith | StC. | N/A | 2000 | N/A | N/A | N/A | N/A | $42,800 | A 700-foot section of a Christmas tree brush fence was repaired. This project was damaged by Hurricane Georges, Hurricane Earl, and Tropical Storm Francis in 1998. |
| Other | HPL-MIT | Lake Pontchartrain Mitigation Project | SP | N/A | N/A | Chaisson | Faucheux | StJo. | 600 | 1996 | N/A | N/A | N/A | N/A | $2,225,000 | This project consisted of a near-shore, segmented breakwater system in Lake Pontchartrain parallel to a five-mile reach of the Manchac Wildlife Management Area. The project specifically mitigated for damages resulting from construction of the Lake Pontchartrain Hurricane Protection Project. |
| Other | PO-4355NP4 | Fontainebleau State Park Mitigation | SP DM | N/A | N/A | Schedler | Winston | StT. | 6 | 1999 | N/A | N/A | N/A | N/A | $225,000 | This project repaired a section of breached shoreline by depositing approximately 9,000 cubic yards of sand for a feeder berm on the easternmost end of Fontainebleau State Park. |

Program: Breaux Act=Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA); State=Restoration projects funded primarily by the State of Louisiana through the Coastal Restoration Division; PCWRP=Parish Coastal Wetlands Restoration Program (Christmas Tree Program); Vegetation=DNR/NRCS/SWCC Vegetation Planting Program; Section 204/1135= Water Resource Development Act Sections 204 and 1135 beneficial use of dredged material projects; WRDA=Water Resources Development Act; Mitigation=mitigation projects implemented by the Coastal Restoration Division; Dedicated Dredging Program= State project LA-01 (see Table 5).

Project Type: HR=Hydrologic Restoration; DM=Beneficial Use of Dredged Material; MM=Marsh Management; MC=Marsh Creation; SP=Shoreline Protection; FD=Freshwater Diversion; VP=Vegetation Planting; SNT=Sediment and Nutrient Trapping; OM=Outfall Management; BI=Barrier Island; SD=Sediment Diversion.

PPL: Priority Project List (as authorized each year by the Breaux Act Task Force).

Agency/Sponsor: EPA=Environmental Protection Agency; NMFS=National Marine Fisheries Service; NRCS=Natural Resources Conservation Service; NWRC=National Wetlands Research Center; USFWS=U.S. Fish and Wildlife Service; USACE=U.S. Army Corps of Engineers.

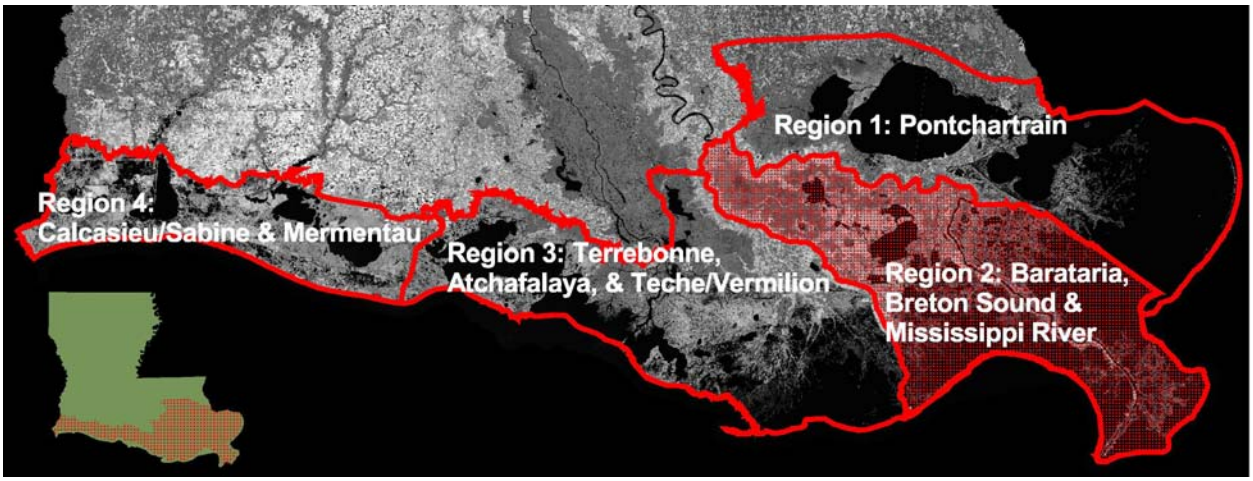
Parish: Asc.=Ascension, Asu.=Assumption, Cam.=Cameron, Ibe.=Iberia, Jef.=Jefferson, Laf.=Lafourche, Orl.=Orleans, Plaq.=Plaquemines, StB.=St. Bernard, StC.=St. Charles, StJo.=St. John the Baptist, StM.=St. Mary, StT.=St. Tammany, Tan.=Tangipahoa, Ter.=Terrebonne, Ver.=Vermilion.

Anticipated Acres Benefitted: N/A for Breaux Act demonstration and deauthorized projects.

Baseline Cost Estimates and Current Cost Estimates for Breaux Act projects are from the USACE. Costs for other restoration programs are from DNR's Contract and Budget Section. Baseline Cost and Current Cost Estimate both include contingency funds. Beginning with Breaux Act PPL 10, project costs are for Phase I only. Vegetation program project costs are estimated based on plant size and quantity.

N/A=Not Applicable.

# REGION 2




## INTRODUCTION

Region 2 includes the Breton Sound and Barataria basins and the Mississippi River Delta. It stretches from the MRGO on the east to Bayou Lafourche on the west, and from the Mississippi River on the north to the Gulf of Mexico on the south. This region covers all or part of the following parishes: St. Bernard, Plaquemines, Jefferson, Lafourche, St. Charles, St. James, St. John the Baptist, and Assumption.

Region 2 contains 894,700 acres of coastal wetlands. These wetlands are classified as 90,000 acres of bottomland hardwood forests, 146,000 acres of cypress-tupelo swamps, 220,100 acres of fresh marshes, 73,000 acres of intermediate marshes, 214,500 acres of brackish marshes, and 151,100 acres of saline marshes.

This region lost approximately 52,160 acres of wetlands between 1990 and 2000, an average of 5,184 acres per year. This region is currently experiencing some of the highest rates of land loss across Louisiana's coast; therefore, there is a high concentration of restoration projects in the area. Factors that are contributing to this degradation include: altered hydrology, oil and gas access canals and associated saltwater intrusion, nutria herbivory, wind-induced shoreline erosion, and high subsidence rates.

Habitat objectives for the year 2050 are the result of a cooperative effort between the public, parish governments, and Coast 2050 Regional Team members. Several large diversions into the Barataria Basin are proposed to extend the fresh marshes south of Little Lake and across the basin through the Myrtle Grove area. Another objective is to create a new strip of fresh marsh parallel to the Mississippi River from West Pointe a la Hache to Venice and near the river in American Bay. A band of intermediate marsh is desired gulf-ward of the fresh marshes, and brackish marshes are desired to its south in the vicinity of Barataria Bay. Additional objectives include the restoration and maintenance of barrier islands and the barrier shoreline.

Coast 2050 identified specific regional ecosystem strategies for protecting and sustaining the region's coastal resources. These specific ecosystem strategies can be grouped into one of the following five general categories: restoring swamps; restoring and sustaining marshes; protecting bay and lake shorelines; restoring and maintaining barrier headlands, islands, and shorelines; and maintaining critical

landforms on the Central Basin Land Bridge.

**PROJECT INFORMATION**

A total of 128 restoration projects have been authorized for Region 2 (Table 2). Project specific information is presented below, organized by project funding source.

*Breaux Act*

A total of 42 projects have been authorized under the direction of the Breaux Act in Region 2. They are anticipated to benefit 66,018 acres of wetlands at a cost of $171,267,903. One project, West Bay Sediment Diversion (MR-03), was constructed under the Breaux Act in Region 2 in 2003.

Two projects were constructed in Region 2 to address imminent marsh loss due to changes in natural hydrology: Jonathan Davis Wetland Protection (BA-20) and GIWW to Clovelly Hydrologic Restoration (BA-02).

Eight freshwater diversion projects have been authorized in Region 2. They are designed to increase fluvial input into degraded wetlands which have been isolated from the Mississippi River's seasonal flooding through the construction of levees. The addition of freshwater, sediment, and nutrients will greatly benefit these areas.

One sediment and nutrient trapping project was authorized on the 12th Project Priority List this year in Region 2. The Mississippi River Sediment Trap (MR-12) project was designed to create emergent wetlands through the beneficial use of material dredged from a sediment trap located near the Head of Passes in the Mississippi River.

Three projects within Region 2 protect the shorelines of Lake Salvador and the Barataria Bay Waterway by using rock dikes to absorb wave energy. At the Barataria Bay Waterway West Side Shoreline Protection (BA-23) project, a 9,400 linear foot rock dike was constructed, and a 17,600 linear foot rock dike was constructed at Barataria Bay Waterway East Side Shoreline Protection (BA-26). In addition to testing an 8,000 linear foot rock dike, the Lake Salvador Shore Protection Demonstration (BA-15) project tested four different types of wave absorbers (10,000 linear feet total) to determine the most effective means of preventing shoreline erosion in the highly organic and unconsolidated sediment of the study area. The rock dike successfully reduced erosion rates and the shoreline prograded. The other structures were less effective. Five additional shoreline protection projects in the Barataria Bay Basin are authorized. They are: Barataria Basin Landbridge Shoreline Protection Phase I and II, Phase III and Phase IV (BA-27/27b, BA-27c, BA-27d), Pass Chaland to Grand Bayou Pass Barrier Shoreline Restoration (BA-35) and Little Lake Shoreline Protection/Dedicated Dredging Near Round Lake (BA-37).

The sediment diversion at Channel Armor Gap Crevasse (MR-06) is an uncontrolled diversion located in the lower Mississippi River Delta. This project distributes both nutrients and sediment directly from the Mississippi River. It was constructed in 1997 and is expected to create approximately 936 acres of wetlands. The Delta Wide Crevasses (MR-09) project, designed to build new delta splays, was constructed in 1999 and, similar to the MR-06 project is designed to distribute river sediment. Combined, these projects are expected to create nearly 2,400 acres of marshes. Other similar projects are the West Bay Sediment Diversion (MR-03) project, constructed in 2003, and Delta Building South of Empire (BA-31), a complex project.

Two outfall management projects were constructed in 2002 in Region 2: Naomi Outfall Management (BA-03c) and Caernarvon Diversion Outfall Management (BS-03a). Two more outfall management projects are authorized: West Pointe a la

Hache Outfall Management (BA-04c) and Delta Management at Fort St. Philip (BS-11). All four projects involve controlling and directing diverted river water to increase dispersion and retention time of freshwater, nutrients, and sediment within the brackish marshes.

Three barrier island restoration projects exist within Region 2. The Vegetative Plantings of a Dredged Material Disposal Site on Grand Terre Island (BA-28) was constructed in 2001. Construction of the East/West Grand Terre Islands Restoration (BA-30) and Pelican Island and Pass La Mer to Chaland Pass Restoration (BA-38) project are still pending.

Four Breaux Act projects will utilize dredged material to create wetlands. LA Highway 1 Marsh Creation (BA-29) will create marsh habitat in open water areas. Dustpan Maintenance Dredging Operations for Marsh Creation in the Mississippi River Delta Demonstration (MR-10), constructed in 2002, is a demonstration project that will beneficially utilize dredged spoil from routine dredging of the Mississippi River Navigation Channel in order to create and restore marshes. The Barataria Bay Waterway Wetland Restoration (BA-19) project expanded on an earlier state-funded project by creating an additional 9 acre containment area that was filled with dredged material. The Dedicated Dredging on the Barataria Basin Landbridge (BA-36) project, in conjunction with the Barataria Basin Landbridge Shoreline Protection project (BA-27/BA-27b, BA-27c, and BA-27d), will maintain the functional integrity of the Barataria Basin landbridge, and will create 564 acres of emergent marsh in open water areas.

The Breaux Act Task Force officially deauthorized eight projects in Region 2, which are: Fourchon Hydrologic Restoration (BA-18), Bayou Perot and Bayou Rigolettes Marsh Restoration (BA-21), White's Ditch Outfall Management (BS-04a), Grand Bay Crevasse (BS-07), Pass-a-Loutre Crevasse (MR-07), Beneficial Use of Hopper Dredged-Material Demonstration (MR-08), Upper Oak River Freshwater Siphon phase I (BS-09), and Bayou L'Ours Ridge Hydrologic Restoration (BA-22).

*State*

Nine projects have been implemented to date in Region 2 by the CRD/CED and funded by the Wetlands Trust Fund and/or local parish funds. These projects benefited an estimated 9,143 acres of land at a cost of $17,128,368.

Three freshwater diversion projects, all which have been constructed, are designed to create marshes through the diversion of nutrients, sediment, and freshwater from the Mississippi River into adjacent marshes. These projects are: Naomi Freshwater Diversion (BA-03), West Pointe a la Hache Diversion (BA-04), and Violet Freshwater Distribution (BS-06).

Four shoreline protection projects, Baie de Chactas (BA-05c), Bayou Segnette (BA-16), Grand Isle Bay Side Breakwaters, and North Grand Isle Bay Side Breakwaters used shell or rock to protect and rebuild eroding shorelines.

The Small Sediment Diversions (MR-01) project included the construction of ten crevasses in the Mississippi River Delta. These diversions cumulatively created 6,719 acres of emergent marshes between 1986 and 1993. Land growth rate ranged from 28 to 103 acres per year for the older crevasses that were four to 10 years old, and 0.5 to 12 acres per year for the younger crevasses that were zero to two years old.

The Queen Bess Island (BA-05b) project, a beneficial use of dredged material project, has helped to restore this important coastal island. It also restored critical nesting habitat for Louisiana's state bird, the brown pelican (*Pelecanus occidentalis*). More than 1,200 nests were built in 1998,

and more than 2,000 chicks fledged that year.

*Parish Coastal Wetlands Restoration Program*

Ten Christmas tree projects have been constructed in Region 2, totaling 18,045 linear feet of protective fences. The Goose Bayou, Whiskey Canal, Leeville, Fourchon, Eighty Arpent Canal, and Bayou Lafourche projects were constructed between 1991 and 2000, and have been maintained periodically. In 2003, Leeville #1, Fourchon, Eighty Arpent Canal, Bayou Lafourche, Whiskey Canal, and Bayou Bienvenue Christmas tree projects were refurbished.

*DNR/NRCS/SWCC Vegetation Planting Program*

Since 1988, a total of 58 vegetation planting projects have been implemented in Region 2. These projects have incorporated approximately 164,500 plants (mostly smooth cordgrass) along more than 481,636 linear feet of shoreline. Several phases, which span over several years, exist for many of the planting projects. The vegetation planting projects that were constructed in 2003 in Region 2 are Pelican Island, North Little Lake/South Bayou Perot Demo, Bayou L' ours Embankment Enhancement, Shell Island Bay, Bayou Dupont Pump-in, and Salvador Eastern Shoreline.

*Section 204/1135*

Within Region 2, the three Section 204/1135 projects which created marshes using dredged material are Grand Terre Island Wetland Creation, Barataria Bay Waterway (mile 31 to 24.5), and Barataria Bay Waterway (Grand Terre, Phase II). Approximately 115 acres of marshes were created on Grand Terre Island. The two Barataria Bay Waterway projects created approximately 205 acres of marshes along 6.5 miles of waterway.

*Federal (WRDA)*

Two freshwater diversion projects, authorized under the Federal Water Resources Development Act, will benefit the largest acreage of wetlands, thus far. The Davis Pond Freshwater Diversion project, completed in 2001, will preserve 33,000 acres of deteriorating wetlands in the Barataria Basin. The Caernarvon Freshwater Diversion project, completed in 1991, will benefit 18,200 acres of wetlands in the Breton Sound hydrologic basin. Following three years of full operation (1992 to 1995), an aerial photography analysis indicated an increase of 404 acres of wetlands in a 9,213 acre sub-sample within the outfall area of the project.

*Other*

Two projects within Region 2, Fifi Island Restoration Project, which received funding from the Louisiana Coastal Impact Assistance Plan (CIAP), and the Fisheries Habitat Restoration on West Grand Terre Island project, which was funded through a NOAA Fisheries grant, where constructed in 2003. The Fifi Island Restoration Project features a 10,000 linear foot rock shore protection structure which will protect approximately 100 acres of existing island. The Fisheries Habitat Restoration on West Grand Terre Island project consists of a rock dike built to conserve the Gulf shoreline of West Grand Terre Island and Protect Fort Livingston.

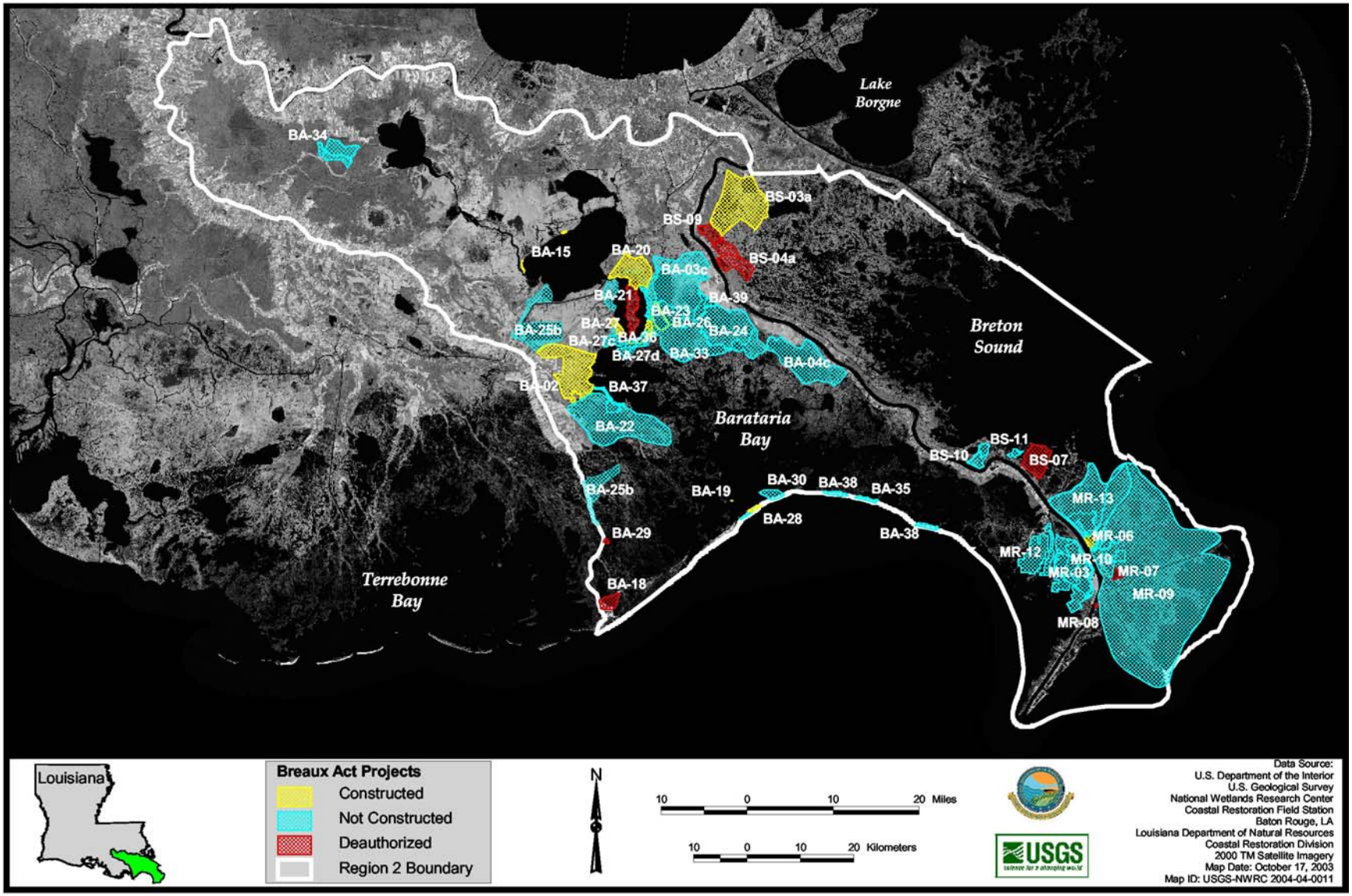



**Figure 5: Location of Breaux Act projects authorized in Coast 2050 Region 2.**

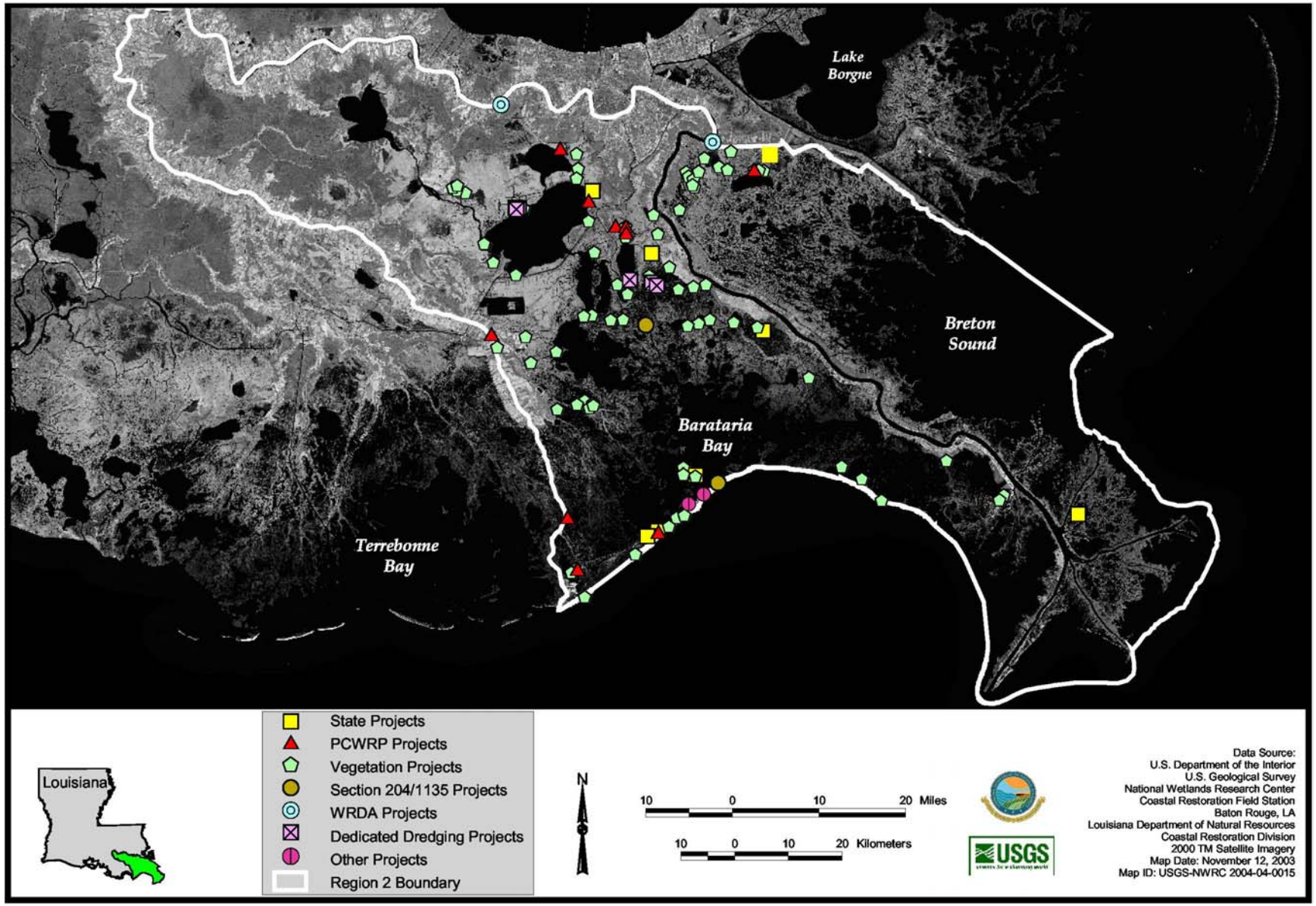



**Figure 6: Location of State, PCWRP, Vegetation, Section204/1135, WRDA, Dedicated Dredging, and Other projects in Coast 2050 Region 2.**

**Table 2.** Restoration projects completed or pending in Coast 2050 Region 2.

| Program | State Project Number (Federal) | Project Name | Project Type | PPL | Agency/Sponsor | Senator | Representative | Parish | Acres Benefitted | Construction Completion Date | Engineering, Design, & Landrights Cost | Construction Cost | Operation, Maintenance, & Monitoring Cost | Baseline Cost Estimate | Current Cost Estimate | Project Summary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Breaux Act | BA-02 (BA-02) | GIWW (Gulf Intracoastal Waterway) to Clovelly Hydrologic Restoration | HR | 1 | NRCS | Dupre | Pitre, Wooton | Laf. | 175 | 2000 | $981,549 | $5,462,880 | $2,471,703 | $8,141,512 | $8,916,132 | This project will protect and maintain approximately 2,052 acres of intermediate marsh in the project area by restoring natural hydrologic conditions that promote greater use of available freshwater and nutrients. This will be accomplished by greater freshwater retention and utilization, limiting rapid water level changes, slowing water exchange through over-bank flow, reducing rapid salinity increases, and reducing saltwater intrusion (The construction of Unit 1 was completed in 1997 and Unit 2 was completed in 2000). |
| Breaux Act | BA-03c (BA-03c) | Naomi Outfall Management | OM | 5 | NRCS | Dean, Ullo | Wooton | Plaq. | 633 | 2002 | $240,500 | $784,000 | $1,078,150 | $1,686,865 | $2,102,650 | This project was authorized to manage freshwater diverted from the Mississippi River through the Naomi siphons by the installation of two water control structures which were designed to reduce freshwater loss and saltwater intrusion. Specific goals are to reduce the rate of conversion of marsh to open water, to increase relative abundance of intermediate to fresh marsh type plant species, and to decrease mean salinity within the project area. |
| Breaux Act | BA-04 (BA-04c) | West Pointe a la Hache Outfall Management | OM | 3 | NRCS | Dean | Wooton | Plaq. | 1,087 | Pending | $637,409 | $1,764,443 | $1,666,193 | $881,148 | $4,068,045 | This project provides for management of the West Pointe a la Hache siphon outfall area to maximize the retention of freshwater, nutrients, and sediment within interior brackish marshes to counteract saltwater intrusion and wetland loss. |
| Breaux Act | BA-15 (BA-15) | Lake Salvador Shore Protection Demonstration | SP | 3 | NMFS | Chaisson | Smith, Ansardi | StC. | N/A | 1998 | $408,907 | $1,985,810 | $448,381 | $1,444,628 | $2,843,098 | Phase I of the project, constructed in 1997, tested four types of shoreline protection structures in an area of high wave energy and unstable soils. Phase II of the project, constructed in 1998, included the installation of an 8,000 foot continuous rock structure along the northwest shore of Lake Salvador, beginning at Bayou des Allemands and proceeding northeast. Phase I structures did not perform well, but Phase II has significantly reduced shoreline erosion. |
| Breaux Act | BA-18 (BA-18) | Fourchon Hydrologic Restoration (Deauthorized) | HR | 1 | NMFS | Dupre | Pitre | Laf. | N/A | Deauth. | $7,703 | N/A | $0 | $252,036 | $7,703 | This project, located in Lafourche Parish, was intended to restore typical estuarine functions to an impounded area by establishing regular tidal exchange and reducing mean water levels. The project was officially deauthorized by the Breaux Act Task Force in July of 1994 at the request of the landowner. |
| Breaux Act | BA-19 (BA-19) | Barataria Bay Waterway Wetland Restoration | MC | 1 | USACE | Ullo | Wooton | Jef. | 445 | 1996 | $144,314 | $945,791 | $83,424 | $1,759,257 | $1,173,529 | Phase I of this project is located at Queen Bess Island, east of the Barataria Bay Waterway and north of Grand Isle in Jefferson Parish. The project was originally planned to create 445 acres of marsh over the 20-year project life. Phase I has created no marsh since dredged material was placed. Phase I of construction was completed in October of 1996. Phase II will be located at some of the fourteen other dredge fill areas planned for this project. |
| Breaux Act | BA-20 (PBA-35) | Jonathan Davis Wetland Protection | HR SP | 2 | NRCS | Ullo | Wooton | Jef. | 510 | 2001 | $1,383,509 | $19,375,617 | $8,127,489 | $3,398,867 | $28,886,615 | A 34,000-foot rock dike was constructed along the entire southern boundary of the project area to reduce shoreline erosion, and water control structures were constructed to restore hydrologic conditions. The project will reduce water level and salinity fluctuations (variability), allow greater freshwater retention, and create conditions that are conducive to the maintenance of fresh and intermediate marsh. Phase I and part of Phase 2 of this project were completed in 2001. |
| Breaux Act | BA-21 (XBA-65a) | Bayou Perot/Bayou Rigolettes Marsh Restoration (Deauthorized) | MC | 3 | NMFS | Ullo | Wooton | Jef. Laf. | N/A | Deauth. | $13,574 | $1,294 | $6,095 | $1,835,047 | $20,963 | This project was initially authorized to protect deteriorated intermediate to brackish marsh located between Lake Salvador and Little Lake by using spray dredge sediment to create a 250-foot wide berm in order to re-establish the shoreline. Due to an unstable and rapidly eroding site, the project was deemed unfeasible and was officially deauthorized by the Breaux Act Task Force in January of 1998. |

| Program | State Project Number (Federal) | Project Name | Project Type | PPL | Agency/Sponsor | Senator | Representative | Parish | Acres Benefitted | Construction Completion Date | Engineering, Design, & Landrights Cost | Construction Cost | Operation, Maintenance, & Monitoring Cost | Baseline Cost Estimate | Current Cost Estimate | Project Summary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Breaux Act | BA-22 (PBA-34i) | Bayou L'Ours Ridge Hydrologic Restoration (Deauthorized) | HR | 4 | NRCS | Dupre | Pitre | Laf. | N/A | Deauth. | $339,800 | $1,149,900 | $1,268,867 | $2,418,676 | $2,758,567 | This project was proposed to restore natural hydrologic flow to the marsh by reinforcing breached areas of the Bayou L'Ours Ridge through a series of canal closures and two water control structures. These structures were designed to prevent an increase in saltwater intrusion and reduce the influence of tidal action. The project was officially deauthorized by the Breaux Act Task Force in April 2003. |
| Breaux Act | BA-23 (PBA-12a) | Barataria Bay Waterway West Side Shoreline Protection | SP | 4 | NRCS | Ullo | Wooton | Jef. | 232 | 2000 | $254,963 | $2,172,232 | $877,592 | $2,192,418 | $3,304,787 | This project will restore the natural hydrology within the marsh by reconstructing the Barataria Bay Waterway (BBW) shoreline through the use of dredged material and rock armoring along 9,400 linear feet of the west bank. This hydrologic barrier will protect marsh from excessive wave energy, water level fluctuations, and saltwater intrusion from the BBW. |
| Breaux Act | BA-24 (XBA-48a) | Myrtle Grove Siphon | FD | 5 | NMFS | Dean, Ullo | Wooton | Plaq. | 1,119 | Pending | $465,314 | $31,516 | $6,152 | $15,525,950 | $502,982 | This freshwater diversion project will divert a maximum discharge of 2,100 cubic feet per second into the project area, providing the marsh with freshwater, nutrients, and sediment. In addition, it will include one mile of leveed and armored outfall channel, a new pump, and a low-level fixed-crest weir. |
| Breaux Act | BA-25 (PBA-20) | Bayou Lafourche Siphon (Phase 1) | FD | 5 | EPA | Dupre, | Pitre | Ter. Laf. | N/A | Pending | N/A | N/A | N/A | N/A | N/A | This project incorporates the installation of eight large diversion pipes, for the purpose of creating a siphon. The siphon will pump 1,000 cubic feet per second of freshwater, and reduce marsh loss adjacent to Bayou Lafourche through the introduction of nutrient and sediment laden river water. The siphon should also enhance benefits from the GIWW/Grand Bayou Diversion Project (TE-10). This project was reauthorized on the 11th PPL as BA-25b. |
| Breaux Act | BA-25b | Mississippi River Reintroduction Into Bayou Lafourche | FD | 11 | EPA | Dupre, Ullo | Pitre, Wooton, Triche, Baldone, Dartez | Laf. Asc. Asu. | 988 | Pending | $9,619,600 | N/A | $80,400 | $9,700,000 | $9,700,000 | The goal of the project is to restore and protect the health of the marshes in the Barataria and Terrebonne basins through reintroduction of Mississippi River water with its sediment and nutrients via Bayou Lafourche. This will be accomplished by increasing flow down Bayou Lafourche to 1,000 cubic feet per second, year round. This project was originally authorized on the 5th PPL as BA-25. |
| Breaux Act | BA-26 (PBA-12b) | Barataria Bay Waterway East Side Shoreline Protection | SP | 6 | NRCS | Ullo | Wooton | Orl. Jef. | 217 | 2001 | $565,809 | $5,106,060 | $1,307,290 | $5,019,900 | $6,979,159 | This project will rebuild and stabilize the banks of the Dupre Cut section of the Barataria Bay Waterway (BBW) by installing an approximately 17,600 linear foot rock dike on the east bank of the BBW. This will protect the adjacent marsh from erosion due to boat wakes and saltwater intrusion. |
| Breaux Act | BA-27/27b (XBA-63/63ii) | Barataria Basin Landbridge Shoreline Protection, Phases 1 and 2 | SP | 7 and 8 | NRCS | Ullo, Dupre | Wooton, Pitre | Jef. Laf. | 1,304 | Pending | $1,826,285 | $14,069,446 | $1,694,259 | $17,515,029 | $17,589,990 | This project will protect a deteriorated intermediate to brackish marsh located between Lake Salvador and Little Lake by reducing shoreline erosion. Phase I and II of this project will provide 35,000 linear feet of shoreline protection along Bayous Perot and Rigolettes within the Barataria Basin. CU1 and CU 2 of the project have been constructed. |
| Breaux Act | BA-27c (XBA-63iii) | Barataria Basin Landbridge Shoreline Protection, Phase 3 | SP | 9 | NRCS | Ullo, Dupre | Wooton, Pitre | Jef. Laf. | 264 | Pending | $1,281,497 | $10,289,829 | $38,526 | $4,544,106 | $11,609,852 | Phase III of this project encompasses approximately 41,000 feet of shoreline protection. Approximately 26,000 feet of protection will be along the west bank of Bayou Perot and the north shore of Little Lake in Lafourche Parish. In Jefferson Parish, about 9,600 feet of the shoreline protection will be along the east bank of Bayou Rigolettes, and approximately 2,700 feet along each bank of Harvey Cutoff. CU2 has been constructed and CU3 is currently in construction. |
| Breaux Act | BA-27d | Barataria Basin Landbridge Shoreline Protection Phase 4 | SP | 11 | NRCS | Ullo | Wooton | Jef. | 334 | Pending | $2,713,954 | N/A | $25,806 | $2,191,807 | $2,739,760 | Phase IV of this project begins at the intersection of Bayou Rigolettes and Barataria Bay Waterway, and extends about 31,500 feet southward along the east bank of Bayou Rigolettes and ties into the northern limit of Phases I and II. |

| Program | State Project Number (Federal) | Project Name | Project Type | PPL | Agency/Sponsor | Senator | Representative | Parish | Acres Benefitted | Construction Completion Date | Engineering, Design, & Landrights Cost | Construction Cost | Operation, Maintenance, & Monitoring Cost | Baseline Cost Estimate | Current Cost Estimate | Project Summary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Breaux Act | BA-28 (XBA-1a-i) | Vegetative Plantings of a Dredged Material Disposal Site on Grand Terre Island | VP | 7 | NMFS | Ullo | Wooton | Jef. | 127 | 2001 | $177,330 | $496,328 | $209,575 | $928,895 | $883,233 | The objective of this project is to stabilize two different dredged material sites on Grand Terre Island including: (1) a 1996 USACE dredged disposal area that is completely devoid of vegetation, and (2) a future 80 acre dredged material platform. This will be achieved through development and implementation of a planting protocol to revegetate the disposal areas with native flora. Plantings began in May 2001, and monitoring has also recently begun. |
| Breaux Act | BA-29 (BA-32a) | LA Highway 1 Marsh Creation | MC | 9 | EPA | Dupre | Pitre | Laf. | 472 | Pending | $1,409,542 | N/A | $23,851 | $1,151,484 | $1,433,393 | The objective of this project is to create marsh habitat in a large open water area adjacent to Louisiana Highway 1 using dredged material from two proposed borrow areas. |
| Breaux Act | BA-30 (XBA-01a) | East/West Grand Terre Islands Restoration | BI MC | 9 | NMFS | Dean, Ullo | Wooton | Jef. | 472 | Pending | $2,280,777 | N/A | $31,246 | $1,856,203 | $2,312,023 | This project will restore East Grand Terre by creating 74 acres of dune and 212 acres of marsh habitat. The barrier shoreline of West Grand Terre will be restored by constructing 40 acres of dune from the Lyle St. Amant Laboratory to the U.S. Army Corps of Engineers disposal area. |
| Breaux Act | BA-31 (Complex Project) | Delta Building South of Empire | SD | 9 | USACE | Dean | Wooton | Plaq. | N/A | Pending | N/A | N/A | N/A | N/A | N/A | The objective of this project is to create marsh in open water areas south of Empire through the diversion and capture of fluvial sediment from the Mississippi River. Ultimately the project will relay sediment to the barrier shoreline enhancing the ability of these features to regenerate and stabilize. |
| Breaux Act | BA-32 (Complex Project) | Barrier Island Restoration Grande Terre to SW Pass | BI | 9 | NMFS | Dean | Wooton | Plaq | N/A | Pending | N/A | N/A | N/A | N/A | N/A | This project will restore 5 to 10 miles of barrier shoreline from Grand Terre to Sandy Point. A combination of sand, hard structures, and alternative materials will be considered. The project will also determine the feasibility of installing wave absorbers as proposed in the Barrier Island Feasibility Study, or similar protection along inland shorelines. This project was reauthorized as an 11th list project, Pelican Island and Pass La Mer to Chaland Pass, BA-38. |
| Breaux Act | BA-33 | Delta Building Diversion at Myrtle Grove | SD | 10 | USACE | Dean, Ullo | Wooton | Plaq. Jef. Laf. | 8,891 | Pending | $3,002,114 | N/A | $0 | $3,002,114 | $3,002,114 | This project is intended to create intermediate marsh in the northern portion of the project area, reduce land loss rates in the southern portion of the project area, and reduce average salinities throughout the majority of the project area. Several alternatives are being considered and modeled to build land in areas west of Myrtle Grove. |
| Breaux Act | BA-34 | Mississippi River Reintroduction Into Northwest Barataria Basin | FD | 10 | EPA | Lambert | Triche, Quezaire | StJo. Laf. | N/A | Pending | $2,314,925 | N/A | $47,762 | $1,899,834 | $2,362,687 | The project features include the gapping of spoil banks along Bayou Chevreuil, and the installation of two siphon pipes and vacuum pipes placed over the Mississippi River levee. This project will restore a natural hydrologic regime and add nutrients to cypress-tupelo swamp tracts. |
| Breaux Act | BA-35 | Pass Chaland to Grand Bayou Pass Barrier Shoreline Restoration | BI | 11 | NMFS | Dean | Wooton | Plaq. | 161 | Pending | $2,320,189 | N/A | $24,198 | $1,880,700 | $2,344,387 | This project will prevent the barrier island from breaching through the deposition of dredge material, the creation of tidal creeks and ponds, and vegetation plantings. This will provide a continued barrier to reduce wave and tidal energies, thereby protecting the mainland shoreline from continued erosion. |
| Breaux Act | BA-36 | Dedicated Dredging on the Barataria Basin Landbridge | MC | 11 | USFWS | Ullo | Wooton | Jef. | 564 | Pending | $2,839,798 | N/A | $28,215 | $2,294,410 | $2,868,013 | This project, in conjunction with the Barataria Basin Landbridge Shoreline Protection project (BA-27, BA-27c), will protect the functional integrity of this critical area of the Barataria Basin. This project will create emergent marsh through the deposition of dredged material into open water areas. |
| Breaux Act | BA-37 | Little Lake Shoreline Protection/ Dedicated Dredging Near Round Lake | SP MC | 11 | NMFS | Dupre | Pitre | Laf. | 713 | Pending | $3,176,276 | N/A | $23,816 | $2,639,536 | $3,200,092 | This project will protect area wetlands which currently experience high rates of shoreline erosion. This project will protect approximately 21,000 feet of Little Lake shoreline, create 488 acres of intertidal wetlands, and nourish an additional 532 acres of fragmented, subsiding marsh. |

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| Breaux Act | BA-38 | Pelican Island and Pass La Mer to Chaland Pass Restoration | BI | 11 | NMFS | Dean | Wooton | Plaq. | 322 | Pending | $3,575,197 | N/A | $65,862 | $3,083,934 | $3,641,059 | The project is intended to reduce erosion rates in the project area and create dune and marsh habitat. The project would entail the construction of a beach berm, a dune platform, and a marsh platform from Pass La Mer to Chaland Pass, and on Pelican Island. Additionally, sand fencing and vegetation plantings will be a part of this project. This project was originally authorized as a complex project on the 9th PPL, Barrier Island Restoration Grande Terre to SW Pass, BA-32. |
| Breaux Act | BA-39 | Mississippi River Sediment Delivery System | MC | 12 | EPA | Wooton | Dean | Jef. | 400 | Pending | $2,154,975 | N/A | $37,760 | $2,192,735 | $2,192,735 | This project envisions sediment delivery from the Mississippi River via dedicated dredging. A conduit for the dredge discharge pipe will be bored under LA Highway 23 and the Missouri Pacific railroad line to deliver sediment to the project area. Along with vegetation plantings, it is expected that these project features will create 570 acres of marsh and enhance existing land masses to ensure continuity of the Barataria Landbridge separating fresh and brackish marsh in the vicinity of Bayou Dupont and "The Pen". |
| Breaux Act | BS-03a (BS-03a) | Caernarvon Diversion Outfall Management | OM | 2 | NRCS | Dean | Wooton, Odinet | Plaq. | 802 | 2002 | $343,940 | $2,309,022 | $1,883,038 | $2,522,199 | $4,536,000 | This project was authorized to increase freshwater dispersion into interior marshes that are currently isolated from Caernarvon diversion flow during low discharge periods by incorporating culverts, plugs, and spoilbank restoration. Retention of freshwater within the brackish marsh should increase emergent marsh vegetation and diversity, reduce saltwater intrusion and salinity spikes, and increase the occurrence of submerged aquatic vegetation in shallow open water areas. |
| Breaux Act | BS-04a (BS-04a) | White's Ditch Outfall Management (Deauthorized) | OM | 3 | NRCS | Dean | Wooton | Plaq. | N/A | Deauth. | $25,341 | N/A | $7,521 | $756,134 | $32,862 | This project was designed to direct the flow of Mississippi River nutrients and sediment into the deteriorating wetlands in the Breton Sound Basin that are not directly benefitted by the Caernarvon Freshwater Diversion Project. Because of the failure to secure landrights, the project was officially deauthorized by the Breaux Act Task Force in January of 1998. |
| Breaux Act | BS-07 (PBS-06) | Grand Bay Crevasse (Deauthorized) | SD | 4 | USACE | Dean | Wooton | Plaq. | N/A | Deauth. | $61,187 | N/A | $3,327 | $2,468,908 | $64,515 | This project, located in Plaquemines Parish, was designed to rearrange 1,500 tons of rock at the head of the Jurgevich Canal, which would allow 20,000 cubic feet per second of freshwater to flow into the Grand Bay area. Deauthorization was implemented due to objections from the primary landowner. The project was officially deauthorized by the Breaux Act Task Force in July of 1998. |
| Breaux Act | BS-09 (PBS-1) | Upper Oak River Freshwater Siphon, Phase 1 (Deauthorized) | FD | 8 | NRCS | Dean | Wooton | Plaq. | 0 | Deauth. | $1,423,227 | $1,016,707 | $60,305 | $2,500,239 | $2,500,239 | The primary goal of this project was to reverse the trend of interior marsh deterioration in the project area due to saltwater intrusion through installation of a 1,000 cubic feet per second freshwater siphon and outfall channel. This would have provided freshwater, nutrients, and sediment to enhance marsh health. The project was officially deauthorized by the Breaux Act Task Force in January of 2003. |
| Breaux Act | BS-10 | Delta Building Diversion North of Fort St. Philip | SD | 10 | USACE | Dean | Wooton | Plaq. | 2,473 | Pending | $1,140,021 | N/A | $15,179 | $1,555,200 | $1,555,200 | The project consists of degrading an existing rock dike to -3 feet NAVD-88 in two places and constructing an armored conveyance channel through the east bank of the Mississippi River to deliver approximately 4,500 cubic feet per second of river water and sediment to the degraded marshes and open water areas between Bay Denesse and Fort St. Philip. |
| Breaux Act | BS-11 | Delta Management at Fort St. Philip | SD | 10 | USFWS | Dean | Wooton | Plaq. | 267 | Pending | $337,344 | $1,622,198 | $92,954 | $3,183,938 | $2,053,216 | This project, which includes the construction of terraces in open water habitat and the construction of 6 crevasses, is intended to increase the flow of freshwater and sediment into shallow, open water habitat, and to increase sedimentation and marsh building. |
| Breaux Act | MR-03 (FMR-03) | West Bay Sediment Diversion | SD | 1 | USACE | Dean | Wooton | Plaq. | 9,831 | 2003 | $1,345,755 | $4,627,152 | $16,339,854 | $8,517,066 | $22,312,761 | This project is an uncontrolled sediment diversion designed to create approximately 9,831 acres of fresh and intermediate marsh through the diversion and capture of fluvial sediment from the Mississippi River. This project was constructed in 2003. |

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| Breaux Act | MR-06 (XMR-10) | Channel Armor Gap Crevasse | SD | 3 | USACE | Dean | Wooton | Plaq. | 936 | 1997 | $253,486 | $241,720 | $393,778 | $808,397 | $888,985 | The objective of this project is to promote the formation of emergent freshwater marsh in place of a shallow, open water area by increasing the flow of sediment-laden river water into the receiving bay. Specific goals are to increase elevation and cover of emergent wetland vegetation in the project area. To date, preconstruction data regarding suspended sediment and river discharge, elevation, and land/water ratio have been collected. Although no sub-aerial land has formed in the project area after two years, shoals are evident in areas of the receiving bay nearest the crevasse. |
| Breaux Act | MR-07 (MR-8/9) | Pass-a-Loutre Crevasse (Deauthorized) | SD | 3 | USACE | Dean | Wooton | Plaq. | N/A | Deauth. | $108,114 | N/A | $11,743 | $2,857,790 | $119,857 | Marsh creation and restoration was the objective of this project. This was to be accomplished through construction of a crevasse on the left descending bank of the Mississippi River between Pass-a-Loutre and Raphael Pass. The project was officially deauthorized by the Breaux Act Task Force in July of 1998 due to high costs attributed to relocating underground utilities in the area. A suitable alternative site could not be found by the USACE. |
| Breaux Act | MR-08 (XMR-12) | Beneficial Use of Hopper Dredged Material Demonstration (Deauthorized) | DM | 4 | USACE | Dean | Wooton | Plaq. | N/A | Deauth. | $48,719 | N/A | $9,591 | $300,000 | $58,310 | This three-year demonstration was designed to utilize hopper dredged material to create emergent vegetated marsh in an area that is currently a shallow, open-water pond. More specifically, the goals are to create one acre of emergent vegetated marsh for every 15,000 cubic yards of dredged material deposited in the project area, increase mean elevation, and increase abundance of emergent wetland vegetation. Due to design problems, the project was officially deauthorized by the Breaux Act Task Force in November of 2000. |
| Breaux Act | MR-09a (PMR-10) | Delta Wide Crevasses | SD | 6 | NMFS | Dean | Wooton | Plaq. | 2,386 | 1999 | $278,034 | $471,360 | $3,983,259 | $5,473,934 | $4,732,653 | The project consists of maintaining presently existing crevasse-splays, the construction of new crevasse splays, and future maintenance of selected crevasse splays in both the Pass-A-Loutre Wildlife Management Area and the Delta National Wildlife Refuge. The objective is to promote the formation of emergent freshwater and intermediate marsh. To date, all crevasses have been dredged or re-dredged in accordance with the plan. |
| Breaux Act | MR-10 (XMR-12b) | Dustpan Maintenance Dredging Operations for Marsh Creation in the Mississippi River Delta Demonstration | DM | 6 | USACE | Dean | Wooton | Plaq. | N/A | 2002 | $128,000 | $1,729,303 | $46,000 | $1,600,000 | $1,903,303 | This project will use dredged material from routine maintenance of the Mississippi River Navigation Channel to create and restore adjacent marsh. Approximately 273 acres of deteriorated marsh will be restored with approximately 1.76 million cubic yards of dredged material over the course of three years. |
| Breaux Act | MR-11 (MR-DEMO) | Periodic Introduction of Sediment and Nutrients at Selected Diversion Sites Demonstration | FD | 9 | USACE | Dean | Wooton | Plaq. | N/A | Pending | $93,515 | $1,340,730 | $68,572 | $1,502,817 | $109,730 | This project will demonstrate the effectiveness of using a dredge to provide sediment input into a diversion structure, where monitoring would determine the characteristics of sediment input concentrations as well as effects in the outfall area. |
| Breaux Act | MR-12 | Mississippi River Sediment Trap | SNT | 12 | EPA | Dean | Wooton | Plaq. | 24,065 | Pending | $1,856,427 | N/A | $23,949 | $1,880,376 | $1,880,376 | This project was reauthorized on the 12th PPL to create emergent wetlands through the beneficial use of material dredged from a sediment trap located between miles 5 and 1 above Head of Passes in the Mississippi River. Following construction of the sediment trap, hydrodynamic forces will deposit sediment into the trap rather than further downstream in the river's multiple passes. This project is currently in the Phase I evaluation process. This project was originally authorized as a complex project on the 9th PPL. |
| Breaux Act | MR-13 | Benneys Bay Diversion | SD | 10 | USACE | Dean | Wooton | Plaq. | 5,828 | Pending | $1,047,083 | N/A | $29,245 | $1,076,328 | $1,076,328 | This project was authorized to create and/or preserve approximately 5,828 acres of marsh through the construction of a 50,000 cubic feet per second uncontrolled sediment diversion near mile 7.5 above Head of Passes of the Mississippi River. |

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| State | BA-03 | Naomi Diversion | FD | N/A | N/A | Dean,Ullo | Wooton | Jef. Plaq. | 1,318 | 1992 | N/A | N/A | N/A | N/A | $6,666,667 | This project involves the construction of eight parallel siphons to divert water from the Mississippi River, over the levee, and into the adjacent wetlands near Naomi, Louisiana. The maximum discharge of the siphons is 2,100 cubic feet per second, which will potentially deliver up to 150,000 cubic yards of river sediment into the wetlands annually. |
| State | BA-04 | West Pointe a la Hache | FD | N/A | N/A | Dean, Ullo | Wooton | Plaq. | 718 | 1992 | N/A | N/A | N/A | N/A | $6,081,800 | This project involves the construction of eight parallel siphons to divert water from the Mississippi River, over the levee, and into the adjacent wetlands on the west side of the river near Pointe a la Hache, Louisiana. The maximum discharge of the siphons is 2,100 cubic feet per second, which will potentially deliver up to 150,000 cubic yards of river sediment into the wetlands annually. |
| State | BA-05b | Queen Bess | DM | N/A | N/A | Ullo | Wooton | Jef. | 15 | 1990 | N/A | N/A | N/A | N/A | $161,250 | The purpose of this project was to restore Queen Bess Island as a brown pelican (*Pelecanus occidentalis* ) rookery. Dredged material was added to the island to increase its size in 1991, and a rock dike was installed around the perimeter of the original island in 1992 to armor the shoreline. Pelican nests continue to increase and the area has become vegetated. |
| State | BA-05c | Baie de Chactas | SP | N/A | N/A | Chaisson | Smith | StC. | 130 | 1990 | N/A | N/A | N/A | N/A | $175,000 | Approximately 300,000 pounds of crushed oyster shell was placed on 7,400 feet of shoreline to restore the physical integrity of the marsh shoreline separating Lake Salvador and Baie de Chactas and Baie du Cabanage. |
| State | BA-16 | Bayou Segnette | SP | N/A | N/A | Ullo | Wooton | Jef. | 88 | 1994, 1998 | N/A | N/A | N/A | N/A | $1,373,151 | This project armored and re-defined approximately 6,800 linear feet of shoreline separating Bayou Segnette from Lake Salvador. Maintenance of this project was necessary in financial year 1998-1999 at a cost of $300,000. |
| State | BS-06 | Violet Freshwater Distribution | FD | N/A | N/A | Dean | Odinet | StB. | 100 | 1997 | N/A | N/A | N/A | N/A | $1,000,000 | This project involved the construction of a pumping station located along the south-central edge of the St. Bernard Parish Ridge. This will discharge collected rainfall into the marsh north of Lake Lery and help prevent saltwater intrusion. The project was built in partnership with the Lake Borgne Basin Levee District and was completed in May of 1997. |
| State | | Grand Isle Bay Side Breakwaters | SP | N/A | N/A | Ullo | Pitre, Wooton | Jef. | 5 | 1995 | N/A | N/A | N/A | N/A | $500,000 | The purpose of this project was to reduce erosion on the bay side of Grand Isle. Fifteen 300-foot breakwaters were constructed on the back-bay side of Grand Isle. |
| State | | North Grand Isle Breakwaters | SP | N/A | N/A | Ullo | Pitre | Jef. | 50 | 1995 | N/A | N/A | N/A | N/A | $160,000 | This project was authorized to construct segmented rock breakwaters on the bay side of Grand Isle to protect camps located between Caminada Bay and the west side of Louisiana Hwy 1. The Louisiana Department of Natural Resources contributed no construction funds, and was involved in construction inspection only. The local Levee District supplied construction funds. Construction was completed in June 1995. |
| State | MR-01 | Small Sediment Diversions (10 projects) | SD | N/A | N/A | Dean | Wooton | Plaq. | 6,719 | 1986, 1991 | N/A | N/A | N/A | N/A | $1,010,500 | These projects, including MR-01, involve the construction of three new crevasses constructed in financial year 1986-1987 at South Pass, Loomis Pass, and Pass-a-Loutre; four new crevasses constructed as Pass-a-Loutre (1, 2, 3a, and 3b) in 1990-1991, and; three new crevasses created in South Pass (2, 3, and 4) in 1990-1991. |
| PCWRP | | Goose Bayou | SP | N/A | N/A | Ullo, Dean | Wooton | Jef. | 23 | 1991 | N/A | N/A | N/A | N/A | $324,500 | The brush fences were constructed to protect the shoreline and promote sediment accretion and vegetation growth at the shoreline. This project includes others at Bayou Cypress, Bayou LeFleur, and Bayou La Tour. Fences were originally constructed and filled in 1991 and maintenance was performed in 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, and 2001. |
| PCWRP | | Leeville #1 | SP | N/A | N/A | Dupre | Pitre | Laf. | 2 | 1991 | N/A | N/A | N/A | N/A | $74,438 | Brush fences were built in 1991 to promote sediment accretion along a canal adjacent to Louisiana Hwy 1 in Leeville, Louisiana, and maintenance was performed in 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, and 2003. |
| PCWRP | | Fourchon | SP | N/A | N/A | Dupre | Pitre | Laf. | 2 | 1991 | N/A | N/A | N/A | N/A | $76,438 | Brush fences were built in 1991 along a canal to prevent shoreline erosion, and maintenance was performed in 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, and 2003. |

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| PCWRP | | Eighty Arpent Canal | SP | N/A | N/A | Dean | Odinet | StB. | 7 | 1991, 1992 | N/A | N/A | N/A | N/A | $56,989 | Brush fences were constructed in 1991 and 1992 along Eighty Arpent Canal to promote sediment accumulation and minimize shoreline erosion along the shoreline. The fences were maintained in 1997. |
| PCWRP | | Bayou Lafourche | SP | N/A | N/A | Dupre | Pitre | Laf. | 1 | 1996 | N/A | N/A | N/A | N/A | $22,500 | Wave dampening fences were constructed along Bayou Lafourche to minimize shoreline erosion from boat-induced waves. Fences were originally constructed and filled in 1996 and maintenance was performed in 1997, 2000, 2001, and 2003. |
| PCWRP | | Whiskey Canal | SP | N/A | N/A | Ullo | Alario | Jef. | 2 | 1997 | N/A | N/A | N/A | N/A | $18,000 | Whiskey Canal is located north of Lake Cataouatche in Jefferson Parish. The brush fences were constructed to prevent erosion at the intersection of two canals. |
| PCWRP | | Bayou Bienvenue | SP | N/A | N/A | Dean | Odinet | StB. | 1 | 2001 | N/A | N/A | N/A | N/A | $18,000 | The construction of brush fences will slow water movement, trap sediment, and protect vegetation along Bayou Bienvenue. |
| PCWRP | | Bayou Segnette | SP | N/A | N/A | Ullo | Wooton | Jef. | 1 | 2001 | N/A | N/A | N/A | N/A | $33,000 | Approximately 45,000 Christmas trees were placed in an area between Bayou Segnette and Lake Salvador in order to slow water flow and provide additional wildlife and fisheries habitat. |
| PCWRP | | Bayou Gauche | SP | N/A | N/A | Chaisson | Smith | StC. | 2 | 2001 | N/A | N/A | N/A | N/A | $27,000 | Approximately 50 feet of brush fence were constructed along Bayou Gauche, near the intersection of Grand Bayou and Simoneaux Ponds, in order to slow water exchange and reduce shoreline erosion. Maintenance was performed in 2003. |
| PCWRP | | Catfish Lake | SP | N/A | N/A | Dupre | Pitre | Laf. | 1 | 2001 | N/A | N/A | N/A | N/A | $20,500 | Approximately 400 feet of brush fencing were constructed along the bank of Catfish Lake, just west of Golden Meadow, in order to stabilize that particular section of the hurricane protection levee. Maintenance was performed in 2003. |
| Vegetation | | Salvador WMA | VP | N/A | N/A | Chaisson | Smith | StC. | 7 | 1988 | N/A | N/A | N/A | N/A | $46,460 | A total of 900 smooth cordgrass (*Spartina alterniflora* ) plants, 900 cattail (*Typha latifolia* ) plants, and 900 California bulrush (*Schoenoplectus californicus* ) plants were used to stabilize the bank behind newly constructed wave-dampening devices. |
| Vegetation | | Clovelly | VP | N/A | N/A | Dupre | Pitre | Laf. | 111 | 1988 | N/A | N/A | N/A | N/A | $21,626 | A total of 24,000 smooth cordgrass (*Spartina alterniflora* ) plants were used along 48,000 linear feet of shoreline to minimize shoreline erosion. |
| Vegetation | | Kings Ridge | VP | N/A | N/A | Dupre | Pitre | Laf. | 1 | 1989, 1990, 1991, 1994, 2001 | N/A | N/A | N/A | N/A | $52,604 | A total of 1,345 smooth cordgrass (*Spartina alterniflora* ) plants were used to provide a living natural barrier for protection against wave-induced shoreline erosion. |
| Vegetation | | Queen Bess Island | VP | N/A | N/A | Ullo | Wooton | Jef. | 9 | 1991, 1993, 1997, 2000 | N/A | N/A | N/A | N/A | $10,970 | A total of 688 smooth cordgrass (*Spartina alterniflora* ) plants and 930 black mangrove (*Avicennia germinans* ) trees were used on the island to provide soil stability on the edges of the soil disposal area and to enhance wildlife habitat. |
| Vegetation | | Bayou LaTour | VP | N/A | N/A | Ullo | Wooton | StC. | 24 | 1991 | N/A | N/A | N/A | N/A | $29,804 | A total of 10,550 smooth cordgrass (*Spartina alterniflora* ) plants were used in a single row on 1-foot centers to stabilize the bank behind newly constructed wave dampening devices. |
| Vegetation | | Myrtle Grove | VP | N/A | N/A | Dean | Wooton | Plaq. | 48 | 1991, 1996, 2001 | N/A | N/A | N/A | N/A | $53,558 | A total of 14,390 smooth cordgrass (*Spartina alterniflora* ) plants and 1,340 marshhay cordgrass (*Spartina patens* ) plants were used to vegetate an area on the uppermost part of a protection levee. |
| Vegetation | | Red Pass/ Spanish Pass | VP | N/A | N/A | Dean | Wooton | Plaq. | 21 | 1991, 1996 | N/A | N/A | N/A | N/A | $19,820 | California bulrush (*Schoenoplectus californicus* ), smooth cordgrass (*Spartina alterniflora* ), giant cutgrass (*Zizaniopsis miliacea* ), and bald cypress (*Taxodium distichum* ) seedlings were used on these islands to provide diverse habitat for wildlife, and to form a vegetation buffer along several deteriorating islands. |

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| Vegetation | | Bay L' Ours | VP | N/A | N/A | Dupre | Pitre | Laf. | 46 | 1991 | N/A | N/A | N/A | N/A | $28,250 | A total of 10,000 smooth cordgrass ( *Spartina alterniflora* ) plants were used to provide stabilization behind a recently constructed wave dampening device. |
| Vegetation | | Goose Bayou | VP | N/A | N/A | Ullo | Wooton | Jef. | 28 | 1992 | N/A | N/A | N/A | N/A | $20,340 | Approximately 4,000 smooth cordgrass ( *Spartina alterniflora* ) plants were used behind sediment fences and Christmas tree fences along Bayou LaTour to help stabilize new sediment. |
| Vegetation | | Lake Salvador | VP | N/A | N/A | Chaisson, Dupre | Smith, Wooton | Laf. | 11 | 1992, 1999 | N/A | N/A | N/A | N/A | $6,780 | A total of 1,000 giant cutgrass (*Zizaniopsis miliacea* ) were planted to establish vegetation along a section of eroded coast. |
| Vegetation | | Temple Bay | VP | N/A | N/A | Chaisson | Wooton | Laf. | 9 | 1992 | N/A | N/A | N/A | N/A | $5,424 | A total of 800 smooth cordgrass ( *Spartina alterniflora* ) plants were used to stabilize a spoil bank behind a wave-reduction fence. |
| Vegetation | | Bayou DuPont | VP | N/A | N/A | Ullo, Dean | Wooton | Plaq. | 20 | 1992, 1998, 1999 | N/A | N/A | N/A | N/A | $14,526 | A total of 2,022 smooth cordgrass ( *Spartina alterniflora* ) plants, 800 California bulrush (*Schoenoplectus californicus* ) plants, and 500 giant cutgrass ( *Zizaniopsis miliacea* ) plants were used along the shoreline to stabilize the bank of Bayou DuPont . |
| Vegetation | | Round Lake | VP | N/A | N/A | Dean | Wooton | Plaq. | 4 | 1992 | N/A | N/A | N/A | N/A | $4,435 | A total of 250 seashore paspalum ( *Paspalum vaginatum* ) plants and 1,320 smooth cordgrass (*Spartina alterniflora* ) plants were used to prevent erosion along the shoreline of Round Lake. |
| Vegetation | | Yellow Cotton Bay | VP | N/A | N/A | Dean | Wooton | Plaq. | 6 | 1992 | N/A | N/A | N/A | N/A | $6,144 | A total of 1,875 smooth cordgrass ( *Spartina alterniflora* ) plants and 300 seashore paspalum ( *Paspalum vaginatum* ) plants were used to stabilize the shoreline of a pipeline canal that runs east to west. |
| Vegetation | | Lake Hermitage | VP | N/A | N/A | Dean | Wooton | Plaq. | 2 | 1993 | N/A | N/A | N/A | N/A | $1,068 | A total of 110 seashore paspalum ( *Paspalum vaginatum* ) plants and 100 smooth cordgrass ( *Spartina alterniflora* ) plants were used to plant vegetation behind a wave reduction fence for ground stabilization. |
| Vegetation | | Lake Lery/ Eighty Arpent Canal | VP | N/A | N/A | Dean | Odinet | StB. | 11 | 1993, 1998 | N/A | N/A | N/A | N/A | $6,780 | A total of 1,000 smooth cordgrass ( *Spartina alterniflora* ) plants were used to block openings to small lagoons and provide a protective barrier along the Eighty Arpent Canal. |
| Vegetation | | Lake Laurier | VP | N/A | N/A | Dean | Wooton | Plaq. | 2 | 1993 | N/A | N/A | N/A | N/A | $1,068 | A total of 110 seashore paspalum ( *Paspalum vaginatum* ) plants and 100 smooth cordgrass ( *Spartina alterniflora* ) plants were used behind a wave-reduction fence to help stabilize sediment. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vegetation | | Little Lake Hunting Club | VP | N/A | N/A | Ullo | Wooton | Jef. | 165 | 1994, 1996 | N/A | N/A | N/A | N/A | $134,244 | A total of 2,400 smooth cordgrass (*Spartina alterniflora* ) plants, 12,000 marshhay cordgrass *(Spartina patens* ) plants, and 12,000 gulf cordgrass plants ( *Spartina spartinae* ) were used to stabilize the levee and protect the shoreline at the base of the levee. |
| Vegetation | | West Pointe a la Hache | VP | N/A | N/A | Dean | Wooton | Plaq. | 6 | 1994 | N/A | N/A | N/A | N/A | $3,526 | A total of 400 smooth cordgrass (*Spartina alterniflora* ) plants and 120 California bulrush (*Schoenoplectus californicus* ) plants were used to reduce the effects of wave energy on several deteriorating spoil banks in a brackish marsh, to trap sediment in the same area, and to establish freshwater vegetation in the immediate outfall area of the West Pointe a la Hache freshwater siphon. |
| Vegetation | | LaReussite | VP | N/A | N/A | Dean | Wooton | Plaq. | 3 | 1994 | N/A | N/A | N/A | N/A | $1,695 | A total of 250 smooth cordgrass (*Spartina alterniflora* ) plants were used to establish marsh vegetation and trap sediment in the marsh receiving the outfall from the LaReussite freshwater siphon. |
| Vegetation | | Fourchon | VP | N/A | N/A | Dupre | Pitre | Laf. | 29 | 1995 | N/A | N/A | N/A | N/A | $14,408 | A total of 1,250 smooth cordgrass (*Spartina alterniflora* ) plants and 1,500 black mangrove (*Avicennia germinans* ) trees were used to protect and stabilize mud flats, protect the shoreline from erosion by high energy tidal currents, and improve wildlife habitat diversity. |
| Vegetation | | Bayou Lafourche Shore | VP | N/A | N/A | Dupre | Pitre | Laf. | 37 | 1995 | N/A | N/A | N/A | N/A | $21,696 | A total of 3,200 giant cutgrass (*Zizaniopsis miliacea* ) plants were used along the shoreline of Bayou Lafourche to provide a living barrier against wave-induced shoreline erosion. |
| Vegetation | | Big Mar | VP | N/A | N/A | Dean | Wooton | Plaq. | 21 | 1995, 1998 | N/A | N/A | N/A | N/A | $7,458 | A total of 500 California bulrush (*Schoenoplectus californicus* ) plants and 600 giant cutgrass (*Zizaniopsis miliacea* ) plants were used to establish emergent freshwater vegetation in the immediate outfall area of the Caernarvon Freshwater Diversion project. |
| Vegetation | | Scarsdale | VP | N/A | N/A | Dean | Wooton | Plaq. | 30 | 1995, 1998 | N/A | N/A | N/A | N/A | $8,475 | A total of 1,000 bald cypress (*Taxodium distichum* ) trees and 500 California bulrush (*Schoenoplectus californicus* ) plants were used to re-introduce vegetation that was historically known to occur in this area. |
| Vegetation | | Belair | VP | N/A | N/A | Dean | Wooton | Plaq. | 7 | 1995 | N/A | N/A | N/A | N/A | $3,390 | A total of 500 smooth cordgrass (*Spartina alterniflora* ) plants were used to vegetate a low canal levee for protection against wave-induced shoreline erosion. |
| Vegetation | | Clovelly Farm | VP | N/A | N/A | Dupre | Pitre | Laf. | 1 | 1996 | N/A | N/A | N/A | N/A | $814 | A total of 120 California bulrush (*Schoenoplectus californicus* ) plants were used to absorb boat-generated wave energy and provide a seed source for re-vegetation |
| Vegetation | | Bayou Segnette | VP | N/A | N/A | Ullo | Damico | Jef. | 9 | 1997 | N/A | N/A | N/A | N/A | $5,085 | A total of 375 California bulrush (*Schoenoplectus californicus* ) plants and 375 giant cutgrass (*Zizaniopsis miliacea* ) plants were used to protect a levee on Bayou Segnette from wave-induced erosion. |
| Vegetation | | Simoneaux Ponds | VP | N/A | N/A | Chaisson | Smith | StC. | 20 | 1997, 2000, 2002 | N/A | N/A | N/A | N/A | $11,526 | A total of 1,700 California bulrush (*Schoenoplectus californicus* ) plants were used in open bodies of water to reduce fetch and to reduce the rate of shoreline erosion. |
| Vegetation | | Lake Lery Shoreline | VP | N/A | N/A | Dean | Odinet | StB. | 23 | 1997, 1998 | N/A | N/A | N/A | N/A | $13,560 | A total of 1,000 California bulrush (*Schoenoplectus californicus* ) plants and 1,000 giant cutgrass (*Zizaniopsis miliacea* ) plants were used along the Lake Lery shoreline to reduce shoreline erosion and vegetate predominately bare silt deposits. |

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| Vegetation | | Sebastopol Canal | VP | N/A | N/A | Dean | Odinet | StB. | 2 | 1997 | N/A | N/A | N/A | N/A | $1,017 | A total of 150 California bulrush (*Schoenoplectus californicus* ) plants were used to prevent erosion along Sebastopol Canal. |
| Vegetation | | Cane Ridge Slough | VP | N/A | N/A | Dean | Wooton | Plaq. | 8 | 1997 | N/A | N/A | N/A | N/A | $4,746 | A total of 700 California bulrush (*Schoenoplectus californicus* ) plants were used along a deteriorating canal bank to prevent boat-wake induced erosion from causing breaches into an adjacent interior marsh. |
| Vegetation | | Delacroix Corp. | VP | N/A | N/A | Dean | Wooton | Plaq. | 11 | 1997 | N/A | N/A | N/A | N/A | $6,780 | A total of 500 California bulrush (*Schoenoplectus californicus* ) plants and 500 giant cutgrass (*Zizaniopsis miliacea* ) plants were used to provide a buffer along areas of the Delacroix Canal in Plaquemines Parish, where boat traffic is causing the banks to erode into the adjacent marsh. |
| Vegetation | | Bayou des Allemands | VP | N/A | N/A | Chaisson | Smith | StC. | 15 | 1998, 2000 | N/A | N/A | N/A | N/A | $8,814 | A total of 150 California bulrush (*Schoenoplectus californicus* ) plants and 150 giant cutgrass (*Zizaniopsis miliacea* ) plants were used on approximately 1,500 feet of shoreline to prevent shoreline erosion. |
| Vegetation | | Elmers Island | VP | N/A | N/A | Ullo | Pitre | Jef. | 15 | 1998, 2001 | N/A | N/A | N/A | N/A | $18,358 | After the construction of sand fences for dune building purposes, a total of 300 marshhay cordgrass (*Spartina patens* ) plants and 1,015 bitter panicum ( *Panicum amarum* ) plants were used around the fence to prevent the new sand from being eroded by winds. |
| Vegetation | | Port Fourchon '98 | VP | N/A | N/A | Dupre | Pitre | Laf. | 23 | 1998 | N/A | N/A | N/A | N/A | $13,560 | A total of 1,000 bitter panicum ( *Panicum amarum* ) plants were used to stabilize sand dunes that were created by newly constructed sand-trapping fence segments. |
| Vegetation | | Bay Joe Wise | VP | N/A | N/A | Dean | Wooton | Plaq. | 9 | 1998 | N/A | N/A | N/A | N/A | $2,712 | A total of 400 nursery-grown black mangrove (*Avicennia germinans* ) trees were planted to provide habitat for various bird species. |
| Vegetation | | Clovelly Levee | VP | N/A | N/A | Dupre | Pitre | Laf. | 34 | 1999 | N/A | N/A | N/A | N/A | $20,340 | A total of 3,000 giant cutgrass (*Zizaniopsis miliacea* ) plants were used to provide a vegetation buffer along a hurricane protection levee which has eroded due to boat traffic. |
| Vegetation | | Delacroix '99 | VP | N/A | N/A | Dean | Wooton | Plaq. | 14 | 1999 | N/A | N/A | N/A | N/A | $8,475 | A total of 1,250 giant cutgrass (*Zizaniopsis miliacea* ) plants were used along areas of the Delacroix Canal to create a vegetative buffer and decrease shoreline erosion due to boat traffic. |
| Vegetation | | Ollie Canal Pump-off | VP | N/A | N/A | Dean | Wooton | Plaq. | 14 | 1999 | N/A | N/A | N/A | N/A | $8,475 | California bulrush (*Schoenoplectus californicus* ) plants were used in an old pump-off in order to re-vegetate the area and decrease flooding. |
| Vegetation | | Burchell Canal | VP | N/A | N/A | Chaisson | Smith | StC. | 2 | 2000 | N/A | N/A | N/A | N/A | $1,356 | A total of 100 California bulrush (*Schoenoplectus californicus* ) plants and 100 giant cutgrass (*Zizaniopsis miliacea* ) plants were used to create a vegetation buffer on the canal bank and to reduce the erosion caused by both wind-generated wave energy and frequent boat traffic. This bank separates the canal from the Simoneaux Ponds. |
| Vegetation | | Port Sulphur | VP | N/A | N/A | Dean | Wooton | Plaq. | 9 | 2000 | N/A | N/A | N/A | N/A | $5,424 | A total of 800 black mangrove (*Avicennia germinans* ) trees were planted to provide cover for nesting bird populations. |

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| Vegetation | | Reggio Canal | VP | N/A | N/A | Dean | Wooton | Plaq. | 21 | 2000 | N/A | N/A | N/A | N/A | $12,204 | A total of 1,000 giant cutgrass (*Zizaniopsis miliacea* ) plants and 800 California bulrush (*Schoenoplectus californicus* ) plants were used on the canal bank to reduce the erosion caused by both boat traffic and wind-generated wave energy. |
| Vegetation | | Bayou Mandeville | VP | N/A | N/A | Dean | Wooton | Plaq. | 16 | 2001 | N/A | N/A | N/A | N/A | $9,993 | A total of 1,400 giant cutgrass (*Zizaniopsis miliacea* ) plants were placed along Bayou Mandeville, between Big Mar and Lake Lery, to protect a newly created spoil bank from shoreline erosion. |
| Vegetation | | Barataria Bay Waterway Pump-in | VP | N/A | N/A | Ullo | Wooton | Jef. | 11 | 2001 | N/A | N/A | N/A | N/A | $9,058 | A total of 2,571 smooth cordgrass (*Spartina alterniflora* ) plants were placed to introduce additional vegetation in a wetland adjacent to the Barataria Bay Waterway, approximately 3 miles south of Lafitte. |
| Vegetation | | East Golden Meadow | VP | N/A | N/A | Dupre | Pitre | Laf. | 23 | 2001 | N/A | N/A | N/A | N/A | $16,048 | A total of 2,000 smooth cordgrass (*Spartina alterniflora* ) plants were placed south of the Bayou L'ours Ridge to protect the shoreline against wind and boat-generated wave energy. |
| Vegetation | | Deer Range Canal | VP | N/A | N/A | Dean | Wooton | Plaq. | 17 | 2001 | N/A | N/A | N/A | N/A | $7,558 | A total of 5,257 smooth cordgrass (*Spartina alterniflora* ) plants were placed to decrease the rate of erosion on a section of Deer Range Canal, located east of Lake Laurier. |
| Vegetation | | Barataria Bay Waterway | VP | N/A | N/A | Ullo | Wooton | Jef. | N/A | 2001 | N/A | N/A | N/A | N/A | $5,000 | A total of 1,000 California bulrush (*Schoenoplectus californicus* ) plants were placed on the shoreline of Barataria Bay Waterway, just south of Lafitte near Bayou Dupre, to re-establish vegetation and facilitate marsh growth in an area that has experienced a high rate of subsidence. |
| Vegetation | | Queen Bess Marsh Restoration | VP | N/A | N/A | Ullo | Wooton | Jef. | 11 | 2002 | N/A | N/A | N/A | N/A | $8,000 | This interior marsh planting used 2,000 bare root plugs of smooth cordgrass (*Spartina alterniflora* ) to re-establish vegetation after a dieback in 2000; 5,000 linear feet of interior marsh were planted. |
| Vegetation | | Grand Isle Demo | VP | N/A | N/A | Ullo | Wooton | Jef. | 7 | 2002 | N/A | N/A | N/A | N/A | $6,000 | This beach planting used 1,000 four-inch containers of bitter panicum ( *Panicum amarum* ) to create a vegetative mat to hold and collect sand on the beach; 3,000 linear feet were planted. |
| Vegetation | | Jonathan Davis Demo | VP | N/A | N/A | Ullo | Wooton | Jef. | 1 | 2002 | N/A | N/A | N/A | N/A | $4,500 | This demonstration project used 500 feet of coconut fiber logs vegetated with 500 giant cutgrass bare root plugs ( *Zizaniopsis miliacea* ) to recreate some of the land that at one time separated Bayou Perot and Bayou Rigolettes; 750 linear feet of interior marsh were planted. |
| Vegetation | | Bayou Mandeville | VP | N/A | N/A | Dean | Wooton | Plaq. | 16 | 2002 | N/A | N/A | N/A | N/A | $11,200 | This canal bank planting used 1,400 trade gallon containers of giant cutgrass (*Zizaniopsis miliacea* ) to vegetate a newly created spoil bank along Bayou Mandeville; 7,000 linear feet of canal bank were planted. |
| Vegetation | | Reggio 2002 | VP | N/A | N/A | Dean | Wooton | Plaq. | 14 | 2002 | N/A | N/A | N/A | N/A | $9,600 | This canal bank planting used 1,200 trade gallon containers of California bulrush (*Schoenoplectus californicus* ) to establish vegetation along the canal bank that was dredged in the summer of 2001; 6,000 linear feet of canal bank were planted. |
| Vegetation | | Bayou L' ours Embankment Enhancement | VP | N/A | N/A | Dupre | Pitre | Laf. | 11 | 2003 | N/A | N/A | N/A | N/A | $15,360 | A total of 1,920 trade gallon containers of smooth cordgrass ( *Spartina alterniflora* ) were planted to establish vegetation along a canal bank. |
| Vegetation | | North Little Lake/South Bayou Perot Demo | VP | N/A | N/A | Dupre | Pitre | Laf. | 12 | 2003 | N/A | N/A | N/A | N/A | $9,500 | A total of 1,000 trade gallon containers of California bulrush ( *Schoenoplectus californicus* ) and 300-feet of coconut fiber mats impregnated with giant cutgrass (*Zizaniopsis miliacea* ) were placed along the southern end of Bayou Perot to asses the possibility of vegetating the areas behind the shoreline protection structures. |
| Vegetation | | Pelican Island | VP | N/A | N/A | Dean | Wooton | Plaq. | 8 | 2003 | N/A | N/A | N/A | N/A | $6,400 | A total of 800 containers of bitter panicum ( *Panicum amarum* ) and 200 units of sea oats (*Uniola paniculata* ) were planted to stabilize the sandy areas of Pelican Island and aid in the collection of new sand deposits. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vegetation | | Shell Island Bay | VP | N/A | N/A | Dean | Wooton | Plaq. | 18 | 2003 | N/A | N/A | N/A | N/A | $4,800 | A total of 800 black mangroves (*Avicennia germinans* ) were planted on Shell Island to enhance wildlife habitat and stabilize soils. |
| Vegetation | | Bayou Dupont Pump-in | VP | N/A | N/A | Ullo | Wooton | Jef. | 9 | 2003 | N/A | N/A | N/A | N/A | $7,500 | A total of 1,500 bare root plugs of smooth cordgrass ( *Spartina alterniflora* ) and 300-feet of smooth cordgrass impregnated coconut fiber logs were planted in order to vegetate a newly created spoil area and protect the embankment. |
| Vegetation | | Salvador Eastern Shoreline | VP | N/A | N/A | Ullo | Wooton | Jef. | 9 | 2003 | N/A | N/A | N/A | N/A | $6,400 | A total of 800 trade gallon containers of California bulrush ( *Schoenoplectus californicus* ) were planted to protect a rapidly eroding marsh area. |
| Section 204/1135 | | Barataria Bay Waterway, Grand Terre Island (Phase I) | DM | N/A | N/A | Ullo | Wooton | Jef. | 115 | 1996 | N/A | N/A | N/A | N/A | $1,370,000 | This Section 204 project provides for the beneficial placement of 500,000 cubic yards of dredged material from Barataria Bay Waterway to create wetlands on Grand Terre Island. Construction was completed in December of 1996. |
| Section 204/1135 | | Barataria Bay Waterway, Mile 31 to 24.5 | DM | N/A | N/A | Ullo | Wooton | Jef. | 125 | 1999 | N/A | N/A | N/A | N/A | $140,000 | This Section 204 project utilized dredged material from between miles 31 and 24.5 of the Barataria Bay Waterway to create marsh habitat. Construction was completed in September of 1999. |
| Section 204/1135 | | Barataria Bay Waterway, Grand Terre Island (Phase II) | DM | N/A | N/A | Ullo | Wooton | Jef. | 80 | 1999, 2002 | N/A | N/A | N/A | N/A | $100,000 | This Section 204 project provided for the beneficial placement of 500,000 cubic yards of material dredged from Barataria Bay Waterway to create wetlands on the bay side of Grand Terre Island. Construction was completed in September of 1999. |
| WRDA | BS-08 | Caernarvon Freshwater Diversion | FD | N/A | USACE | Chaisson | Wooton | Plaq. | 18,200 | 1991 | N/A | N/A | N/A | N/A | $24,818,800 | This project diverts freshwater and its accompanying nutrients and sediment from the Mississippi River to coastal bays and marshes in Breton Sound for fish and wildlife enhancement. |
| WRDA | BA-01 | Davis Pond Freshwater Diversion | FD | N/A | USACE | Dean | Smith | StC. | 33,000 | 2001 | N/A | N/A | N/A | N/A | $106,000,000 | The purpose of this project is to maintain and enhance the existing ecological framework of the Barataria Basin by providing freshwater, nutrients, and sediment. This will counter saltwater intrusion and help offset marsh subsidence. |
| Dedicated Dredging Program | LA-01 | Lake Salvador | DM | N/A | LDNR | Chaisson | Smith | StC. | 28 | 1999 | N/A | N/A | N/A | N/A | $342,276 | Two sites were filled utilizing dredged material adjacent to Baie du Cabanage on the Salvador Wildlife Management Area. Final inspection was held in June of 1999. This project is part of the coastwide state Dedicated Dredging Program. The goal of this program is to use a small, mobile hydraulic dredge along inland waterways in Louisiana's coastal zone to deposit dredged material, and thereby nourish and/or rebuild threatened coastal marshes adjacent to the waterways. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dedicated Dredging Program | LA-01 | Jefferson Parish Wetlands Project | DM | N/A | LDNR | Ullo, Dupre | Wooton, Baldone, Pitre | Jef. | 66 | 2000 | N/A | N/A | N/A | N/A | $1,080,017 | Three sites were filled utilizing dredged material adjacent to Bayou Dupont and The Pen. This project is part of the coastwide state Dedicated Dredging Program. The goal of this program is to use a small, mobile hydraulic dredge along inland waterways in Louisiana's coastal zone to deposit dredged material, and thereby nourish and/or rebuild threatened coastal marshes adjacent to the waterways. |
| Other | | Fifi Island Restoration Project | SP | N/A | N/A | Ullo | Wooton | Jef. | 100 | 2003 | N/A | N/A | N/A | N/A | $3,000,000 | Approximately 100 acres of existing island (Grand Isle & Fifi Island) will be protected by the installation of approximately 10,000 linear feet of rock shore protection. |
| Other | | Fisheries Habitat Restoration on West Grand Terre Island | SP | N/A | N/A | Ullo | Wooton | Jef. | 35 | 2003 | N/A | N/A | N/A | N/A | $1,971,816 | This project consists of a rock dike built to conserve the Gulf shoreline of West Grand Terre Island and protect Fort Livingston. As a result of tropical storm systems in 2002, the erosion rates along West Grand Terre Island greatly accelerated. The construction of this project was expedited for the protection of Fort Livingston on West Grand Terre Island. Fort Livingston, which is listed on the National Register of Historic Places, was constructed in the 19th century by the U. S. Army Corps of Engineers as part of the nation's coastal defense system. |



Program: Breaux Act=Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA); State=Restoration projects funded primarily by the State of Louisiana through the Coastal Restoration Division; PCWRP=Parish Coastal Wetlands Restoration Program (Christmas Tree Program); Vegetation=DNR/NRCS/SWCC Vegetation Planting Program; Section 204/1135= Water Resource Development Act Sections 204 and 1135 beneficial use of dredged material projects; WRDA=Water Resources Development Act; Mitigation=mitigation projects implemented by the Coastal Restoration Division; Dedicated Dredging Program= State project LA-01 (see Table 5).

Project Type: HR=Hydrologic Restoration; DM=Beneficial Use of Dredged Material; MM=Marsh Management; MC=Marsh Creation; SP=Shoreline Protection; FD=Freshwater Diversion; VP=Vegetation Planting; SNT=Sediment and Nutrient Trapping; OM=Outfall Management; BI=Barrier Island; SD=Sediment Diversion.

PPL: Priority Project List (as authorized each year by the Breaux Act Task Force).

Agency/Sponsor: EPA=Environmental Protection Agency; NMFS=National Marine Fisheries Service; NRCS=Natural Resources Conservation Service; NWRC=National Wetlands Research Center; USFWS=U.S. Fish and Wildlife Service; USACE=U.S. Army Corps of Engineers.

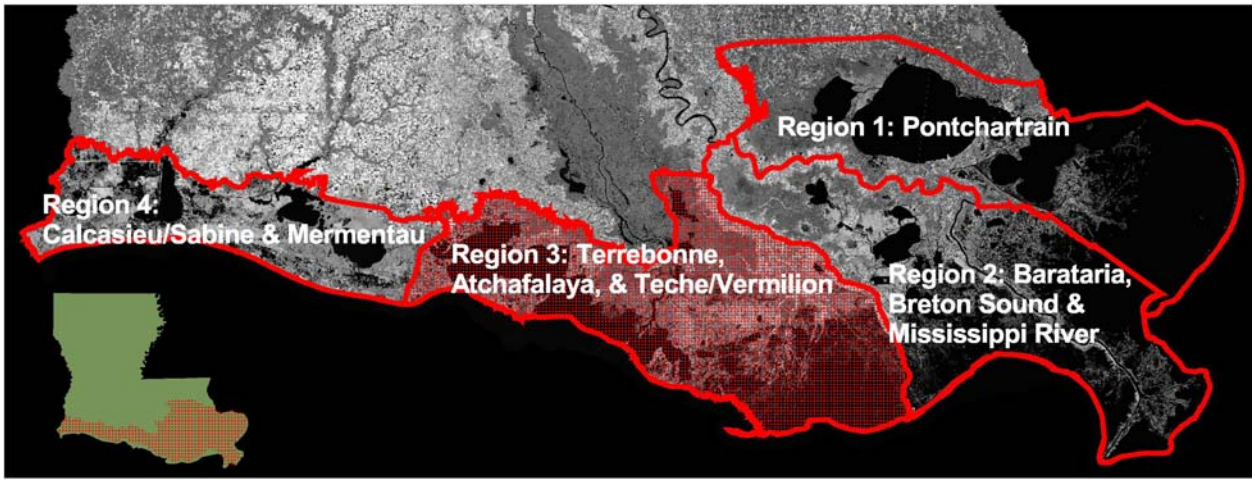
Parish: Asc.=Ascension, Asu.=Assumption, Cam.=Cameron, Ibe.=Iberia, Jef.=Jefferson, Laf.=Lafourche, Orl.=Orleans, Plaq.=Plaquemines, StB.=St. Bernard, StC.=St. Charles, StJo.=St. John the Baptist, StM.=St. Mary, StT.=St. Tammany, Tan.=Tangipahoa, Ter.=Terrebonne, Ver.=Vermilion.

Anticipated Acres Benefitted: N/A for Breaux Act demonstration and deauthorized projects.

Baseline Cost Estimates and Current Cost Estimates for Breaux Act projects are from the USACE. Costs for other restoration programs are from DNR's Contract and Budget Section. Baseline Cost and Current Cost Estimate both include contingency funds. Beginning with Breaux Act PPL 10, project costs are for Phase I only. Vegetation program project costs are estimated based on plant size and quantity.

N/A=Not Applicable.

# REGION 3




## INTRODUCTION

Region 3 encompasses the Terrebonne, Atchafalaya, and Teche-Vermilion basins. It extends from Bayou Lafourche on the east, to Freshwater Bayou on the west, and south from the Gulf of Mexico to the boundary of coastal wetlands on the north. It covers all or part of the following parishes: Lafourche, Terrebonne, Assumption, Iberville, St. Martin, Iberia, St. Mary, Lafayette, and Vermilion.

This region covers 1,140,450 acres of vegetated wetlands. These wetlands are classified as approximately 368,550 acres of cypress and bottomland forests, 298,300 acres of fresh marshes, 92,700 acres of intermediate marshes, 240,700 acres of brackish marshes, and 140,200 acres of saline marshes.

Estimates of land loss from Region 3 indicate that between 1990 and 2000, a total of 46,976 acres of wetlands have been lost (an average of 4,672 acres per year).

The central and eastern portions of the Terrebonne Basin have experienced extensive losses of fresh and brackish marshes. Altered hydrology and an intermediate to high natural subsidence rate have led to excessive flooding in these wetlands, which impairs plant health and productivity and ultimately results in marsh loss. Shoreline erosion along the fringes of bays and large lakes has also contributed to the basin's significant land loss. Wetland loss in the western portion of the Terrebonne Basin is less severe, and is primarily attributed to excessive marsh inundation and ponding of water.

The Atchafalaya Basin includes Atchafalaya Bay and adjacent marshes to the north. This is a very important area for wildlife because it is the site of active delta building, which naturally builds new habitat. This area includes the Wax Lake Delta, the Atchafalaya River delta, and the "Jaws", a smaller delta.

The Teche/Vermilion Basin extends from Point Chevreuil to Freshwater Bayou and includes the fresh to brackish East and West Cote Blanche bays and Vermilion Bay.

Throughout Region 3, shoreline erosion has been severe along large lakes and bays. Generally, there is support both from parish governments and the public in Region 3 to maintain present habitats in areas above the GIWW, and restore habitats in areas below the GIWW.

Coast 2050 identified specific ecosystem strategies for protecting and sustaining the region's coastal resources.

These specific ecosystem strategies can be grouped into one of the following five general categories: restoring swamps; restoring and sustaining marshes; protecting bay, lake, and Gulf shorelines; restoring barrier islands; and maintaining brackish conditions in the Vermilion, West Cote Blanche, East Cote Blanche bay complex, while reducing turbidity and sedimentation.

**PROJECT INFORMATION**

A total of 148 restoration projects have been authorized for Region 3 (Table 3). Project specific information is presented below, organized by project funding source.

*Breaux Act*

A total of 47 projects have been authorized under the direction of the Breaux Act in Region 3, which are anticipated to benefit 20,328 acres of wetlands at a cost of $191,813,675. One project was constructed under the Breaux Act in Region 3 this year: Mandalay Bank Protection Demonstration (TE-41).

Eight projects in Region 3 address imminent marsh loss due to changes in natural hydrology. Three of these projects focus on restoring marsh habitat by rerouting available freshwater into a watershed lacking adequate freshwater input. The Brady Canal Hydrologic Restoration (TE-28) project was constructed in 2000, and both South Lake DeCade Freshwater Introduction (TE-39) and Atchafalaya Water to Central Terrebonne (TE-42) projects are currently in the design phase. Other projects, such as the Penchant Basin Natural Resources Plan Increment 1 (TE-34) and Lake Chapeau Sediment Input and Hydrologic Restoration, Point Au Fer Island (TE-26) are designed to restore a more natural hydrology through the installation of weirs and other water control devices. Both projects were constructed in 1999.

Lake Boudreaux Basin Freshwater Introduction and Hydrologic Management (TE-32a), a combination freshwater diversion/hydrologic restoration project, will reduce saltwater intrusion and promote vegetation diversity. Similarly, Grand Bayou/GIWW Freshwater Diversion (TE-10) will maintain emergent wetlands by providing supplemental freshwater, nutrients, and sediment from the Atchafalaya River. These projects are currently in the design phase.

The beneficial use of dredged material project, West Belle Pass Headland Restoration (TE-23), was constructed in 1998 and created 184 acres of wetlands in areas that had deteriorated to open water. The Atchafalaya Sediment Delivery (AT-02) and Big Island Mining (AT-03) projects were also constructed in 1998 to enhance natural deltaic growth processes. The authorized Castille Pass Channel Sediment Delivery (AT-04) will also create new wetland habitat in the Atchafalaya River Delta.

The five barrier island restoration projects constructed in Region 3 are Isles Dernieres Restoration East Island (TE-20), Isles Dernieres Restoration Trinity Island (TE-24), Whiskey Island Restoration (TE-27), and East Timbalier Island Sediment Restoration, Phase I (TE-25) and Phase II (TE-30). Preliminary monitoring of both Phase I and II of the East Timbalier Island restoration project has indicated an increase in dune and supratidal habitat one year following the completion of construction. Combined, these five projects created an additional 590 acres of barrier island habitat.

The New Cut Dune and Marsh Restoration (TE-37) project, approved for construction, will reconnect East and Trinity islands by closing the breach that was originally created in 1974 by Hurricane Carmen. Additionally, the Timbalier Island Dune and Marsh Restoration (TE-40)

project, which is currently in the design phase, is intended to restore the rapidly deteriorating eastern end of Timbalier Island by direct creation of dunes and marshes. The Ship Shoal: Whiskey West Flank Restoration (TE-47) project will restore habitat in Whiskey Pass and on the west flank of Whiskey Island through the deposition of material dredged from Ship Shoal.

The Raccoon Island Breakwaters Demonstration (TE-29) project, a demonstration project constructed in 1997, utilized segmented rock breakwaters on the Gulf of Mexico side of the island to protect the island from wave-induced erosion and to trap water-borne sediments. Beach profile analyses during the first year indicate that the shoreline erosion rate was reduced between the breakwaters and that substantial shoreline progradation occurred behind all but two of the eight breakwaters. Sediment accumulated an average of 8.5 cubic yards per linear foot of shoreline during this time period. More recent data suggest that shoreline erosion no longer occurs immediately behind the breakwaters

Twelve shoreline protection projects were authorized within Region 3. Construction is complete on the following six projects: Point au Fer Canal Plugs (TE-22), Vermilion River Cutoff Bank Protection (TV-03), Boston Canal/Vermilion Bay Bank Protection (TV-09), Lake Portage Land Bridge (TV-17), Weeks Bay Marsh Creation and Shore Protection/Commercial Canal Freshwater Redirection (TV-19), and Mandalay Bank Protection Demonstration (TE-41). Freshwater Bayou Bank Stabilization (TV-11b), GIWW Bank Restoration of Critical Areas in Terrebonne (TE-43), North Lake Mechant Landbridge Restoration (TE-44), Terrebonne Bay Shore Protection Demonstration (TE-45), and West Lake Boudreaux Shoreline Protection and Marsh Creation (TE-46) have not been constructed yet. The Raccoon Island Shoreline Protection/Marsh Creation (TE-48) project is designed to protect the Raccoon Island rookery and seabird colonies from an encroaching shoreline, through the construction of an additional eight segmented breakwaters west of the constructed Raccoon Island Breakwaters Demonstration (TE-29) project.

All projects, with the exception of the demonstration projects, utilize rock structures and/or vegetation to reduce the wave energy reaching the shoreline, thereby reducing shoreline erosion. The rock revetments at Boston Canal/Vermilion Bay Bank Protection (TV-09) have not only stopped shoreline erosion, but have accumulated approximately 4.5 feet of sediment. This deposition of material has resulted in the establishment of vegetated wetlands immediately behind the rock structures.

The four sediment trapping projects in Region 3 are Little Vermilion Bay Sediment Trapping (TV-12), Sediment Trapping at "The Jaws" (TV-15), Four Mile Canal Terracing and Sediment Trapping (TV-18), and the Cheniere Au Tigre Sediment Trapping Demonstration (TV-16). These projects incorporate barriers which capture and hold both sediment and nutrients, and decrease water velocity, thereby facilitating marsh building processes. Little Vermilion Bay Sediment Trapping (TV-12) was constructed in 1999, and monitoring has been initiated. The Cheniere Au Tigre Sediment Trapping Demonstration was completed in 2000 and will test the effectiveness of four sediment trapping devices.

One project authorized in 2003 on the 12$^{th}$ project priority list, Avoca Island Diversion and Land Building (TE-49) will utilize diverted sediment to create and protect 143 acres of emergent wetlands in Central Avoca Island.

Two vegetation planting projects have been constructed in Region 3. The Falgout Canal Planting Demonstration (TE-17), completed in 1997, and Timbalier Island Planting Demonstration (TE-18), completed in 1996, utilized vegetation along the shoreline in an effort to minimize shoreline erosion. Falgout Canal Planting Demonstration (TE-17) also utilized wave-damping structures to decrease wave-induced stress on the plants, while the Timbalier Island Planting Demonstration (TE-18) utilized sand fencing to trap wind-born sand.

The Thin Mat Floating Marsh Enhancement Demonstration (TE-36) project was constructed in 2000 and will evaluate the effectiveness of various techniques (i.e., wetland vegetation, plugs, and fertilizers) on the creation and enhancement of thin floating mats of marsh.

The Breaux Act Task Force officially deauthorized four projects in Region 3: Lower Bayou LaCache Hydrologic Restoration (TE-19), Flotant Marsh Fencing Demonstration (TE-31), Bayou Boeuf Pump Station (TE-33), and Marsh Creation East of the Atchafalaya River- Avoca Island (TE-35).

*State*

Twelve projects in Region 3, implemented by the CRD/CED and funded by the Wetlands Trust Fund, are projected to benefit an estimated 5,199 acres of land at a cost of $11,362,932.

Four marsh management projects have been constructed in Region 3. Currently, rehabilitation plans are being developed for Montegut Wetland (TE-01), Falgout Canal Wetland (TE-02), and Bayou LaCache (TE-03) in order to evaluate project effectiveness and to recommend improvements, if necessary. Marsh Island Control Structures (TV-06), another marsh management project, was designed to improve habitat for waterfowl by installing flap-gated culverts and earthen canal plugs.

The four shoreline protection projects are Yellow Bayou (TV-02b), Freshwater Bayou Bank Protection (TV-11), Oaks/Avery Canal (TV-13), and Quintana Canal/Cypremort Point. All were constructed between 1992 and 2000.

Lower Petit Caillou (TE-07b), a hydrologic restoration project, was constructed in 1995 to decrease saltwater intrusion into the project area.

Spoilbank along GIWW, a state-funded vegetation planting project, was implemented in 1993. A total of 1,600 trees were planted (800 black willow, *Salix nigra*, and 800 bald cypress, *Taxodium distichum*) to reduce bank erosion. The effectiveness of various nutria exclusion devices was also tested. Point Farm Refuge Planting (TE-14), another state-funded vegetation project, was constructed in 1995 to create bottomland hardwood forests in former farmlands.

*Parish Coastal Wetlands Restoration Program*

In Region 3, the following eight Christmas tree projects were maintained in 2003: Pelican Point/Shark Island, GIWW near Hanson Canal, Atchafalaya River Delta, Vermilion Bay and Rainey Wildlife Preserve, Shark Bayou, Weeks Island at GIWW, Hammock Lake and St. Martin Parish. These projects include approximately 5,316 linear feet of active fences. Monitoring data from the Hammock Lake Christmas tree project indicate that over 660 cubic yards of sediment accumulated in the project area just three years after construction.

*DNR/NRCS/SWCC Vegetation Planting Program*

Since 1988, a total of 70 vegetation planting projects have been implemented in Region 3. Several phases, which span over several years, exist for many of the planting

projects. The vegetation planting projects that were constructed in 2003 in Region 3 are Castex Water Management Protection Project, Delcambre Canal, Catfish Bayou South, Gray Duck Hole 2, Burns Point 2, Brady Canal 2, Lapeyrouse Canal, East Cote Blanche Shoreline Stabilization, Delcambre Terraces 2, and Audubon Terraces.

*Section 204/1135*

Within Region 3, one Section 204/1135 project was constructed in 1991, and one was constructed in 2002. The Wine Island Restoration project, constructed in 1991, rebuilt the island with the use of dredged material. The Houma Navigation Canal, Wine Island Barrier Island Restoration project, constructed in late 2002, will investigate the feasibility of beneficially using the dredged material from the bar channel area to create 50 acres of wetlands in deteriorated marshes and open water areas.

*Other*

Within Region 3 one project was constructed with funding from a NOAA grant in 2003. The Brown Marsh Small Dredge Marsh Creation Project features consist of a thin layer marsh creation/nourishment project over 44 acres in Lafourche Parish.

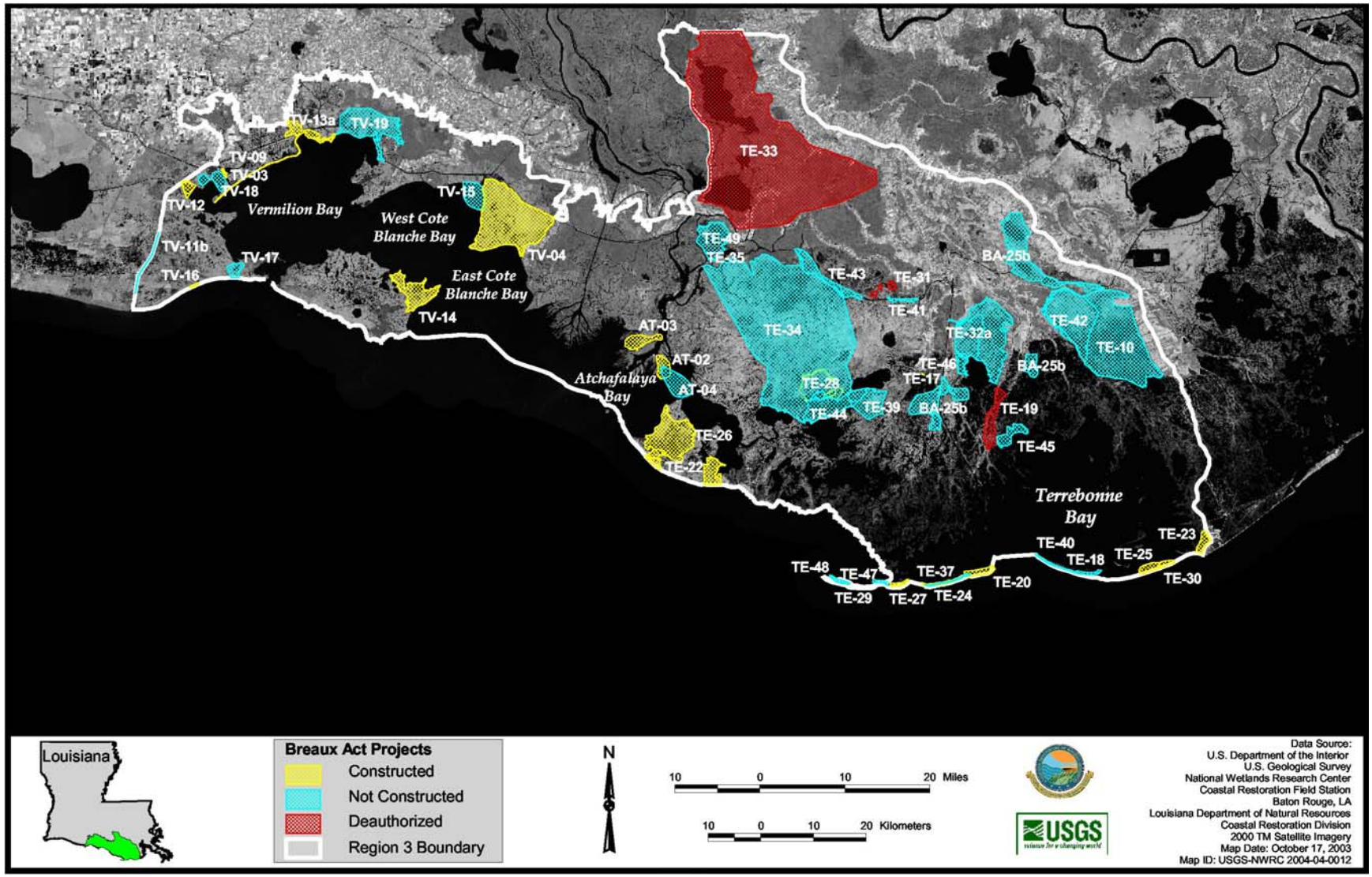



**Figure 7: Location of Breaux Act projects authorized in Coast 2050 Region 3.**

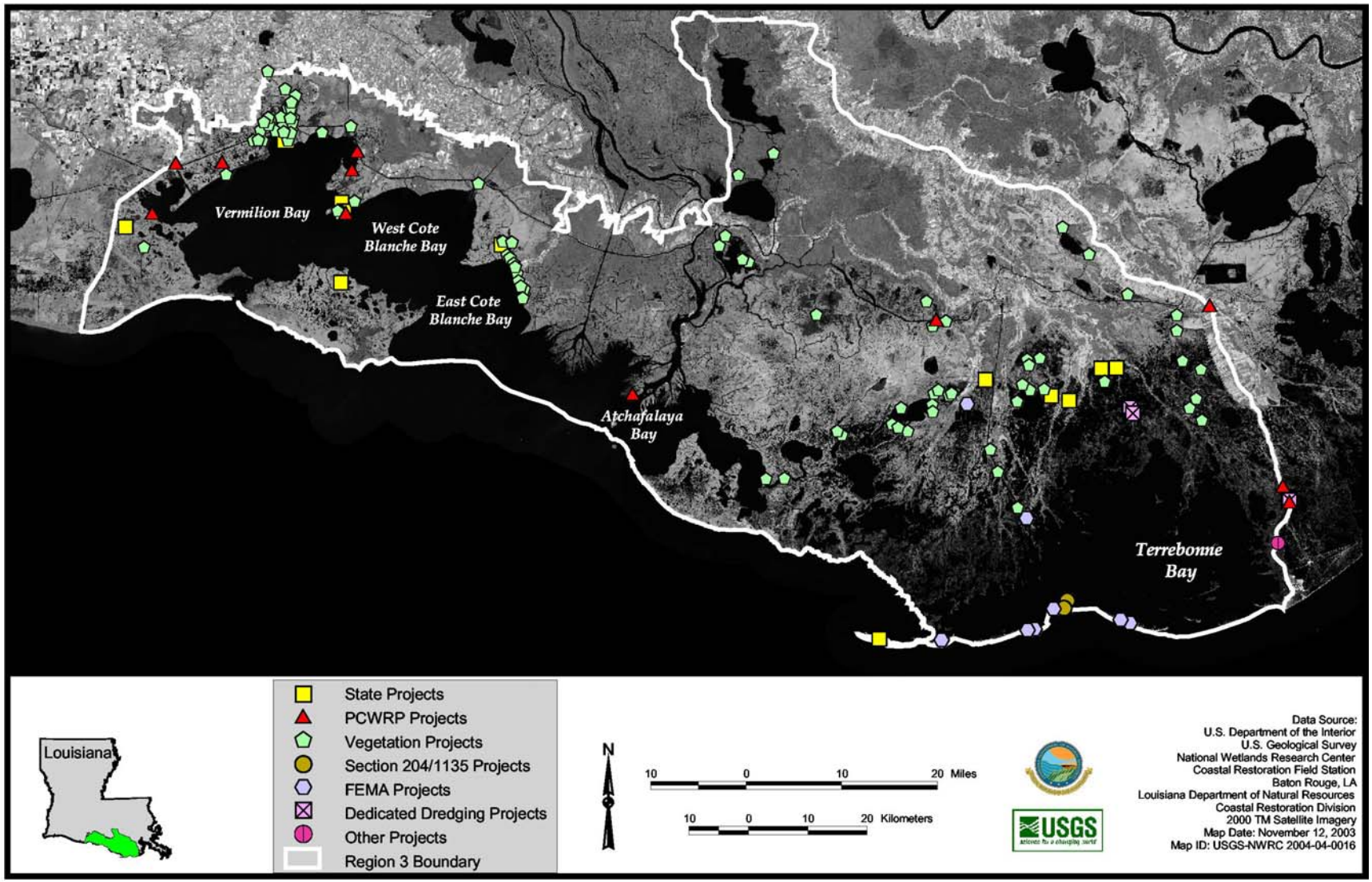



**Figure 8: Location of State, PCWRP, Vegetation, Section204/1135, FEMA, Dedicated Dredging, and Other projects in Coast 2050 Region 3.**

**Table 3.** Restoration projects completed or pending in Coast 2050 Region 3.

| Program | State Project Number (Federal) | Project Name | Project Type | PPL | Agency/Sponsor | Senator | Representative | Parish | Acres Benefitted | Construction Completion Date | Engineering, Design, & Landrights Cost | Construction Cost | Operation, Maintenance, & Monitoring Cost | Baseline Cost Estimate | Current Cost Estimate | Project Summary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Breaux Act | AT-02 (PAT-2) | Atchafalaya Sediment Delivery | SD DM MC | 2 | NMFS | Gautreaux | Smith | StM. | 2,232 | 1998 | $202,712 | $1,691,109 | $665,202 | $907,810 | $2,559,023 | This project was authorized to enhance natural delta growth, which has been reduced as a result of maintenance dredging of the Atchafalaya River navigation channel. This was achieved by re-opening Natal Channel and Radcliff Passes to restore freshwater and sediment delivery to the East Delta lobe of the Atchafalaya River Delta. The channels were cut to 90 feet wide, six feet deep, and 6,300 feet long, and construction was completed in March of 1998. Dredged material was pumped onto the adjacent marsh and shallow mudflats to increase marsh elevation and create new marsh. Evaluation of monitoring data indicated that only 70 of the projected 432 acres of marsh were created from the initial deposition of dredged material; however, this is twice the rate of land that was created naturally within the previous four years. Additionally, the majority of the created habitat was forested wetland instead of marsh, indicating that sediment elevations were too high. |
| Breaux Act | AT-03 (XAT-7) | Big Island Mining | SD DM MC | 2 | NMFS | Gautreaux | Smith, Dartez | StM. | 1,560 | 1998 | $555,682 | $6,379,455 | $615,766 | $4,136,057 | $7,550,903 | Construction of the project ended September 20, 1997. A total of 7,510,088 cubic yards of dredged material was placed to create five disposal areas. Habitat mapping of 1998 aerial photography, taken immediately following construction, showed that the project created 157 acres. Of the 157 acres created, 106 were classified as scrub-shrub and 51 as fresh marsh. Elevation of the two intensively studied disposal areas ranged from approximately 0.5 feet to 4.0 feet (NAVD 88), which is nearly 2 feet higher than most naturally created islands in the Atchafalaya Delta. Due to the quick colonizing of black willow (*Salix nigra* ), the areas classified as scrub-shrub have grown, and large portions of the project could now be considered forested wetland. |
| Breaux Act | AT-04 (XAT-11) | Castille Pass Channel Sediment Delivery | MC SNT | 9 | NMFS | Gautreaux, Dupre | Smith, Dartez | StM. | 589 | Pending | $1,809,682 | N/A | $46,110 | $1,484,633 | $1,855,792 | Castille and East Passes will be dredged to increase the eastern flow of Atchafalaya River water in order to enhance natural deltaic creation and marsh building. The need for maintenance dredging of these passes and creation of new bifurcations will be assessed at 5 year intervals and performed as necessary to allow for continued delta formation over the 20-year project life. |
| Breaux Act | TE-10 (XTE-49) | Grand Bayou/GIWW Freshwater Diversion | FD | 5 | USFWS | Dupre | Pitre, Baldone | Laf. | 199 | Pending | $1,301,868 | $2,367,807 | $4,270,047 | $5,135,468 | $8,209,722 | The objective of the project is to maintain emergent wetlands in this area by providing supplemental freshwater, nutrients, and some mineral sediment from the Atchafalaya River via the GIWW. Restriction of the Cut Off Canal will reduce saltwater intrusion and retain freshwater, and the deepening of a portion of Bayou L'eau Bleu will provide for increased freshwater input. The USACE has developed a hydrologic model for this project to predict responses to the proposed hydrologic alterations. |
| Breaux Act | TE-17 (TE-17) | Falgout Canal Plantings Demonstration | VP | 1 | NRCS | Dupre | Dartez | Ter. | N/A | 1997 | $24,100 | $90,000 | $90,879 | $144,561 | $204,979 | Smooth cordgrass (*Spartina alterniflora* ) was planted along the northern bank of Falgout Canal to prevent the canal shoreline from breaching and exposing the interior marshes to boat wakes. Additionally, six different types of wave dampening structures were constructed to protect the vegetation plantings. The project has been completed and monitoring results indicated that plantings were a failure due to the duration of flooding, and that the wave dampening structures did not reduce erosion rates alone. |

| Program | State Project Number (Federal) | Project Name | Project Type | PPL | Agency/Sponsor | Senator | Representative | Parish | Acres Benefitted | Construction Completion Date | Engineering, Design, & Landrights Cost | Construction Cost | Operation, Maintenance, & Monitoring Cost | Baseline Cost Estimate | Current Cost Estimate | Project Summary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Breaux Act | TE-18 (TE-18) | Timbalier Island Planting Demonstration | VP | 1 | NRCS | Dupre | Baldone | Ter. | N/A | 1996 | $24,100 | $311,200 | $97,558 | $372,589 | $432,858 | Vegetation suited to the salinity and habitat of the barrier island was planted and sand fencing was constructed along several overwash areas to decrease wind-induced erosion, increase emergent vegetation cover, increase elevations in the vicinity of the sand fencing, and demonstrate the effectiveness of these management approaches in mitigating barrier island erosion. Results indicated that the fences did in fact, build dunes and vegetation colonized the areas; however, once waves reached the fences, dunes were quickly washed away and fences were destroyed. Observations indicated that dunes did not rebuild again, and that fences need to be maintained in future dune building projects. |
| Breaux Act | TE-19 (TE-19) | Lower Bayou LaCache Hydrologic Restoration | MM | 1 | NMFS | Dupre | Baldone | Ter. | N/A | Deauth. | $93,304 | N/A | $6,321 | $1,694,739 | $99,625 | The project was originally authorized to reduce marsh loss and restore the area by retaining freshwater and limiting saltwater influx. Because of problems with landrights and navigation, the project was officially deauthorized by the Breaux Act Task Force in February of 1996. |
| Breaux Act | TE-20 (TE-20) | Eastern Isles Dernieres, East Island | BI | 1 | EPA | Dupre | Baldone | Ter. | 9 | 1999 | $386,117 | $7,847,564 | $511,530 | $6,345,468 | $8,745,210 | This project was authorized to rebuild and extend the life-expectancy of East Island, a barrier island in the Isles Dernieres chain, in Terrebonne Parish. Approximately 3,925,000 cubic yards of sand were dredged from adjacent waters and were used to build a retaining dune which was then hydraulically filled to create an elevated marsh platform sloping from the dunes to +4.0 feet at the bay side of the island. Sand fences and vegetation were also installed to stabilize the sand and minimize wind-driven transport. Construction was completed in July of 1999. Initial monitoring indicated that fences have built dunes, and that vegetation survival was high (>70%) after one growing season; however, the current cover of vegetation on the bare sand is low (<20%) where initially planted. This indicates that an alternate planting design needs to be considered in future projects to maximize cover of bare sediment faster. |
| Breaux Act | TE-22 (PTE-22/24) | Point Au Fer Canal Plugs | SP HR | 2 | NMFS | Dupre | Dartez | Ter. | 375 | 1997 | $230,196 | $2,127,324 | $562,262 | $1,069,589 | $2,919,782 | This project involves plugging a number of canals and the stabilizing of Mobil Canal-Gulf of Mexico breach to prevent saltwater intrusion into the interior of the island. Plugs were installed at strategic locations and the shoreline was armored along stretches vulnerable to breaching and overtopping during storms to reduce marsh loss and the potential for saltwater intrusion. Initial monitoring data indicates that the project has not reduced canal erosion rates. |
| Breaux Act | TE-23 (PTE-27) | West Belle Pass Headland Restoration | DM SP | 2 | USACE | Dupre | Pitre | Laf. | 474 | 1998 | $886,474 | $5,349,454 | $598,449 | $4,854,102 | $6,834,377 | This project involved utilizing dredged material from maintenance dredging of Bayou Lafourche, installing several water control devices, and armoring approximately 17,000 feet of shoreline to protect a deteriorated wetland area adjacent to Belle Pass and Bayou Lafourche, to address site-specific wetland loss. The project utilized approximately 1,400,000 cubic yards of dredged material from Bayou Lafourche to rebuild approximately 184 acres of wetland on the west side of Belle Pass. Dredging was completed in June of 1998; however, the area was damaged by marsh buggies during project construction. Mitigation is pending and the project will not be fully accepted by DNR and the USACE until mitigation is implemented. Monitoring has been initiated, and the rock structure along Bayou Lafourche has stopped shoreline erosion as expected. |

| Program | State Project Number (Federal) | Project Name | Project Type | PPL | Agency/Sponsor | Senator | Representative | Parish | Acres Benefitted | Construction Completion Date | Engineering, Design, & Landrights Cost | Construction Cost | Operation, Maintenance, & Monitoring Cost | Baseline Cost Estimate | Current Cost Estimate | Project Summary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Breaux Act | TE-24 (XTE-41) | Eastern Isles Dernieres, Trinity Island | BI | 2 | EPA | Dupre | Baldone | Ter. | 109 | 1999 | $425,112 | $10,202,790 | $157,804 | $6,907,897 | $10,785,706 | This project was authorized to rebuild and extend the life-expectancy of Trinity Island, a barrier island in the Isles Dernieres chain, expected to be lost by the year 2007 without restoration. Approximately 4,850,000 cubic yards of sand were dredged from adjacent waters and were used to build a retaining dune which was then hydraulically filled to create an elevated marsh platform sloping from the dunes to +4.0 feet at the bay side of the island. Sand fences and vegetation were also installed to stabilize the sand and minimize wind-driven transport. Construction was completed in July 1999. Initial monitoring indicated that fences have successfully built dunes and that vegetation survival after one growing season post planting was high (>80%); however, cover of bare sand planted areas was low (<30%), indicating alternate planting designs need to be considered in future projects to maximize cover of bare sediment faster. |
| Breaux Act | TE-25 (XTE-67) | East Timbalier Island Restoration Phase I | BI | 3 | NMFS | Dupre | Pitre | Laf. | 1,913 | 2000 | $445,785 | $3,452,307 | $142,636 | $2,046,971 | $4,040,728 | The objective of the project is to increase the size and life expectancy of the island. This is the first of two projects approved to enhance East Timbalier Island. This phase involved the dredging of sand from submerged areas near the island and pumping that material to create dune and intertidal wetland habitats at three locations on the island which are extremely narrow and subject to storm overwash and breaching. Construction was completed in May 2001 and monitoring has been initiated. |
| Breaux Act | TE-26 (PTE-23/26a/33) | Lake Chapeau Sediment Input and Hydrologic Restoration, Point Au Fer Island | HR MC | 3 | NMFS | Dupre, Gautreaux | Dartez, Smith | Ter. | 509 | 1999 | $599,221 | $3,602,934 | $1,177,832 | $4,149,182 | $5,379,987 | This project was authorized to A) restore interior marsh hydrology and B) to protect localized regions of Point au Fer Island from imminent loss. The project components include the re-establishment of a hydrologic separation of the island's two major watersheds utilizing dredge material from Atchafalaya Bay and the restoration of the island hydrology by plugging oil field access canals and gapping artificial spoil banks to restore natural hydrologic pathways (i.e., improve marsh sheetflow and flow through natural bayous). Construction was complete in August 1999. Monitoring data indicated that vegetation plantings have been successful and created marsh on a large portion of the dredge fill area. Hydrologic data is still being evaluated. |
| Breaux Act | TE-27 (PTE-15bi) | Whiskey Island Restoration | BI | 3 | EPA | Dupre | Baldone | Laf. | 1,239 | 1999 | $595,424 | $6,986,449 | $139,313 | $4,844,274 | $7,721,186 | This project was authorized to rebuild and extend the life-expectancy of Whiskey Island, a barrier island in the Isles Dernieres chain, expected to be lost by the year 2007 without restoration. Approximately 2,852,875 cubic yards of sand were dredged from adjacent waters and were used to build a retaining dune which was then hydraulically filled to create an elevated marsh platform sloping from the dunes to +4.0 feet at the bay side of the island. Vegetation was also installed to stabilize the sand and minimize wind-driven transport. Construction was completed in July 1999. Initial monitoring indicated that vegetation survival 1 growing season after planting was very low (<30%). Additionally, cover of bare sand planted areas was low (<15%), indicating alternate planting designs need to be considered in future projects to maximize cover of bare sediment faster. Elevation models from surveys indicate volume loss of sediment 1.5 years after deposition of >21,600 cubic yards of sediment from wind and overwash events indicating the need for sand fencing soon after construction. |
| Breaux Act | TE-28 (PTE-26b) | Brady Canal Hydrologic Restoration | HR | 3 | NRCS | Dupre | Dartez | Ter. | 297 | 2000 | $312,500 | $2,921,300 | $2,428,376 | $4,717,928 | $5,662,176 | This project was designed to restore interior marsh hydrology by replacing outdated and ineffective water control structures, installing new controls on existing canals, and protecting the shoreline along Superior Canal, Jug Lake, and Bayou DeCade. This will enhance freshwater, sediment and nutrient delivery to the project area from Bayou Penchant. Construction was completed in April of 2000 and monitoring has been initiated. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Breaux Act | TE-29 (PTE-15-vii) | Raccoon Island Breakwaters Demonstration | BI | 5 | NRCS | Dupre | Baldone | Ter. | N/A | 1997 | $200,482 | $1,373,569 | $221,418 | $1,497,538 | $1,795,469 | Eight detached, segmented breakwaters were constructed along the eastern end of the island to reduce the rate of shoreline retreat, promote sediment deposition along the beach, and protect seabird habitat. Breakwaters are 300 feet long and 10 feet wide at the crown. The project was initiated to evaluate the use of a segmented breakwater as a means to reduce the rate of barrier island erosion. The project has successfully met its goal of reducing shoreline erosion and increasing land coverage. |
| Breaux Act | TE-30 (XTE-45/67b) | East Timbalier Island Restoration, Phase 2 | BI | 4 | NRCS | Dupre | Pitre | Laf. | 215 | 2000 | $905,521 | $12,714,453 | $145,041 | $5,752,404 | $13,765,015 | This is the second of two projects that have been approved to enhance and extend the life expectancy of East Timbalier Island. Dredged material was placed from the center of the island to approximately 6,000 feet eastward at a width of approximately 935 feet. Due to a much higher than anticipated cut-to-fill ratio, hydraulic dredging was halted with only 45% of the planned fill area completed. |
| Breaux Act | TE-31 (XTE-54b) | Flotant Marsh Fencing Demonstration (Deauthorized) | SP | 4 | NRCS | Gautreaux | Dartez | Ter. | N/A | Deauth. | $96,584 | N/A | $10,254 | $367,066 | $106,839 | This project was authorized to conserve and restore floating marshes by utilizing fences constructed across levee breaks as an alternative to depositing fill material or installing water control structures. The restoration techniques that were originally suggested for this project were not feasible. The project was officially deauthorized by the Breaux Act Task Force in October of 2001. |
| Breaux Act | TE-32a (TE-7f) | Lake Boudreaux Basin Freshwater Introduction and Hydrologic Management, Alternative B | FD HR | 6 | USFWS | Dupre | Dartez, Baldone | Ter. | 619 | Pending | $961,357 | $5,453,945 | $4,104,081 | $9,831,306 | $10,519,383 | The purpose of the project is to reduce saltwater intrusion and promote vegetation diversity by routing available freshwater from the north through the project area to the south. This project has a dredging component that will facilitate freshwater distribution. Sluice gates will also be constructed under Louisiana Hwy 57 and several outfall management structures to allow for drainage and reduce ponding of water. |
| Breaux Act | TE-33 (XTE-32i) | Bayou Boeuf Pump Station (Deauthorized) | HR | 6 | EPA | Gautreaux, Chaisson, Romero | Smith, Dartez, Downer, Triche, Devillier | StM. | N/A | Deauth. | $3,452 | N/A | $0 | $150,000 | $3,452 | This project was intended to develop information and recommend project features for protection and restoration in the Verret Basin. A critical aspect of the effort was to be public scoping/involvement at a cost of $500,000. The federal sponsor, in concurrence with the State, requested that the project be deauthorized based on the belief that the project's objectives may be more appropriately achieved through the USACE Lower Atchafalaya Re-evaluation Study through the review of flood control projects. The project was officially deauthorized by the Breaux Act Task Force in July of 1998. |
| Breaux Act | TE-34 (PTE-26i) | Penchant Basin Natural Resources Plan, Increment I | HR | 6 | NRCS | Gautreaux, Dupre | Dartez | Ter. | 1,155 | Pending | $1,669,054 | $9,723,048 | $2,710,949 | $14,103,051 | $14,103,051 | Hydrologic restoration of the Penchant Bayou Basin will include dredging and marsh creation, the construction of weirs and plugs, and maintenance to existing weir structures. This project will combine long-term realignment of Penchant Basin hydrology with restoration and protection measures aimed at maintaining the physical integrity of the area during the transition toward greater riverine influence. |
| Breaux Act | TE-35 (CW-5i) | Marsh Creation East of the Atchafalaya River, Avoca Island (Deauthorized) | MC | 6 | USACE | Gautreaux | Dartez | StM. Ter. | N/A | Deauth. | $66,425 | N/A | $443 | $6,438,400 | $66,869 | The project involved the beneficial use of dredged material from the Crew Boat Chute reach of the Atchafalaya River for marsh creation in the Avoca Island area. Although the project would have benefitted 434 acres at a cost of $6,438,400, the cost of the project was estimated to be considerably higher than originally planned making it economically unjustifiable. The Federal Sponsor, in concurrence with the State, requested that the project be deauthorized. The project was officially deauthorized by the Beaux Act Task Force in July of 1998. |

| Program | State Project Number (Federal) | Project Name | Project Type | PPL | Agency/Sponsor | Senator | Representative | Parish | Acres Benefitted | Construction Completion Date | Engineering, Design, & Landrights Cost | Construction Cost | Operation, Maintenance, & Monitoring Cost | Baseline Cost Estimate | Current Cost Estimate | Project Summary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Breaux Act | TE-36 (CW-DEMO) | Thin Mat Floating Marsh Enhancement Demonstration | MC | 7 | NRCS | Dupre | Dartez | Ter. | N/A | 2000 | $52,645 | $18,000 | $471,925 | $460,222 | $542,570 | This demonstration project will evaluate techniques to create and enhance thin floating mats of marsh, as well as the effects of water movement and sediment on these marshes. This project was designed to induce the development of thick, continually floating mats from a thin-mat floating marsh by using plugs of wetland vegetation and fertilizers. Construction was completed April of 2000. Initial observations indicated that maidencane (*Panicum hemitomon* ) transplants only survive when protected from herbivory and that fertilizer increased nutrient concentrations in both plant tissues and interstitial substrate water. |
| Breaux Act | TE-37 (TE-11a) | New Cut Dune and Marsh Creation | BI MC | 9 | EPA | Dupre | Baldone | Ter. | 102 | Pending | $1,124,887 | $9,161,771 | $42,410 | $7,393,626 | $10,329,068 | The objective of this project is to close the breach between East and Trinity Islands, that was originally created by Hurricane Carmen. The project will create dune and marsh habitat, and lengthen the structural integrity of the eastern Isles Dernieres by restoring the littoral drift and adding sediment into the near-shore system. This project has been approved for Phase II funding. |
| Breaux Act | TE-39 (PTE-28) | South Lake DeCade Atchchafalaya Freshwater/ Sediment Introduction | HR | 9 | NRCS | Dupre | Dartez | Ter. | 201 | Pending | $406,429 | N/A | $89,182 | $396,489 | $495,611 | This project includes the construction of a water control structure in the southern bank of the lake. This will increase the amount of Atchafalaya River water and sediment introduced into the marshes south of Lake DeCade. In addition, shoreline protection will be implemented adjacent to the proposed structure, and a weir in Lapeyrouse Bayou will be replaced. |
| Breaux Act | TE-40 (XTE-45a) | Timbalier Island Dune/Marsh Creation | BI MC | 9 | EPA | Dupre | Baldone | Ter. | 273 | Pending | $2,085,865 | $17,964,119 | $42,820 | $16,234,679 | $20,092,804 | Timbalier Island is migrating rapidly to the west/northwest; therefore the western end of Timbalier Island is undergoing lateral migration by spit-building processes at the expense of erosion along the eastern end. The objective of this project is to restore the eastern end of Timbalier Island by the direct creation of dunes and marsh. |
| Breaux Act | TE-41 (XTE-DEMO) | Mandalay Bank Protection Demonstration | SP | 9 | USFWS | Gautreaux, Dupre | Dartez, Downer | Ter. | N/A | 2003 | $345,508 | $1,434,445 | $89,706 | $1,194,495 | $1,869,659 | This project is intended to develop new techniques for protecting and restoring organic soils that can be easily eroded. Intact banks and breakthroughs will be treated to determine the cost-effectiveness of demonstrated approaches. |
| Breaux Act | TE-42 (Complex Project | Move Existing Atchafalaya Water to Central Terrebonne | HR | 9 | USFWS | Dupre | Dartez, Baldone, Pitre | StM. | N/A | Pending | N/A | N/A | N/A | N/A | N/A | This project is intended to reduce marsh loss through the improved distribution of excess freshwater seasonally available in the Gulf Intracoastal Waterway (GIWW). The project will benefit deteriorating marshes in central and/or eastern portions of the Terrebonne Basin. |
| Breaux Act | TE-43 | GIWW Bank Restoration of Critical Areas in Terrebonne | SP | 10 | NRCS | Gautreaux | Dartez | Ter. Laf. | 366 | Pending | $2,151,375 | N/A | $18,625 | $1,735,983 | $2,170,000 | This project is intended to relieve Penchant Basin marshes from prolonged inundation, utilize the Gulf Intracoastal Waterway (GIWW) as a conveyance channel to direct Atchafalaya River flow to specific locations in need of freshwater input, and restore deteriorated channel banks of the GIWW. |
| Breaux Act | TE-44 | North Lake Mechant Landbridge Restoration | SP MC | 10 | USFWS | Dupre | Dartez | Ter. | 604 | Pending | $1,834,872 | $439,842 | $108,338 | $2,383,052 | $2,383,052 | This project entails the creation of marsh through the deposition of dredged material, construction of five plugs, and the repair of a fixed-crest weir. This project will restore and protect a critical landbridge barrier between the easily erodible fresh marshes north of Bayou Decade and open waters of Lake Mechant. The vegetation planting component of the project proceeded forward as a separate construction unit. |
| Breaux Act | TE-45 | Terrebonne Bay Shore Protection/Oyster Reef Lake Athanasio Demonstration | SP | 10 | USFWS | Dupre | Baldone | Ter. | N/A | Pending | $537,932 | $1,271,433 | $487,356 | $2,006,373 | $2,296,721 | This demonstration project will test 6 different features for their ability to prevent shoreline erosion while encouraging oyster reef formation and for their cost-effectiveness in achieving these goals. This project has been approved for Phase 2 funding, and construction is expected to begin in February 2004. |

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| Breaux Act | TE-46 | West Lake Boudreaux Shoreline Protection and Marsh Creation | SP MC | 11 | USFWS | Dupre | Dartez | Ter. | 145 | Pending | $1,624,728 | N/A | $28,215 | $1,322,354 | $1,652,943 | This project is intended to protect the interior, low salinity marshes west of Lake Boudreaux from the high wave energy of the Lake. This will be accomplished through the construction of an 11,644-ft rock dike to stop erosion along the western shoreline of Lake Boudreaux and the creation of 124 acres of marsh through the deposition of dredged material. |
| Breaux Act | TE-47 | Ship Shoal: Whiskey West Flank Restoration | BI | 11 | EPA | Dupre | Baldone | Ter. | 182 | Pending | $3,717,855 | N/A | $24,198 | $2,998,960 | $3,742,053 | This project will restore intertidal, supratidal and dune habitat in Whiskey Pass and the west flank of Whiskey Island through the deposition of sand dredged from Ship Shoal. This will provide a continued barrier to reduce wave and tidal energies, thereby protecting mainland shoreline from continued erosion. |
| Breaux Act | TE-48 | Raccoon Island Shoreline Protection/Marsh Creation | SP MC | 11 | NRCS | Dupre | Baldone | Ter. | 167 | Pending | $1,240,700 | N/A | $30,248 | $1,016,758 | $1,270,948 | This project will protect the Raccoon Island rookery and seabird colonies from an encroaching shoreline by reducing the rate of erosion along the western end and creating more land along the northern shoreline. This will be accomplished through the construction of eight additional segmented breakwaters along the Gulf side of the island just west of the Raccoon Island Breakwaters Demonstration (TE-29) project, and the creation of dune and supratidal habitat. |
| Breaux Act | TE-49 | Avoca Island Diversion and Land Building | SD | 12 | USACE | Gautreaux | Dartez | StM. | 143 | Pending | $2,185,217 | N/A | $44,659 | $2,229,876 | $2,229,876 | This project will divert freshwater, sediments and nutrients into the open water areas in central Avoca Island to create and protect 143 acres of emergent wetlands by the end of the 20 year project life. |
| Breaux Act | TV-03 (FTV-03) | Vermilion River Cutoff Bank Protection | SP | 1 | USACE | Romero | Hebert | Ver. | 65 | 1996 | $509,375 | $1,185,882 | $327,703 | $1,526,000 | $2,022,961 | The east bank of the Vermilion River Cutoff was stabilized by armoring the shoreline with a 6,520-foot rock breakwater to maintain the shoreline position and protect the integrity of several thousand acres of the Onion Lake wetland complex. |
| Breaux Act | TV-04 (TV-04) | Cote Blanche Hydrologic Restoration | HR | 3 | NRCS | Gautreaux | Smith | StM. | 2,223 | 1999 | $465,758 | $4,128,061 | $1,436,161 | $5,173,062 | $6,029,980 | Low-level weirs were constructed across seven major water exchange avenues to reduce water exchange between marshes of Cote Blanche and East and West Cote Blanche bays and to prevent scouring and persistent erosion of the interior marsh. In addition, the shoreline was armored on the southern boundary between Humble and British canals to minimize wave-induced erosion. |
| Breaux Act | TV-09 (PTV-18) | Boston Canal/Vermilion Bay Bank Protection | SP | 2 | NRCS | Romero | Hebert | Ver. | 378 | 1995 | $154,701 | $524,439 | $333,510 | $1,008,634 | $1,012,649 | The objective of this project is to conserve vegetated wetlands by reducing erosion through the dissipation of wave energy. Rock revetments and sediment traps were constructed along the shoreline at the mouth of Boston Canal to promote sediment deposition and to protect the shoreline and adjacent wetlands from continued wave-induced erosion. Vegetation was also planted along 14 miles of Vermilion Bay shoreline to stabilize sediment and decrease shoreline erosion rates. |
| Breaux Act | TV-11b (XTV-27) | Freshwater Bayou Bank Stabilization and Hydrologic Restoration - Belle Isle Canal to Lock | SP HR | 9 | USACE | Theunissen | Frith | Ver. | 529 | Pending | $1,380,303 | N/A | $118,664 | $1,498,967 | $1,498,967 | This project was authorized to stop shoreline erosion, and to protect the interior wetlands from increased tidal exchange and wave and wake-induced erosion. This will be achieved by constructing a rock dike along the eastern bank of Freshwater Bayou Canal, between Belle Isle Canal and Freshwater Bayou Lock. |
| Breaux Act | TV-12 (PTV-19) | Little Vermilion Bay Sediment Trapping | SNT | 5 | NMFS | Romero, Theunissen | Hebert, Frith | Ver. | 441 | 1999 | $196,817 | $351,930 | $337,283 | $940,065 | $886,030 | This project is designed to optimize the retention of sediment from the Atchafalaya River to create new marsh areas in Little Vermilion Bay. The project created earthen terraces to provide marsh habitat and protect adjacent wetlands from wave erosion. Construction was completed in August of 1999 and monitoring has been initiated. |

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| Breaux Act | TV-13a (XTV-25i) | Oaks/Avery Canals Hydrologic Restoration, Increment I | HR | 6 | NRCS | Romero | Hebert | Ibe. Ver. | 160 | 2002 | $322,500 | $1,509,401 | $996,700 | $2,367,700 | $2,828,601 | This project is designed to protect the Vermilion Bay shoreline, protect the GIWW banklines, and stabilize water level fluctuation north of the GIWW and east of Oaks Canal. Vegetation was planted and rock dikes were constructed. An additional state-funded project (TV-13), located adjacent to this project, will incorporate the use of low-sill structures placed at the outfall of Avery Canal to redirect additional water flow through one particular section of Bayou Petite Anse, located south of the GIWW. |
| Breaux Act | TV-14 (TV-5/7) | Marsh Island Hydrologic Restoration | HR | 6 | USACE | Romero | Hebert | Ibe. Ver. | 367 | 2001 | $601,199 | $3,166,547 | $1,373,747 | $4,094,900 | $5,141,493 | The project was authorized to stabilize the northeastern shoreline of Marsh Island, including the northern shoreline of Lake Sand, to restore historical hydrology. The project consists of the construction of nine plugs to be placed in oil and gas canals at the northeast end of Marsh Island, the protection of the northeast shoreline of Marsh Island, and isolating Lake Sand from Vermilion Bay with dredged material. |
| Breaux Act | TV-15 (PTV-19b) | Sediment Trapping at "The Jaws" | SNT | 6 | NMFS | Gautreaux | Smith | StM. | 1,999 | Pending | $438,654 | $2,548,187 | $405,294 | $3,167,400 | $3,392,135 | This project was authorized to reduce wave-induced shoreline erosion (currently 15 feet/year) within the project area and promote the deposition of sediment. This will be achieved by creating vegetated wetland terraces and reducing wave fetch. Distributary channels will be dredged to deliver water and sediment to the project area. |
| Breaux Act | TV-16 (CW-05) | Chenier Au Tigre Sediment Trapping Demonstration | SNT SP | 6 | NRCS | Theunissen | Frith | Ver. | N/A | 2001 | $85,961 | $450,567 | $87,704 | $500,000 | $624,232 | This demonstration project will field test the effectiveness of rock breakwaters that are designed to trap and retain sediment from Gulf tides, and potentially stabilize the existing shoreline on Chenier Au Tigre. Increased sediment accretion on the Gulf of Mexico side of the chenier is expected to act as a buffer between the higher salinity Gulf water and the brackish marsh, which lies immediately behind the chenier. |
| Breaux Act | TV-17 (PTV-20) | Lake Portage Land Bridge | SP | 8 | NRCS/EPA | Theunissen, Romero | Frith, Hebert | Ver. | 24 | Pending | $323,781 | $749,871 | $192,239 | $1,013,820 | $1,265,891 | The project was authorized to address localized wetland loss and imminent shoreline breaching of the Gulf of Mexico into Lake Portage. This will be achieved by the construction of a rock containment dike approximately 100 feet off the Gulf shoreline and backfilling with dredged material from Lake Portage. A pipeline canal will also be backfilled from the Gulf to Lake Portage. |
| Breaux Act | TV-18 (XTV-30) | Four Mile Canal Terracing and Sediment Trapping | SNT | 9 | NMFS | Romero, Theunissen | Frith, Hebert | Ver. | 327 | Pending | $656,946 | $2,739,659 | $47,357 | $5,086,511 | $3,443,962 | This project consists of the construction of over 60,000 linear feet (over 70 acres) of terraces within Little White Lake and Little Vermilion Bay, along Four Mile Canal, to abate wave-induced shoreline erosion and encourage sedimentation in the open water areas between the terraces. |
| Breaux Act | TV-19 (PTV-13) | Weeks Bay Marsh Creation and Shore Protection/ Commercial Canal Freshwater Redirection | SP VP HR | 9 | USACE | Romero | Hebert | Ibe. | 138 | Pending | $1,188,236 | N/A | $41,101 | $1,229,337 | $1,229,337 | The objective of this project is to stop shoreline and bank erosion. This will be achieved by the construction of a retention levee and channel plugs, the dedicated placement of dredged material, re-vegetating critical areas, and armoring shore/bank areas with sheetpile revetment. In addition, a low-sill weir will be placed across Commercial Canal to reduce tidal energies and redirect Atchafalaya River water. |
| State | TE-01 | Montegut Wetland | MM | N/A | N/A | Dupre | Baldone | Ter. | 1,655 | 1993 | N/A | N/A | N/A | N/A | $1,023,487 | The project objective was to protect and enhance 4,200 acres of degraded wetland habitat in the Pointe au Chien Wildlife Management Area. The project design included maintenance of approximately 3.5 miles of levee and the modification of two existing fixed-crest weirs by installing stop-logs and flapgates. |

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| State | TE-02 | Falgout Canal Wetland | MM | N/A | N/A | Dupre | Dartez | Ter. | 1,300 | 1993, 1995 | N/A | N/A | N/A | N/A | $1,560,000 | The primary objectives of the project were to protect approximately 8,000 acres of marsh and cypress/tupelo swamp, reduce saltwater intrusion, and improve wildlife habitat by moderating water flux and tidal energy in the deteriorating wetland community. Anthropogenic changes, such as the construction of pipeline and access canals throughout the region's history, have altered its original hydrology. The project design consisted of levee construction and maintenance, construction of seven water control structures, and construction of a pumping station. |
| State | TE-03 | Bayou LaCache (Bush Canal) | MM | N/A | N/A | Dupre | Dartez | Ter. | 171 | 1991, 1996 | N/A | N/A | N/A | N/A | $1,189,494 | A water control structure in Bayou Lacache needed to complete the Bush Canal Marsh Management Area was constructed. The structure is a four barrel prefabricated steel pipe structure with flap gates. The structure is 135 feet in length, consisting of four 48 inch diameter steel pipes with steel diaphragm plates, steel pipe bracing, gate supports, walkways and structural steel shop-fabricated flap gates. |
| State | TE-07b | Lower Petit Caillou | HR | N/A | N/A | Dupre | Dartez | Ter. | 333 | 1995 | N/A | N/A | N/A | N/A | $440,000 | The objective of this project was to decrease saltwater intrusion into the project area by re-routing freshwater discharge from the Lashbrook pumping station through the project area prior to entry into Lake Boudreaux. Outfall from the pumping station is discharged into Lashbrook Canal and flows into the project area. Project features include five plugs on the perimeter of the project area to contain the pump discharge and promote sheetflow over the marsh surface, and shoreline stabilization along the northern spoilbank of Boudreaux Canal and the eastern shore of Lake Boudreaux. |
| State | TE-14 | Point Farm Refuge Planting | VP | N/A | N/A | Dupre | Dartez | Ter. | 150 | 1995 | N/A | N/A | N/A | N/A | $192,016 | This project was developed to create bottomland hardwood forests in former farmlands within the Point Farm Refuge Area (PFRA). Approximately 108,900 seedlings of bitter pecan (*Carya aquatica* ), water oak (*Quercus nigra* ), and cow oak (*Quercus michauxii* ) (with nutria exclusion devices) were planted within 300 acres of former farmland within the PFRA. |
| State | TV-02b | Yellow Bayou | SP | N/A | N/A | Gautreaux | Smith | StM. | 52 | 1992 | N/A | N/A | N/A | N/A | $194,500 | The objectives of the project were to maintain the integrity of approximately 2,000 acres of interior marsh between Jackson Bayou and the British-American Canal and to stabilize 7,465 feet of the East Cote Blanche Bay shoreline. This was achieved by constructing an oyster shell berm adjacent to the water's edge to reduce shoreline erosion. |
| State | TV-06 | Marsh Island Control Structures | MM | N/A | N/A | Romero | Hebert | Ibe. | 643 | 1993 | N/A | N/A | N/A | N/A | $453,500 | The objectives of this project were to reduce the rate of land loss, revegetate shallow open-water areas, and increase waterfowl food within the water management units. Flap-gated/stoplog culverts and earthen canal plugs were installed in October of 1993 at the northeast and southeast units to control water exchange between the units and the surrounding water bodies. Within the management units, canal spoil banks were breached and ditches were constructed to facilitate water movement between interior marsh ponds. |
| State | T/V-11 | Freshwater Bayou Shoreline Protection Dike | SP | N/A | N/A | Theunissen, Romero, Craig, Jerry | Frith, Hebert, Mickey, Troy | Ibe. Ver. | 511 | 1994 | N/A | N/A | N/A | N/A | $2,177,025 | This project conserves vegetated wetlands by maintaining the physical integrity of marshes that separate Freshwater Bayou and interior water bodies. The dominant project feature consists of the construction of 24,000 linear feet of rock dike, extending north to the confluence of Belle Isle Bayou and Freshwater Bayou. The original project was constructed in 1994; however, repairs were made to the structure in 1996 and 2001. |
| State | TV-13 | Oaks/Avery Canal | SP | N/A | N/A | Romero | Hebert | Ibe. Ver. | 160 | 2000 | N/A | N/A | N/A | N/A | $700,000 | This project enhanced the adjacent CWPPRA-funded TV-13a project by installing low-sill structures at the outfall of Oaks and Avery Canals to redirect more water flow through the portion of Bayou Petite Anse south of the GIWW. |

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| State | TV-4355NP1 | Quintana Canal/ Cypremort Point | SP | N/A | N/A | Gautreaux | Smith | StM. | 26 | 1998 | N/A | N/A | N/A | N/A | $684,610 | The project features approximately 3,650 linear feet of rock breakwaters along the Vermilion Bay shoreline and approximately 3,375 of foreshore rock dike along the Vermilion Bay/Quintana Canal intersect and the south bank of the Quintana Canal. |
| State | TE-LDWF | Raccoon Island Repair | DM | N/A | N/A | Dupre | Baldone | Ter. | 197 | 1994 | N/A | N/A | N/A | N/A | $1,400,000 | This project was a cooperative effort that utilized dredged material and vegetation to repair Raccoon Island from storm damage. Cooperators include the Louisiana Department of Natural Resources (LDNR)/ Coastal Restoration Division (CRD), Louisiana Department of Wildlife and Fisheries (LDWF)/Fur and Refuge Division, Terrebonne Parish Consolidated Government (TPCG), South Terrebonne Tidewater Management and Conservation District, T. Baker Smith & Son, Inc., Coastal Engineering & Environmental Consultants, Inc., and Bean Dredging. Federal grant money was also utilized for this project by LDWF and TPCG. |
| State | | Spoilbank along the GIWW | VP | N/A | N/A | Gautreaux | Dartez | Ter. | 1 | 1993 | N/A | N/A | N/A | N/A | $9,400 | This project planted 8,000 feet of spoilbank along the Gulf Intracoastal Waterway with black willow (*Salix nigra* ) and bald cypress (*Taxodium distichum* ) in an effort to reduce further bank erosion. The effectiveness of different types of nutria exclusion devices were also tested. |
| PCWRP | | Pelican Point/Shark Island | SP | N/A | N/A | Romero | Hebert | Ibe. | 3 | 1991, 2003 | N/A | N/A | N/A | N/A | $19,000 | Brush fences were constructed in 1991 to prevent the continued shoreline erosion of Pelican Point and Shark Island in Iberia Parish. |
| PCWRP | | GIWW near Hanson Canal | SP | N/A | N/A | Gautreaux | Dartez | Ter. | 3 | 1991 | N/A | N/A | N/A | N/A | $113,152 | Brush fences were constructed to protect the shoreline along the GIWW near Hanson's Canal from boat-induced waves and erosion. Fences were originally constructed and filled in 1991 and maintenance was performed in 1992, 1993, 1998, and 2003. |
| PCWRP | | Atchafalaya River Delta | SP | N/A | N/A | Gautreaux | Smith | StM. | 1 | 1991 | N/A | N/A | N/A | N/A | $50,966 | Brush fences were constructed to promote the accumulation of sediment in an active delta. Fences were originally constructed and filled in 1991 and maintenance was performed in 1992, and 2003. |
| PCWRP | | Vermilion Bay and Rainey Wildlife Preserve | SP | N/A | N/A | Romero, Theunissen | Frith, Hebert | Ver. | 319 | 1993 | N/A | N/A | N/A | N/A | $126,815 | Vegetation has been planted along the shoreline and interior marsh along and adjacent to Vermilion Bay to protect the shoreline from continued erosion and to accumulate sediment to promote marsh creation. Fences were originally constructed and filled in 1993 and maintenance was performed in 1994, 1995, 1997, 1998, 1999, 2000, and 2003. |
| PCWRP | | Shark Bayou | SP | N/A | N/A | Romero | Hebert | Ibe. | 34 | 1996, 2003 | N/A | N/A | N/A | N/A | $17,250 | Vegetation was planted along 15,000 linear feet of the Weeks Bay shoreline near Shark Bayou to decrease shoreline erosion. |
| PCWRP | | Weeks Island at GIWW | SP | N/A | N/A | Romero | Hebert | Ibe. | 5 | 1992 | N/A | N/A | N/A | N/A | $135,381 | Brush fences were constructed to protect the shoreline and promote the accumulation of sediment adjacent to Weeks Island in Iberia Parish. Fences were originally constructed and filled in 1992 and maintenance was performed in 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001and 2003. |
| PCWRP | TV-02a | Hammock Lake | SP | N/A | N/A | Gautreaux | Smith | StM. | 6 | 1992 | N/A | N/A | N/A | N/A | $478,426 | Brush fences were constructed to prevent erosion of the shoreline separating West Cote Blanche Bay from Hammock Lake, and to protect the adjacent marsh from erosion. Fences were originally constructed and filled in 1992 and maintenance was performed in 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001and 2003. |
| PCWRP | | St. Martin Parish | SP | N/A | N/A | Romero | Hebert | Ibe. | 0 | 1993 | N/A | N/A | N/A | N/A | $135,900 | St. Martin Parish has partnered annually with Iberia Parish and worked together on their projects at Weeks Island and Shark Bayou. Fences were originally constructed and filled in 1993 and maintenance was performed in 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001and 2003. |

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| Vegetation | | Lake DeCade | VP | N/A | N/A | Dupre | Dartez | Ter. | 83 | 1988, 1989 | N/A | N/A | N/A | N/A | $3,354 | A total of 6,000 smooth cordgrass (*Spartina alterniflora* ) plants, 400 California bulrush (*Schoenoplectus californicus* ) plants, and 2,000 roseau cane (*Phragmites australis* ) plants were used to restore an eroding shoreline by providing a vegetation barrier against wave-induced erosion. |
| Vegetation | | Point au Chein | VP | N/A | N/A | Dupre | Pitre | Laf. | 17 | 1988, 1989 | N/A | N/A | N/A | N/A | $6,500 | A total of 12,290 smooth cordgrass (*Spartina alterniflora* ) plants were used to stabilize the bank behind newly constructed wave dampening devices. |
| Vegetation | | Timbalier Island | VP | N/A | N/A | Dupre | Baldone | Ter. | 133 | 1988 | N/A | N/A | N/A | N/A | $78,736 | A total of 11,600 marshhay cordgrass (*Spartina patens* ) plants were used on Timbalier Island to stabilize the sand, prevent its loss due to winds, and trap additional wind-borne sand. |
| Vegetation | | Jackson Bayou Wetlands | VP | N/A | N/A | Gautreaux | Smith | StM. | 5 | 1991 | N/A | N/A | N/A | N/A | $3,793 | A total of 785 smooth cordgrass (*Spartina alterniflora* ) plants and 35 giant cutgrass (*Zizaniopsis miliacea* ) plants were used to vegetate an open water area in the interior marsh. |
| Vegetation | | Vermilion/Weeks Bay | VP | N/A | N/A | Romero | Hebert | Ibe. | 92 | 1991 | N/A | N/A | N/A | N/A | $56,500 | A total of 20,000 smooth cordgrass (*Spartina alterniflora* ) plants were used to create a stand of vegetation that will protect the Weeks Bay shoreline from wave-induced erosion. |
| Vegetation | | Vermilion Bay North | VP | N/A | N/A | Romero | Hebert | Ver. | 17 | 1991 | N/A | N/A | N/A | N/A | $10,453 | A total of 3,000 smooth cordgrass (*Spartina alterniflora* ) plants were used to protect the north shore of Vermilion Bay from wave induced erosion. |
| Vegetation | | Levee Stabilization | VP | N/A | N/A | Dupre | Dartez | Ter. | 2 | 1991 | N/A | N/A | N/A | N/A | $2,825 | Six marsh grass species were planted on a spoilbank in Terrebonne Parish in order to stabilize the levee. These included common bermuda (*Cynodon dactylon* ), seashore saltgrass (*Distichlis spicata* ), marshhay cordgrass (*Spartina patens* ), Atlantic coastal panic grass (*Panicum* sp.), gulf cordgrass (*Spartina spartinae* ), and seashore paspalum (*Paspalum vaginatum* ). |
| Vegetation | | Wine Island | VP | N/A | N/A | Dupre | Baldone | Ter. | 24 | 1991, 1994, 1995 | N/A | N/A | N/A | N/A | $36,612 | A total of 2,500 smooth cordgrass (*Spartina alterniflora* ) plants, 400 black mangrove (*Avicennia germinans* ) trees, and 2,500 marshhay cordgrass (*Spartina patens* ) plants were used to vegetate newly deposited dredged material. |
| Vegetation | | Falgout Canal | VP | N/A | N/A | Dupre | Dartez | Ter. | 26 | 1992, 1997, 1998 | N/A | N/A | N/A | N/A | $15,153 | Smooth cordgrass (*Spartina alterniflora* ) was planted along the bank in 1992 and giant cutgrass (*Zizaniopsis miliacea* ) was planted in 1998 in order to re-establish an eroded pipeline canal bank. |
| Vegetation | | Bayou Petie Carlin | VP | N/A | N/A | Romero | Hebert | Ibe. | 65 | 1992 | N/A | N/A | N/A | N/A | $38,205 | A total of 4,635 smooth cordgrass (*Spartina alterniflora* ) plants and 1,000 seashore paspalum (*Paspalum vaginatum* ) plants were used to protect the shoreline of Bayou Petie Carlin from wave- induced erosion. |
| Vegetation | | Isles Dernieres | VP | N/A | N/A | Dupre | Baldone | Ter. | 275 | 1992 | N/A | N/A | N/A | N/A | $195,600 | A total of 25,000 smooth cordgrass (*Spartina alterniflora* ) plants were used on Trinity Island to stabilize the dune, prevent loss of sand due to winds, and trap additional wind-borne sand. |
| Vegetation | | Lake Boudreaux | VP | N/A | N/A | Dupre | Baldone | Ter. | 18 | 1992, 1994 | N/A | N/A | N/A | N/A | $10,543 | A total of 1,555 smooth cordgrass (*Spartina alterniflora* ) plants were used to protect and stabilize a levee through the establishment of vegetation material. |
| Vegetation | | Montegut | VP | N/A | N/A | Dupre | Baldone | Ter. | 8 | 1993, 1996 | N/A | N/A | N/A | N/A | $4,949 | A total of 730 smooth cordgrass (*Spartina alterniflora* ) plants were used to provide shoreline stability to an area of the Montegut levee where approximately 200 feet of sheetpile was installed. |

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| Vegetation | | Petite Anse sites 5,6,7,8,9, and 15 | VP | N/A | N/A | Romero | Hebert | Ibe. | 282 | 1994, 1995, 1998, 2000, 2001 | N/A | N/A | N/A | N/A | $194,008 | A total of 56,000 smooth cordgrass (*Spartina alterniflora* ) plants and 600 California bulrush (*Schoenoplectus californicus* ) plants were used at several projects in order to re-vegetate mud flats, stabilize new spoil, protect the shoreline, and trap sediment with established vegetation. |
| Vegetation | | Thibodaux Oxbow | VP | N/A | N/A | Romero | Hebert | Ibe. | 5 | 1994 | N/A | N/A | N/A | N/A | $3,774 | A total of 1,140 smooth cordgrass (*Spartina alterniflora* ) plants were used to re-vegetate mud flats and stabilize new spoil. |
| Vegetation | | Bayou Milhomme | VP | N/A | N/A | Romero | Smith | StM. | 5 | 1994 | N/A | N/A | N/A | N/A | $2,949 | A total of 435 California bulrush (*Schoenoplectus californicus* ) plants were used along the protection levee on Bayou Milhomme to establish a buffer against additional shoreline erosion. |
| Vegetation | | L.L. & E. TC-T3 | VP | N/A | N/A | Gautreaux | Dartez | Ter. | 1 | 1994 | N/A | N/A | N/A | N/A | $509 | A total of 75 California bulrush (*Schoenoplectus californicus* ) plants were used to retain flotant and detrital material in a freshwater marsh to use as a low energy method of retaining detritus, and to form plugs in spoil levee breeches. |
| Vegetation | | Fourleague Bay | VP | N/A | N/A | Dupre | Dartez | Ter. | 5 | 1995 | N/A | N/A | N/A | N/A | $2,712 | A total of 400 smooth cordgrass (*Spartina alterniflora* ) plants were used to protect a segment of Fourleague Bay shoreline from wind-generated wave erosion. |
| Vegetation | | Blue Hammock | VP | N/A | N/A | Dupre | Dartez | Ter. | 2 | 1995 | N/A | N/A | N/A | N/A | $1,356 | This project was designed to prevent shoreline erosion by establishing a stand of smooth cordgrass (*Spartina alterniflora* ); 200 plants were installed within the intertidal zone. |
| Vegetation | | Hidalgo | VP | N/A | N/A | Gautreaux | Smith | StM. | 60 | 1995, 1997, 1999 | N/A | N/A | N/A | N/A | $35,161 | A total of 2,120 smooth cordgrass (*Spartina alterniflora* ) plants, 1,533 California bulrush (*Schoenoplectus californicus* ) plants, and 1,533 giant cutgrass (*Zizaniopsis miliacea* ) plants were used to establish a stand of emergent vegetation that will prevent shoreline erosion and trap available sediment. |
| Vegetation | | Bayou DeCade - Roseau | VP | N/A | N/A | Dupre | Dartez | Ter. | 5 | 1995 | N/A | N/A | N/A | N/A | $2,712 | A total of 400 roseau cane (*Phragmites australis* ) plants were used to increase protection to this embankment by providing soil stability through a potentially extensive rootmass. |
| Vegetation | | Bayou Sale '96 | VP | N/A | N/A | Gautreaux | Smith | StM. | 2 | 1996 | N/A | N/A | N/A | N/A | $1,085 | A total of 800 California bulrush (*Schoenoplectus californicus* ) plants were used to establish a stand of emergent vegetation that will prevent shoreline erosion and trap available sediment. |
| Vegetation | | H-H | VP | N/A | N/A | Gautreaux | Dartez | Ter. | 6 | 1996 | N/A | N/A | N/A | N/A | $3,390 | A total of 300 giant cutgrass (*Zizaniopsis miliacea* ) plants and 200 California bulrush (*Schoenoplectus californicus* ) plants were used alongside a canal situated in a fresh marsh. |
| Vegetation | | Jaws | VP | N/A | N/A | Gautreaux | Smith | StM. | 7 | 1996, 1999 | N/A | N/A | N/A | N/A | $4,068 | A total of 600 California bulrush (*Schoenoplectus californicus* ) plants were used to establish a stand of emergent vegetation that will trap available sediment and prevent the loss of the sediment already established. |
| Vegetation | | St. Mary Land Co. '96 and #3 | VP | N/A | N/A | Gautreaux | Smith | StM. | 36 | 1996 | N/A | N/A | N/A | N/A | $21,018 | A total of 3,100 California bulrush (*Schoenoplectus californicus* ) plants were used to establish a stand of emergent vegetation that will prevent shoreline erosion and trap available sediment. |
| Vegetation | | Bayou Carlin | VP | N/A | N/A | Romero | Hebert | Ibe. | 24 | 1996 | N/A | N/A | N/A | N/A | $14,069 | A total of 2,075 smooth cordgrass (*Spartina alterniflora* ) plants were used to establish a stand of emergent vegetation that will prevent shoreline erosion and trap available sediment. |

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| Vegetation | | Bayou Piquante | VP | N/A | N/A | Gautreaux | Dartez | Ter. | 2 | 1996 | N/A | N/A | N/A | N/A | $1,220 | A total of 180 California bulrush (*Schoenoplectus californicus* ) plants were used to re-establish emergent vegetation on a natural bayou bank, provide a buffer for boat-generated waves, and filter suspended detrital material so that it is retained within the interior marsh. |
| Vegetation | | Washout | VP | N/A | N/A | Romero | Hebert | Ibe. | 3 | 1997 | N/A | N/A | N/A | N/A | $1,627 | A total of 60 roseau cane (*Phragmites australis* ) plants and 180 smooth cordgrass (*Spartina alterniflora* ) plants were used to establish a stand of emergent vegetation that will create a living barrier against wave-induced shoreline erosion and protect an area where the Vermilion Bay shoreline is in danger of breaching into an adjacent oilfield canal. |
| Vegetation | | Tiger Lagoon #1 and #2 | VP | N/A | N/A | Romero | Hebert | Ibe. | 37 | 1997, 2000 | N/A | N/A | N/A | N/A | $26,306 | A total of 5,980 smooth cordgrass (*Spartina alterniflora* ) plants were used to establish a stand of emergent vegetation that will prevent shoreline erosion and trap available sediment. |
| Vegetation | | Lake Hatch GIWW | VP | N/A | N/A | Dupre | Dartez | Ter. | 6 | 1997 | N/A | N/A | N/A | N/A | $3,390 | A total of 500 California bulrush (*Schoenoplectus californicus* ) were used to create a living natural barrier across breeches in the Intercoastal Canal levee which allows wave energy to destroy fragile, organic freshwater marsh behind the levee. |
| Vegetation | | Bayou Blue Bullwhip | VP | N/A | N/A | Dupre | Pitre | Ter. | 23 | 1998 | N/A | N/A | N/A | N/A | $13,560 | A total of 200 smooth cordgrass (*Spartina alterniflora* ) plants, 2,480 California bulrush (*Schoenoplectus californicus* ) plants, and 200 roseau cane (*Phragmites australis* ) plants were used to re-establish emergent vegetation on a natural bayou bank, provide a buffer for boat generated waves, and filter suspended detrital material so that it is retained within the interior marsh. |
| Vegetation | | Humble Canal | VP | N/A | N/A | Gautreaux | Smith | StM. | 23 | 1998 | N/A | N/A | N/A | N/A | $13,560 | A total of 2,000 California bulrush (*Schoenoplectus californicus* ) plants were used to create a stand of emergent vegetation that will provide a living barrier against wave-induced marsh erosion. |
| Vegetation | | Bayou Chauvin Pipe Canal | VP | N/A | N/A | Dupre | Dartez | Ter. | 21 | 1998, 2000 | N/A | N/A | N/A | N/A | $12,543 | A total of 850 California bulrush (*Schoenoplectus californicus* ) plants and 1,000 smooth cordgrass (*Spartina alterniflora* ) plants were used to reduce boat-induced shoreline erosion on the edge of a pipeline canal. |
| Vegetation | | Houma Navigation Canal | VP | N/A | N/A | Dupre | Dartez | Ter. | 32 | 1999 | N/A | N/A | N/A | N/A | $18,984 | A total of 2,800 smooth cordgrass (*Spartina alterniflora* ) plants were used along the shoreline of the Houma Navigation Canal in order to buffer boat-wave energy and decrease bank erosion. |
| Vegetation | | Company Canal Levee | VP | N/A | N/A | Dupre | Pitre | Laf. | 31 | 2000 | N/A | N/A | N/A | N/A | $18,306 | A total of 2,700 giant cutgrass (*Zizaniopsis miliacea* ) were used along Company Canal to establish a vegetation barrier, slow shoreline erosion, and provide seed for natural revegetation. |
| Vegetation | | Shell Canal | VP | N/A | N/A | Dupre | Baldone | Ter. | 74 | 2000 | N/A | N/A | N/A | N/A | $43,392 | A total of 4,400 smooth cordgrass (*Spartina alterniflora* ) plants and 2,000 giant cutgrass (*Zizaniopsis miliacea* ) plants were used to re-vegetate an interior marsh that has subsided near the canal bank and to protect a narrow shoreline which is beginning to erode into the adjacent marsh. |
| Vegetation | | Cocodrie Pump-in | VP | N/A | N/A | Dupre | Baldone | Ter. | 23 | 2000 | N/A | N/A | N/A | N/A | $13,560 | A total of 1,000 California bulrush (*Schoenoplectus californicus* ) plants and 1,000 smooth cordgrass (*Spartina alterniflora* ) plants were used to establish vegetation on a new pump-in area. |
| Vegetation | | Oaks Canal | VP | N/A | N/A | Romero | Hebert | Ver. | 36 | 2000 | N/A | N/A | N/A | N/A | $26,442 | A total of 5,200 smooth cordgrass (*Spartina alterniflora* ) plants were used to produce a living barrier of vegetation that will slow erosion of canal banks and levees, accrete available sediment, provide habitat for wildlife, and make a seed source available for natural regeneration. |

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| Vegetation | | Luke Landing | VP | N/A | N/A | Gautreaux | Smith | StM. | 12 | 2000 | N/A | N/A | N/A | N/A | $6,780 | A total of 1,000 smooth cordgrass (*Spartina alterniflora* ) plants were used to create stands of emergent vegetation, provide a living barrier against boat and wave-induced erosion, trap sediment, and provide a seed source for natural regeneration of emergent vegetation. |
| Vegetation | | Bayou Carlin - GIWW | VP | N/A | N/A | Romero | Hebert | Ibe. | 20 | 2001 | N/A | N/A | N/A | N/A | $10,202 | A total of 1,800 California bulrush (*Schoenoplectus californicus* ) plants were placed along Bayou Carlin between Commercial Canal and the GIWW to re-establish the shoreline of Bayou Carlin, slow water movement along the shoreline, and allow for additional sediment accumulation. |
| Vegetation | | Lake Cheniere Interior Marsh Demonstration | VP | N/A | N/A | Dupre | Baldone | Laf. | 10 | 2001 | N/A | N/A | N/A | N/A | $32,723 | Both black mangrove (*Avicennia germinans* ) and smooth cordgrass (*Spartina alterniflora* ) were planted on the shoreline of Lake Cheniere, near Point aux-Chenes, to create a buffer against shoreline erosion. |
| Vegetation | | Hammock Bayou | VP | N/A | N/A | Gautreaux | Smith | StM. | 6 | 2001 | N/A | N/A | N/A | N/A | $6,273 | A total of 1,640 smooth cordgrass (*Spartina alterniflora* ) plants were placed along Hammock Bayou near its confluence with West Cote Blanche to decrease the rate of shoreline erosion, stabilize the bank of Hammock Bayou, and to trap additional sediment. |
| Vegetation | | Hammock Lake | VP | N/A | N/A | Gautreaux | Smith | StM. | 4 | 2001 | N/A | N/A | N/A | N/A | $21,173 | A total of 360 smooth cordgrass (*Spartina alterniflora* ) plants were placed along the shoreline of Hammock Lake near Cypremort Point in order to accrete additional sediment and protect the shoreline of Hammock Lake from further erosion. An added benefit of this project is the protection of an isolated population of leafy three-square (*Scirpus robustus* ), a beneficial species for wildlife. |
| Vegetation | | Colony Establishment Demonstration | VP | N/A | N/A | Gautreaux | Smith | StM. | 7 | 2001 | N/A | N/A | N/A | N/A | $3,500 | A total of 1,000 smooth cordgrass (*Spartina alterniflora* ) plants were placed near Oyster Lake in an expansive mud flat, approximately two miles southeast of Cypremort Point, between Hammock Lake and Oyster Lake. Vegetation was planted in a grid formation to encourage ongoing, self-sustaining marsh growth in this particular shallow-water area, and to provide additional fisheries and wildlife habitat. |
| Vegetation | | Round Lake | VP | N/A | N/A | Gautreaux | Smith | StM. | 6 | 2001 | N/A | N/A | N/A | N/A | $3,606 | A total of 560 smooth cordgrass (*Spartina alterniflora* ) plants were placed along the shoreline of Round Lake, an interior lake located about three miles southeast of Cypremort Point, in order to reduce tidal exchange into the marsh, trap available sediment, and provide seed for natural revegetation. |
| Vegetation | | Parish Line Canal | VP | N/A | N/A | Romero | Hebert | Ver. | 23 | 2001 | N/A | N/A | N/A | N/A | $11,204 | A total of 2,000 smooth cordgrass (*Spartina alterniflora* ) plants were placed along Parish Line Canal, just west of the Iberia/Vermilion parish line, to provide a buffer against shoreline erosion and trap available sediment. |
| Vegetation | | Bayou Folse | VP | N/A | N/A | Dupre | Triche | Laf. | 34 | 2002 | N/A | N/A | N/A | N/A | $24,000 | This project consists of a canal bank planting using 1,000 trade gallon containers of giant cutgrass (*Zizaniopsis miliacea* ) and an interior marsh planting using 2,000 trade gallon containers of California bulrush (*Schoenoplectus californicus* ) to create a vegetative buffer along the new spoil material on Bayou Folse and to restore interior vegetation in interior ponds; 15,000 linear feet were planted. |
| Vegetation | | Grand Bayou | VP | N/A | N/A | Dupre | Pitre | Laf. | 11 | 2002 | N/A | N/A | N/A | N/A | $8,000 | This canal bank planting used 1,000 trade gallon containers of California bulrush (*Schoenoplectus californicus* ) to create a vegetative buffer against wind and boat generated wave energy; 5,000 linear feet of canal bank were planted. |

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| Vegetation | | Lake Boudreaux | VP | N/A | N/A | Dupre | Dartez | Ter. | 11 | 2002 | N/A | N/A | N/A | N/A | $8,000 | This canal bank planting used 1,000 trade gallon containers of smooth cordgrass (*Spartina alterniflora* ) to provide a vegetative buffer against wind- and boat-generated wave energy; 5,000 ft of canal bank were planted using 1,000 trade gallon containers of smooth cordgrass on 5ft centers. |
| Vegetation | | Bayou Colyell | VP | N/A | N/A | Dupre | Dartez | Ter. | 7 | 2002 | N/A | N/A | N/A | N/A | $4,800 | This canal bank planting used 600 trade gallon containers of smooth cordgrass (*Spartina alterniflora* ) to create a vegetative buffer against wind- and boat-generated wave energy; 3,000 linear feet of canal bank were planted. |
| Vegetation | | GIWW Cypress Restoration | VP | N/A | N/A | Dupre | Pitre | Laf. | 11 | 2002 | N/A | N/A | N/A | N/A | $4,000 | This canal bank planting used 500 bare root bald cypress seedlings ( *Taxodium distichum* ) to restore a vegetative corridor along the GIWW; 5,000 linear feet of canal bank were planted. |
| Vegetation | | Falgout Canal Flotant | VP | N/A | N/A | Dupre | Dartez | Ter. | 11 | 2002 | N/A | N/A | N/A | N/A | $10,600 | This interior marsh demonstration used 800 trade gallon containers of California bulrush (*Schoenoplectus californicus* ) and 600 feet of coconut fiber matting plugged with 300 giant cutgrass (*Zizaniopsis miliacea* ) plugs to demonstrate the use of fiber matting to restore and establish floating marsh and to show the use of vegetative terraces to filter sediment and reduce wave energy; 4,600 linear feet of interior marsh were planted. |
| Vegetation | | Union Oil Canal | VP | N/A | N/A | Romero | Hebert | Ibe. | 23 | 2002 | N/A | N/A | N/A | N/A | $13,400 | This eroding canal bank was planted with 3,350 smooth cordgrass (*Spartina alterniflora* ) plugs to produce a living barrier to slow the erosion of the canal banks and protect the interior marsh behind the banks, and to compare the effectiveness of plantings on the banks with and without trees; 10,050 linear feet were planted. |
| Vegetation | | GIWW Delcambre | VP | N/A | N/A | Romero | Hebert | Ibe. | 12 | 2002 | N/A | N/A | N/A | N/A | $8,560 | Several actively eroding areas along the GIWW were planted with a total of 700 unanchored and 900 anchored trade gallon containers of smooth cordgrass (*Spartina alterniflora* ) to demonstrate the ability of the plant to produce a living barrier against erosion, and to accrete available sediment and establish stands of vegetation to serve as a seed source for natural revegetation; 5,350 linear feet were planted. |
| Vegetation | | Avoca Island | VP | N/A | N/A | Gautreaux | Dartez | StM. | 10 | 2002 | N/A | N/A | N/A | N/A | $7,040 | A total of 880 trade gallon containers of giant cutgrass (*Zizaniopsis miliacea* ) were planted in several areas to slow erosion and protect interior marshes; a total of 4,400 linear feet were planted. |
| Vegetation | | Gray Duck Hole | VP | N/A | N/A | Gautreaux | Dartez | StM. | 12 | 2002 | N/A | N/A | N/A | N/A | $8,480 | A total of 1,060 trade gallon containers of giant cutgrass (*Zizaniopsis miliacea* ) were planted along an eroding levee and on islands that protect an interior marsh. This was done to create a living barrier of plants to slow erosion on the levee and on the islands, to provide wildlife habitat, and to provide a seed source for natural revegetation; 5,300 linear feet were planted. |
| Vegetation | | Treyne | VP | N/A | N/A | Gautreaux | Dartez | StM. | 14 | 2002 | N/A | N/A | N/A | N/A | $9,600 | A total of 1,200 trade gallon containers of giant cutgrass (Zizaniopsis miliacea) plants were placed across an eroding marsh area to slow water movement into and out of the area, to allow sediment to drop out of the flowing water, to encourage growth of submerged aquatic vegetation to grow, and to accrete available sediment to slow sedimentation of the interior open water area; 6,000 linear feet were planted. |

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| Vegetation | | Boy Scout Camp | VP | N/A | N/A | Gautreaux | Dartez | StM. | 2 | 2002 | N/A | N/A | N/A | N/A | $1,600 | A total of 200 trade gallon containers of giant cutgrass (*Zizaniopsis miliacea* ) were planted in large cells to create islands of vegetation to create vegetative cells, to provide emergent vegetation in an open water area, and to determine the feasibility of using giant cutgrass to create vegetative terraces; 1,000 linear feet were planted. |
| Vegetation | | Delcambre Terrace Demo | VP | N/A | N/A | Romero | Hebert | Ver. | 12 | 2002 | N/A | N/A | N/A | N/A | $4,320 | This demonstration project used 1,080 plugs of smooth cordgrass (*Spartina alterniflora* ) to establish vegetation on newly built terraces to prevent their erosion, to provide wildlife habitat, and to determine the effectiveness of smooth cordgrass in stabilizing small terraces; 5,400 linear feet were planted. |
| Vegetation | | Vermilion Maintenance | VP | N/A | N/A | Romero | Hebert | Ver. | 11 | 2002 | N/A | N/A | N/A | N/A | $6,132 | This project filled gaps left when the Oaks Canal, Camp Canal, and Parish Line Canal projects were planted. A total of 1,533 trade gallon containers of smooth cordgrass (*Spartina alterniflora* ) plugs were used to provide a continuous living barrier of plants to slow erosion of canal banks and levees, and to fill in gaps and areas with poorer survival; 4,600 linear feet were planted. |
| Vegetation | | Castex Water Management Protection Project | VP | N/A | N/A | Dupre | Dartez | Ter. | 23 | 2003 | N/A | N/A | N/A | N/A | $16,000 | A total of 2,000 trade gallon containers of California bulrush (*Schoenoplectus californicus* ) plants were used to form a vegetative barrier in the interior marsh which will prevent scouring caused by flap gates recently installed to manage water levels. |
| Vegetation | | Delcambre Canal | VP | N/A | N/A | Romero | Hebert | Ver. | 28 | 2003 | N/A | N/A | N/A | N/A | $19,680 | A total of 2,120 trade gallon containers of smooth cordgrass (*Spartina alterniflora* ) and 340 trade gallon containers of giant cutgrass (*Zizaniopsis miliacea* ) were planted along the banks of Delcambre Canal to slow shoreline erosion and trap available sediments. |
| Vegetation | | Catfish Bayou South | VP | N/A | N/A | Romero | Hebert | Ibe. | 6 | 2003 | N/A | N/A | N/A | N/A | $3,332 | A total of 833 plugs of smooth cordgrass (*Spartina alterniflora* ) were planted to slow erosion on the bayou bank and to trap available sediments. |
| Vegetation | | Gray Duck Hole 2 | VP | N/A | N/A | Gautreaux | Dartez | StM. | 23 | 2003 | N/A | N/A | N/A | N/A | $16,000 | A total of 800 trade gallon containers of giant cutgrass (*Zizaniopsis miliacea* ) and 1,200 trade gallon containers of California bulrush (*Schoenoplectus californicus* ) were planted to create a living barrier to slow erosion on a newly rebuilt levee and to create vegetative terraces in a large pond. |
| Vegetation | | Burns Point 2 | VP | N/A | N/A | Gautreaux | Smith | StM. | 1 | 2003 | N/A | N/A | N/A | N/A | $720 | A total of 90 trade gallon containers of California bulrush (*Schoenoplectus californicus* ) were planted north of Burns Point to create an emergent stand of vegetation that will reduce wave induced shoreline erosion. |
| Vegetation | | Brady Canal 2 | VP | N/A | N/A | Gautreaux | Smith | Ter. | 11 | 2003 | N/A | N/A | N/A | N/A | $8,000 | Approximately 1,000 trade gallon containers of giant cutgrass (*Zizaniopsis miliacea* ) were planted to create a vegetative buffer along the interior side of a levee system. |
| Vegetation | | Lapeyrouse Canal | VP | N/A | N/A | Dupre | Dartez | Ter. | 51 | 2003 | N/A | N/A | N/A | N/A | $750 | A total of 700 bare root trees including cypress (*Taxodium distichum* ) nutall oak (*Quercus nuttallii* ) live oak (*Quercus wislizeni* ) and 800 containers of shrubs were planted to establish vegetation on a spoil bank for stabilization purposes. |
| Vegetation | | East Cote Blanche Shoreline Stabilization | VP | N/A | N/A | Gautreaux | Smith | StM. | 9 | 2003 | N/A | N/A | N/A | N/A | $6,400 | A total of 400 trade gallon containers of giant cutgrass (*Zizaniopsis miliacea* ) and 400 gallons of roseau cane (*Phragmites australis* ) were planted to determine the effectiveness of both species in preventing erosion on the eastern bank of East Cote Blanche Bay. |
| Vegetation | | Delcambre Terraces 2 | VP | N/A | N/A | Romero | Hebert | Ver. | 7 | 2003 | N/A | N/A | N/A | N/A | $5,000 | A total of 500 plugs of smooth cordgrass (*Spartina alterniflora* ) and 500 four inch pots of saltgrass (*Distichlis spicata* ) were planted to establish vegetation on newly built terraces to prevent erosion. |

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| Vegetation | | Audubon Terraces | VP | N/A | N/A | Theunissen | Frith | Ver. | 10 | 2003 | N/A | N/A | N/A | N/A | $5,800 | Approximately 1,450 plugs of smooth cordgrass (*Spartina alterniflora* ) were planted to establish vegetation on newly built terraces to prevent erosion and increase wildlife habitat. |
| Section 204/1135 | DSR-81558 | Wine Island Restoration | DM | N/A | N/A | Dupre | Baldone | Ter. | 37 | 1991 | N/A | N/A | N/A | N/A | $1,007,000 | This Section 1135 project was a cooperative effort with the USACE in the use of beneficial dredging from a scheduled Houma Navigational Canal maintenance dredging project. Wine Island was restored with the beneficial use of dredged material. |
| Section 204/1135 | | Houma Navigation Canal, Wine Island Barrier Island Restoration | DM | N/A | N/A | Dupre | Baldone | Ter. | 50 | 2002 | N/A | N/A | N/A | N/A | $1,000,000 | This Section 204 project investigated the feasibility of beneficially using the dredged material from the bar channel area in lieu of the Ocean Dredged Material Disposal Site. The project area is approximately 35 miles south of Houma, Louisiana at the mouth of the navigation channel in Terrebonne Bay. The construction schedule of this project was expedited due to the impact of Hurricane Lili and Tropical Storm Isodore. |
| FEMA | DSR-81557 | Houma Navigational Canal Levee Maintenance (FEMA) | SP | N/A | N/A | Dupre | Baldone | Ter. | 4,000 | 1995 | N/A | N/A | N/A | N/A | $218,165 | This FEMA project involved the repair of segments of the western bank of the Houma Navigational Canal damaged by Hurricane Andrew in 1992. |
| FEMA | DSR-81558 | Wine Island (FEMA) | DM | N/A | N/A | Dupre | Baldone | Ter. | 25 | 1995 | N/A | N/A | N/A | N/A | $253,579 | This FEMA project was a cooperative venture with the USACE in the use of beneficial dredging from a scheduled Houma Navigational Canal maintenance dredging project. The island was repaired to pre-Hurricane Andrew condition and planted with vegetation to stabilize the sediment. |
| FEMA | DSR-81560 | East Island Repair Protection (FEMA) | DM | N/A | N/A | Dupre | Dartez | Ter. | 25 | 1996 | N/A | N/A | N/A | N/A | $633,179 | This FEMA project constructed an elevated marsh platform in an area of a Terrebonne Parish project destroyed by Hurricane Andrew in 1992. Vegetation was also planted to stabilize the sand. |
| FEMA | DSR-81559 | Timbalier Island Repair (FEMA) | DM | N/A | N/A | Dupre | Baldone | Ter. | 70 | 1996 | N/A | N/A | N/A | N/A | $551,653 | This FEMA project closed a major breach created by Hurricane Andrew and provided a 300-foot-wide elevated marsh platform to stabilize the island. Vegetation was also planted to stabilize the sand. |
| FEMA | DSR-81784 | Timbalier Island (FEMA 1999) | SP | N/A | N/A | Dupre | Baldone | Ter. | N/A | 2000 | N/A | N/A | N/A | N/A | $181,394 | This FEMA project repaired sand fencing on Timbalier Island destroyed during a series of tropical storms and hurricanes in the fall of 1998. |
| FEMA | DSR-81785 | Falgout Canal (FEMA 1999) | MM | N/A | N/A | Dupre | Baldone | Ter. | N/A | 2000 | N/A | N/A | N/A | N/A | $7,070 | This FEMA project replaced flap gates on water control structures damaged during tropical storms and hurricanes in the fall of 1998. The installation of the new flapgate culverts was completed by Terrebonne Parish Consolidated Government. |
| FEMA | DSR-81786 | East Island (FEMA 1999) | VP | N/A | N/A | Dupre | Baldone | Ter. | N/A | 2000 | N/A | N/A | N/A | N/A | $89,940 | This FEMA project involved the planting of marsh vegetation on the dune and Lake Pelto shoreline of East Island. This area is part of a CWPPRA project damaged by a series of tropical storms and hurricanes in the fall of 1998. A total of 4,280 smooth cordgrass (*Spartina alterniflora* ), 500 black mangrove (*Avicennia germinans* ), and 6,147 roseau cane (*Phragmites australis* ) were planted in April 2000. |

| Program | State Project Number (Federal) | Project Name | Project Type | PPL | Agency/Sponsor | Senator | Representative | Parish | Acres Benefitted | Construction Completion Date | Engineering, Design, & Landrights Cost | Construction Cost | Operation, Maintenance, & Monitoring Cost | Baseline Cost Estimate | Current Cost Estimate | Project Summary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FEMA | DSR-81787 | Whiskey Island (FEMA 1999) | SP | N/A | N/A | Dupre | Baldone | Ter. | 1,259 | 2000 | N/A | N/A | N/A | N/A | $581,566 | This FEMA project involved the installation of sand fencing and the planting of vegetation to repair areas of Whiskey Island damaged by tropical storms and hurricanes during the fall of 1998. This area is part of a CWPPRA project area and CWPPRA funds were combined with the FEMA funds for repairs. Repairs were completed in August 2000. |
| Other | | Brown Marsh Small Dredge Marsh Creation Project | MC | N/A | N/A | Pitre | Dupre | Laf. | 44 | 2002 | N/A | N/A | N/A | N/A | $473,365 | The project features consisted of a thin layer marsh creation/nourishment project over 44 acres in Lafourche Parish. |

Program: Breaux Act=Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA); State=Restoration projects funded primarily by the State of Louisiana through the Coastal Restoration Division; PCWRP=Parish Coastal Wetlands Restoration Program (Christmas Tree Program); Vegetation=DNR/NRCS/SWCC Vegetation Planting Program; Section 204/1135= Water Resource Development Act Sections 204 and 1135 beneficial use of dredged material projects; WRDA=Water Resources Development Act; Mitigation=mitigation projects implemented by the Coastal Restoration Division; Dedicated Dredging Program= State project LA-01 (see Table 5).

Project Type: HR=Hydrologic Restoration; DM=Beneficial Use of Dredged Material; MM=Marsh Management; MC=Marsh Creation; SP=Shoreline Protection; FD=Freshwater Diversion; VP=Vegetation Planting; SNT=Sediment and Nutrient Trapping; OM=Outfall Management; BI=Barrier Island; SD=Sediment Diversion.

PPL: Priority Project List (as authorized each year by the Breaux Act Task Force).

Agency/Sponsor: EPA=Environmental Protection Agency; NMFS=National Marine Fisheries Service; NRCS=Natural Resources Conservation Service; NWRC=National Wetlands Research Center; USFWS=U.S. Fish and Wildlife Service; USACE=U.S. Army Corps of Engineers.

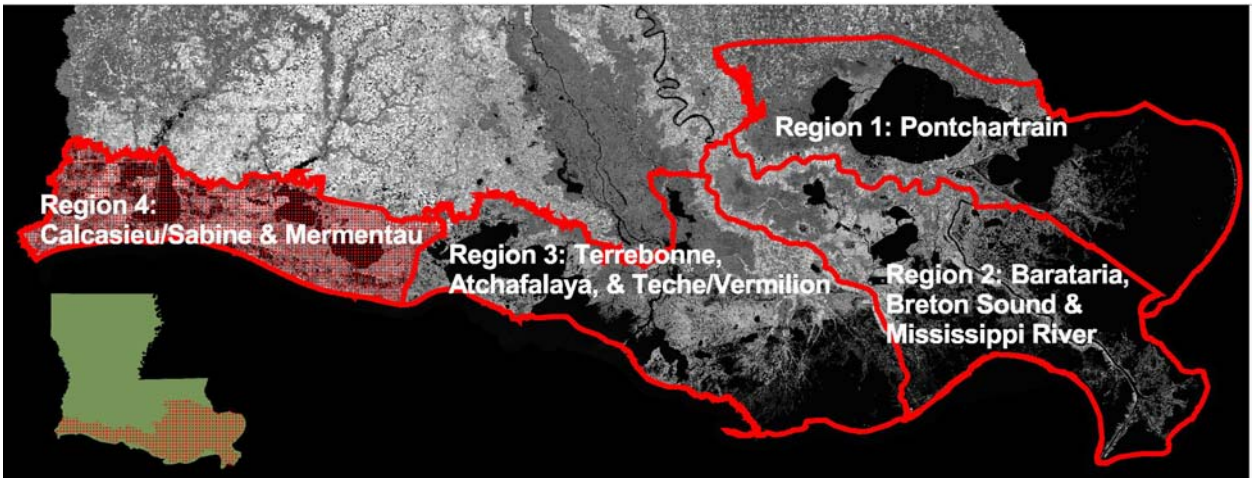
Parish: Asc.=Ascension, Asu.=Assumption, Cam.=Cameron, Ibe.=Iberia, Jef.=Jefferson, Laf.=Lafourche, Orl.=Orleans, Plaq.=Plaquemines, StB.=St. Bernard, StC.=St. Charles, StJo.=St. John the Baptist, StM.=St. Mary, StT.=St. Tammany, Tan.=Tangipahoa, Ter.=Terrebonne, Ver.=Vermilion.

Anticipated Acres Benefitted: N/A for Breaux Act demonstration and deauthorized projects.

Baseline Cost Estimates and Current Cost Estimates for Breaux Act projects are from the USACE. Costs for other restoration programs are from DNR's Contract and Budget Section. Baseline Cost and Current Cost Estimate both include contingency funds. Beginning with Breaux Act PPL 10, project costs are for Phase I only. Vegetation program project costs are estimated based on plant size and quantity.

N/A=Not Applicable.

# REGION 4




## INTRODUCTION

Region 4 includes the Mermentau and Calcasieu/Sabine hydrologic basins and contains approximately 768,210 acres of coastal wetlands. This region extends from the western bank of the Freshwater Bayou Canal, westward to the Louisiana/Texas border in Sabine Lake, and from the marshes just north of the GIWW, south to the Gulf of Mexico. This region covers all or part of Vermilion, Cameron, and Calcasieu parishes.

The wetlands in Region 4 are classified as approximately 520 acres of cypress-tupelo swamps, 9,590 acres of bottomland hardwood forests, 354,600 acres of fresh marshes, 171,700 acres of intermediate marshes, 198,600 acres of brackish marshes, and 33,200 acres of saline marshes.

Estimates of wetland loss from Region 4 indicate that between 1990 and 2000, a total of 34,688 acres of wetlands were lost (an average of 3,468 acres per year).

The Mermentau Basin extends from Freshwater Bayou Canal westward to Louisiana Highway 27, and is divided into two sub-basins, the Lakes Sub-basin north of the Grand Chenier ridge complex, and the Chenier Sub-basin to the south. The basin's primary source of freshwater inflow is the Mermentau River. The natural drainage of the Lakes Sub-basin has been interrupted by canals and water control structures. The sub-basin contains Grand and White lakes, and functions similar to a freshwater reservoir. Drainage occurs eastward to Freshwater Bayou Canal, southward to the Gulf of Mexico, and westward to the Mermentau River and Calcasieu Ship Channel.

The Calcasieu/Sabine Basin is a shallow, coastal wetland system with freshwater input at the north end from the Sabine and Calcasieu rivers. Water circulates between Calcasieu and Sabine lakes via the GIWW and interior canals. Both lakes are connected to important shipping corridors and are also used for recreation. As in the Mermentau Basin, many wetlands in this basin are actively managed, with water control structures in the Cameron-Creole Watershed, Sabine National Wildlife Refuge, and on private lands.

The major objectives within this region are to reduce the salinities of the marsh habitats in the western and southern areas and to convert most of the Lakes Sub-

basin to fresh marsh. The objective for the Chenier Sub-basin is to convert the existing saline and brackish marshes to brackish and intermediate marshes respectively by the year 2050. The overall objective for the Calcasieu/Sabine Basin is to create fresher conditions by the year 2050. Coast 2050 identified specific ecosystem strategies for protecting and sustaining the region's coastal resources. These specific ecosystem strategies can be grouped into one of the following five general categories: restoring and sustaining wetlands, controlling salinity in the Calcasieu/Sabine Basin, protecting bay and lake shorelines, restoring and maintaining barrier islands and shorelines, and maintaining critical landforms.

**PROJECT INFORMATION**

A total of 129 restoration projects have been authorized for Region 4 (Table 4). Project specific information is presented below, organized by project funding source.

*Breaux Act*

A total of 33 projects have been authorized under the direction of the Breaux Act in Region 4, which are anticipated to benefit 26,745 acres of wetlands at a cost of $99,246,747. Projects constructed in Region 4 under the Breaux Act this year are Pecan Island Terracing (ME-14) and Humble Canal Hydrologic Restoration (ME-11).

Nine Breaux Act projects address marsh loss caused by changes in natural hydrology. Previously constructed projects are Cameron-Creole Maintenance (CS-04a), Humble Canal Hydrologic Restoration (ME-11), Cameron/Creole Plugs (CS-17), Black Bayou Hydrologic Restoration (CS-27), and Freshwater Bayou Wetland Protection (ME-04). More recently, the following four projects have been authorized and are currently in the design phase: East Sabine Lake Hydrologic Restoration (CS-32), Black Bayou Culverts Hydrologic Restoration (CS-29), Freshwater Introduction South of Hwy 82 (ME-16), and Little Pecan Bayou Hydrologic Restoration (ME-17). In an attempt to address problems associated with saltwater intrusion and marsh impoundment, these projects focus on changing human-altered drainage patterns back to their more natural state.

Four Breaux Act marsh management projects address the conversion of marshes to open water and changes in marsh vegetation. The three constructed projects are East Mud Lake Marsh Management (CS-20), Highway 384 Hydrologic Restoration (CS-21), and Replace Sabine Refuge Water Control Structures at Headquarters Canal, West Cove Canal, and Hog Island Gully (CS-23). Brown Lake Hydrologic Restoration (CS-09) is still in the engineering and design phase. These projects are intended to return marshes to their more natural hydrologic state through the use of structures that control water exchange. Additionally, vegetation plantings have been used to reduce shoreline erosion and stabilize fragile erodible soils.

Eleven Breaux Act projects in this region address shoreline erosion. The projects that have been constructed are Sabine National Wildlife Refuge Erosion Protection (CS-18), Clear Marais Bank Protection (CS-22), Perry Ridge Shore Protection (CS-24), Sweet Lake/Willow Lake Hydrologic Restoration (CS-11b), Cameron Prairie National Wildlife Refuge Shoreline Protection (ME-09), GIWW-Perry Ridge West Bank Stabilization (CS-30), and Freshwater Bayou Bank Stabilization (ME-13). Construction of the Holly Beach Sand Management (CS-31) project was initiated in 2002, and was completed in early 2003. Dates of construction are still pending for Rockefeller Refuge Gulf Shoreline Stabilization (ME-18), and Grand-White Lakes Landbridge Protection (ME-19). These projects involve various techniques which are designed to decrease shoreline erosion rates. One new shoreline protection

project, authorized in 2003 on the 12th project priority list, South White Lake Shoreline Protection (ME-22) will reduce erosion along the south White Lake shoreline through the construction of a 55,000 foot foreshore rock dike.

Data from Freshwater Bayou Wetland Protection (ME-04), a hydrologic restoration and shoreline protection project, indicate that the rock dikes were successful at decreasing wave-induced shoreline erosion, and in some instances deposition occurred between the dike and the shoreline. The reference area eroded at 6.5 feet per year for the first year after construction, whereas the shoreline at the project area actually prograded at a rate of 2.3 feet per year. The second goal of the project was to reduce the frequency and duration of marsh inundation by using 11 pre-existing and 8 newly constructed wooden box culverts to allow water movement in and out of the study area. The effectiveness of the wooden box culvert structures could not adequately be assessed because their planned operation was disrupted by drought conditions and by unauthorized, unmonitored use.

The Breaux Act sediment and nutrient trapping projects, Plowed Terraces Demonstration (CS-25) and Pecan Island Terracing (ME-14), were constructed in 2000. These projects were designed to demonstrate the cost effectiveness of creating terraces with a plow, rather than with the more traditionally used drag line and bucket dredge. Once vegetated, the created emergent wetlands will trap sediment and reduce wave energy, thereby protecting interior marshes.

Two vegetation planting projects, West Hackberry Vegetative Planting Demonstration (CS-19) and Dewitt-Rollover Vegetative Plantings Demonstration (ME-08), were designed to increase vegetation and minimize wind-driven wave erosion. However, none of the plantings in the ME-08 project survived and erosion continued in the study area, demonstrating that smooth cordgrass is inadequate for reducing erosion in high-energy sites experiencing high rates of erosion. The project was subsequently deauthorized.

Sabine Refuge Marsh Creation, Increment I (CS-28), constructed in 2002, was designed to create new vegetated marsh in shallow open water areas, and to enhance and protect existing marsh vegetation

The following three projects have been deauthorized in Region 4: Compost Demonstration (CS-26), SW Shore White Lake Demonstration (ME-12), and Dewitt-Rollover Vegetative Plantings Demonstration (ME-08).

*State*

Eight projects, implemented in Region 4 by the CRD/CED and funded by the Wetlands Trust Fund and/or local Parish funds, are estimated to benefit 1,972 acres of land at a cost of $10,582,546.

Holly Beach (CS-01bc), constructed in phases between 1991 and 1994, addressed shoreline erosion by utilizing segmented rock breakwaters. Monitoring data indicate that 49,284 cubic yards of sediment accumulated behind the breakwaters from 1990 to 1995.

Several state-funded shoreline protection projects constructed between 1989 and 1991, have benefited areas within Region 4 using various techniques. The Sabine Shellbank Stabilization utilized shell to minimize shoreline erosion, whereas the Blind Lake shoreline protection project used limestone breakwaters and vegetation plantings along the GIWW adjacent to Blind Lake. Four years after planting, a high rate of plant survival enabled vegetation at Blind Lake to spread into an area 20 feet in width. The Brannon Ditch project incorporated the use of vegetation along the GIWW and a wooden wave-damping fence to protect the shoreline from continued erosion.

The Sabine Terraces project, constructed in 1991, decreased shoreline erosion and promoted vegetation growth and sedimentation in the Sabine National Wildlife Refuge. This project minimized wind-induced wave erosion through the construction of 128 earthen terraces, positioned in a checkerboard pattern in shallow open water areas. Monitoring data revealed a pre-construction, annual shoreline retreat rate of 11.6 feet per year. After construction, the average annual shoreline movement advanced approximately 21.0 feet per year between 1990 and 1993. Data also indicated that wave height was significantly decreased, primary marsh production increased, and the amount of vegetation coverage increased following project construction.

The Rycade Canal (CS-02) marsh management project, constructed in 1994, involves hydrologic modifications designed to decrease salinity and improve marsh conditions. The Pecan Island (ME-01) freshwater diversion project, constructed in 1992, allowed for movement of sediment, nutrients, and freshwater from White Lake to surrounding wetlands south of the Pecan Island chenier. Cameron Creole (CS-04a-1), a hydrologic restoration project constructed in 1999, addresses habitat shifts associated with saltwater intrusion and marsh impoundment.

*Parish Coastal Wetlands Restoration Program*

The eight Christmas tree projects implemented in Region 4 are Cameron Creole, Kelso Bayou, Portie Lakes, Ellender Bridge, Black Lake, Goose Lake, Cameron Creole #2, and Prien Lake. All sites were maintained in 2003. The PCWRP is responsible for building approximately 8,723 linear feet of fences in Region 4 since 1990.

This program also includes the first phase of two vegetation projects, Collicon Lake and Turner's Bay, where 1,200 plants were installed along 6,000 linear feet of shoreline/bankline to reduce erosion and to promote sediment accumulation.

*DNR/NRCS/SWCC Vegetation Planting Program*

Since 1998, a total of 74 vegetation planting projects have been implemented in Region 4. These projects involved the planting of approximately 421,101 plants (mostly California bulrush, *Schoenoplectus californicus*, and smooth cordgrass, *Spartina alterniflora*) along more than 1,033,807 linear feet of shoreline. Several phases, which span over several years, exist for many of the planting projects. Projects completed in 2003 are Calcasieu Ship Channel, SW Christmas Tree Fence Demo #2, Marseillaise Bayou Marsh #3, Sabine Lake Shoreline, Catfish Lake, South Fork Black Bayou, Grand Chenier Highway, Moss Lake, Lacassine GIWW, and M.O. Miller 2-Micorrhyzal Fungi Demo.

*Section 204/1135*

Four Section 204/1135 projects in Region 4, Brown Lake, and Calcasieu River & Pass Phases I, II, and III, created approximately 982 acres of wetlands. These projects utilized dredged material from routine maintenance of the Calcasieu Ship Channel to benefit areas along the shore of Calcasieu Lake and areas within the Sabine National Wildlife Refuge.

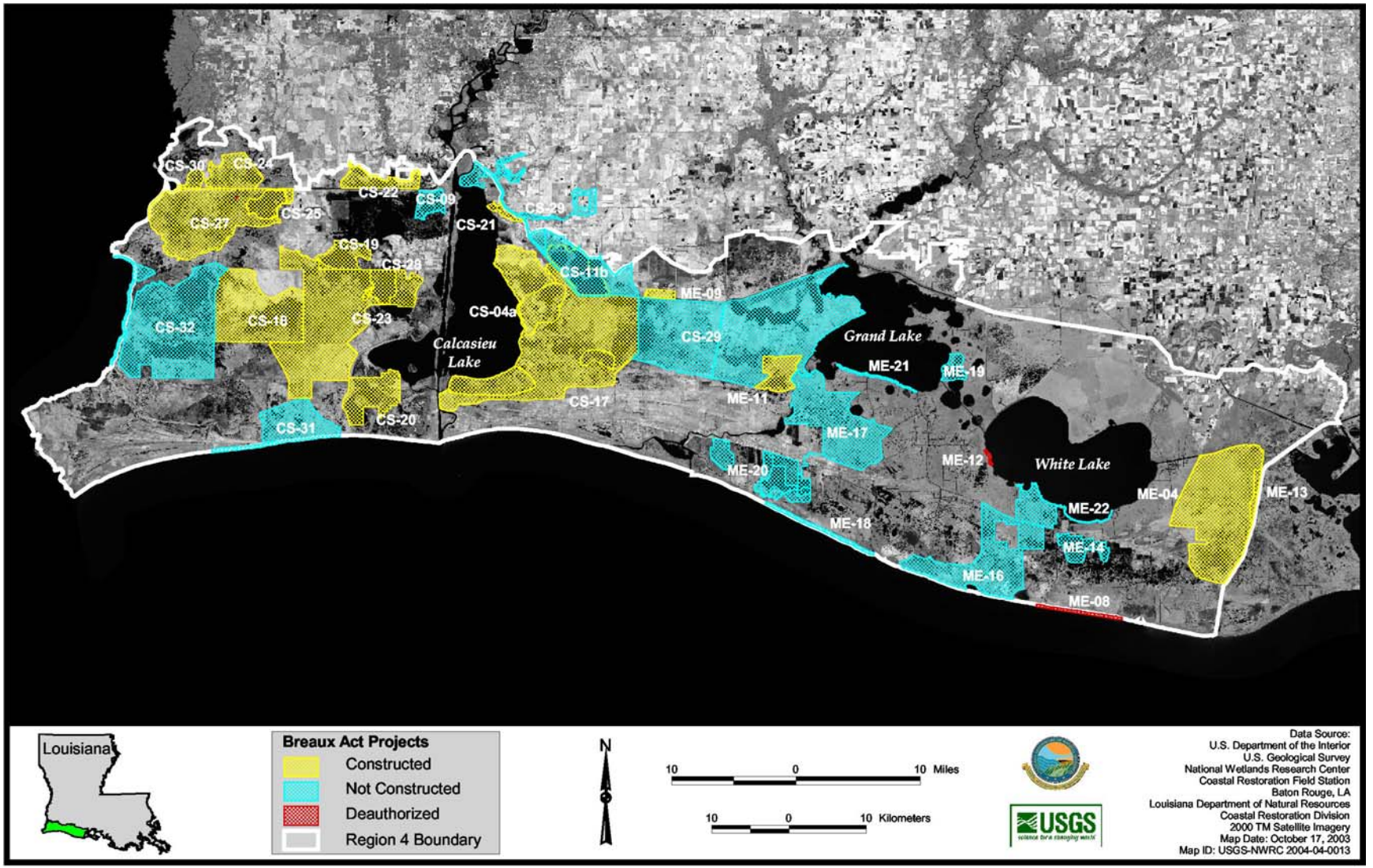



**Figure 9: Location of Breaux Act projects authorized in Coast 2050 Region 4.**

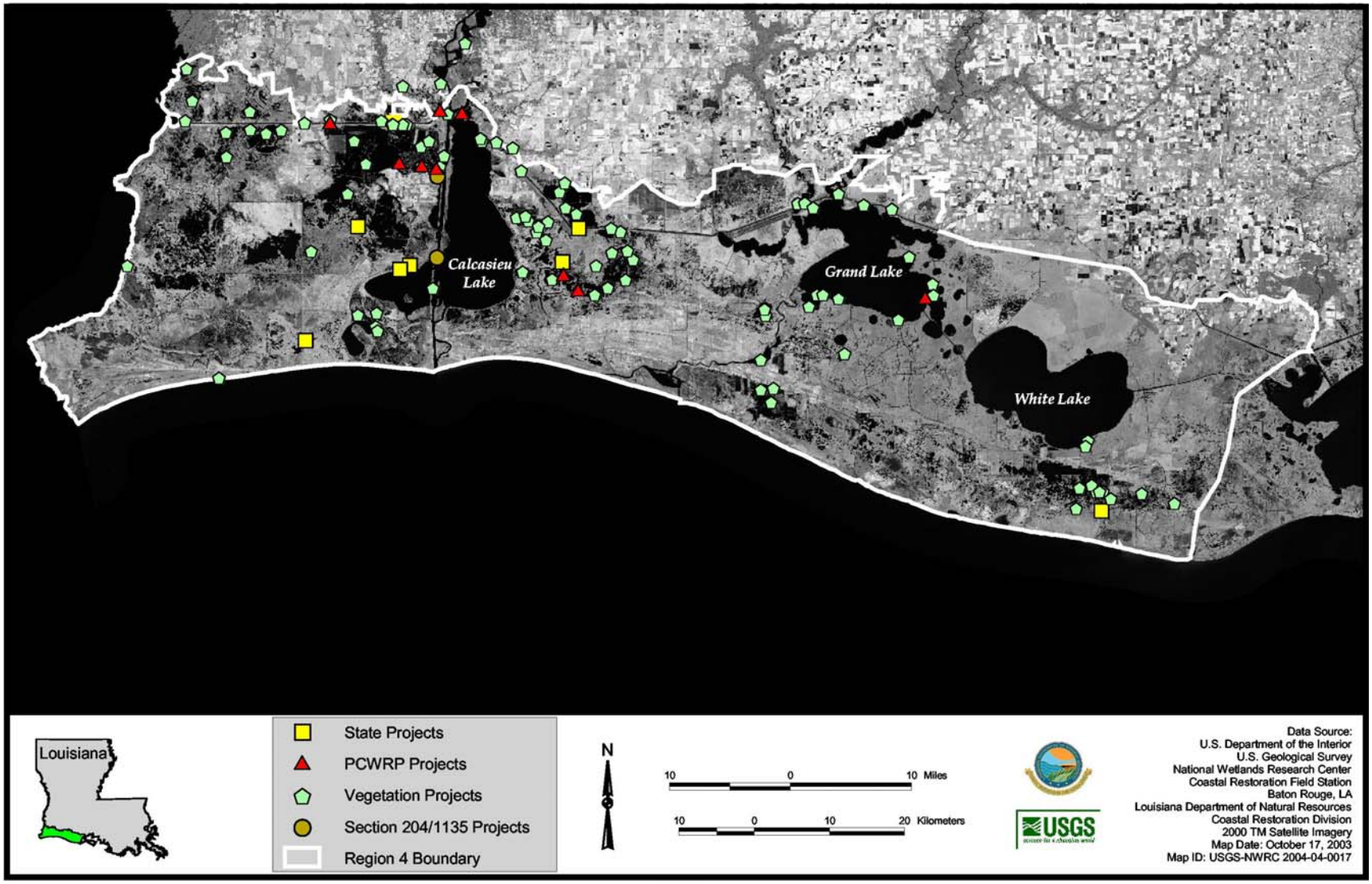



**Figure 10: Location of State, PCWRP, Vegetation, and Section204/1135 projects in Coast 2050 Region 4.**

**Table 4.** Restoration projects completed or pending in Coast 2050 Region 4.

| Program | State Project Number (Federal) | Project Name | Project Type | PPL | Agency/Sponsor | Senator | Representative | Parish | Acres Benefitted | Construction Completion Date | Engineering, Design, & Landrights Cost | Construction Cost | Operation, Maintenance, & Monitoring Cost | Baseline Cost Estimate | Current Cost Estimate | Project Summary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Breaux Act | CS-01 (Complex Project) | Holly Beach Project | SP | 9 | NRCS | Theunissen | Flavin | Cam. | N/A | N/A | N/A | N/A | N/A | N/A | N/A | The purpose of the project is to protect existing coastal wetlands by restoring and maintaining the integrity and functionality of the remaining chenier/beach ridge. This will be accomplished through beach renourishment and monitoring of the shoreline response, and possible augmentation and/or enhancement of existing breakwaters. This project was reauthorized as an 11 list project, Holly Beach Sand Management Project, CS-31. |
| Breaux Act | CS-04a (CS-04a) | Cameron-Creole Maintenance | HR | 3 | NRCS | Theunissen | Flavin | Cam. | 2,602 | 1997 | $0 | N/A | $3,736,718 | $3,719,926 | $3,736,718 | Cameron-Creole Maintenance includes maintenance provisions for 19 miles of levee and five structures. This project is not monitored with Breaux Act funds, and only seeked to keep the levees and structures of the Cameron-Creole Watershed Management Project in good condition. The Cameron-Creole Watershed Management Project was constructed before the Breaux Act was authorized and was funded as a Louisiana State project under the auspices of NRCS's Small Watershed Program (PL-566). |
| Breaux Act | CS-09 (CS-09) | Brown Lake Hydrologic Restoration | MM | 2 | NRCS | Theunissen, Mount | Flavin, Johns | Cam. | 282 | Pending | $234,700 | $1,714,400 | $1,252,790 | $3,222,800 | $3,201,890 | Wetlands surrounding Brown Lake have suffered since the construction of the GIWW and the Calcasieu Ship Channel. These major navigation channels have allowed saltwater to enter surrounding marshes, exposing the wetlands to increased erosion from wind and waves. This project includes installing and maintaining water control structures to reduce fluctuations in salinity and water level, constructing levees and terraces to dissipate wave energy and promote the establishment of aquatic vegetation, and planting vegetation on exposed mudflats to help stabilize and protect eroding shorelines. Salinity, water level, and vegetation will be monitored to determine the project's effectiveness. |
| Breaux Act | CS-11b (CS-11b) | Sweet Lake/Willow Lake Hydrologic Restoration | SP HR | 5 | NRCS | Theunissen | Flavin | Cam. | 247 | 2001 | $407,467 | $2,728,918 | $639,762 | $4,800,000 | $3,776,147 | As a result of waves and boat wakes, the GIWW spoil bank that protects the fragile marshes around Sweet Lake and Willow Lake has eroded and breached in several places. The GIWW has encroached on the lakes and their surrounding marshes, potentially creating one large open water body, exposing the marshes to saltwater and erosive processes. This project includes construction of rock embankments on the GIWW to close off the lakes, vegetation plantings to reduce erosion, and construction of earthen terraces combined with vegetation plantings in open water areas to promote growth of vegetation. Phase 1 was constructed in 2001 and Phase 2 in 2002. Vegetation and shoreline change is being monitored. |
| Breaux Act | CS-17 (FCS-17) | Cameron/Creole Plugs | HR | 1 | USFWS | Theunissen | Flavin | Cam. | 865 | 1996 | $73,158 | $345,381 | $572,756 | $660,460 | $991,295 | The implementation of this project will limit salinity influxes and excessive water pooling adjacent to Calcasieu Lake in Cameron/Creole Watershed project. This will be accomplished by the construction of two plugs within the interior borrow canal of the Calcasieu Lake Eastern Levee. |
| Breaux Act | CS-18 (FCS-18) | Sabine National Wildlife Refuge Erosion Protection | SP HR | 1 | USFWS | Theunissen | Flavin | Cam. | 5,542 | 1995 | $200,141 | $1,010,568 | $391,903 | $4,895,780 | $1,602,612 | This project is intended to protect an impounded freshwater marsh by reinforcing an eroded levee with a rock dike. |
| Breaux Act | CS-19 (FCS-19) | West Hackberry Vegetative Planting Demonstration | VP | 1 | NRCS | Theunissen | Flavin | Cam. | N/A | 1994 | $24,266 | $125,461 | $96,514 | $213,947 | $246,241 | This project will reduce marsh erosion from interior open water wave energy using vegetation planting techniques as well as hay bale fences. |

| Program | State Project Number (Federal) | Project Name | Project Type | PPL | Agency/Sponsor | Senator | Representative | Parish | Acres Benefitted | Construction Completion Date | Engineering, Design, & Landrights Cost | Construction Cost | Operation, Maintenance, & Monitoring Cost | Baseline Cost Estimate | Current Cost Estimate | Project Summary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Breaux Act | CS-20 (PCS-24) | East Mud Lake Marsh Management | MM | 2 | NRCS | Theunissen | Flavin | Cam. | 1,520 | 1996 | $248,569 | $1,150,868 | $1,976,499 | $2,903,635 | $3,375,936 | The project will reduce wetland degradation by creating a hydrologic regime conducive to restoration, protection and enhancement of the Mud Lake area by using various types of water control structures and vegetation plantings. Structural components include culverts with flap gates, two variable-crest weirs, three earthen plugs, and the repair of existing levee. |
| Breaux Act | CS-21 (PCS-25) | Highway 384 Hydrologic Restoration | MM | 2 | NRCS | Theunissen | Flavin | Cam. | 150 | 2000 | $154,447 | $163,278 | $740,829 | $700,717 | $1,058,554 | The Highway 384 project area along the northeast shoreline of Calcasieu Lake experienced wetland loss due to increased tidal volume, enlarged tidal routes, and saltwater intrusion. The project area had also been isolated from its major source of freshwater, the Calcasieu River Basin. The project seeks to improve hydrologic conditions with the installation of culverts, plugs, and weirs within the project area and to stabilize shorelines by rock-lining canals and planting vegetation. |
| Breaux Act | CS-22 (PCS-27) | Clear Marais Bank Protection | SP | 2 | USACE | Mount | Johns | Cal. | 1,067 | 1997 | $557,028 | $2,273,956 | $903,612 | $1,741,310 | $3,734,596 | The integrity of an existing water management levee between the GIWW and the project area was threatened by increased tidal action and boat wakes. In response, a 35,000 foot limestone breakwater was constructed to prevent continued erosion of the levee and to prevent encroachment of the GIWW into the project area which consists of hundreds of acres of highly organic freshwater marsh. |
| Breaux Act | CS-23 (XCS-47/48i) | Replace Sabine Refuge Water Control Structures at Headquarters Canal, West Cove Canal, and Hog Island Gully | MM | 3 | USFWS | Theunissen | Flavin | Cam. | 953 | 2000 | $331,835 | $2,781,400 | $1,404,081 | $4,581,454 | $4,517,356 | This project was authorized to replace the water control structures on three major avenues of water passage that allow water to flow from saline areas into the project area's interior marshes. The new structures on Hog Island Gully, West Cove Canal, and Headquarters Canal will be operated to effectively discharge excess water, increase cross sectional area for movement of estuarine species, and help to curtail saltwater intrusion into the interior marshes. |
| Breaux Act | CS-24 (PCS-26i) | Perry Ridge Shore Protection | SP | 4 | NRCS | Mount | Johns | Cal. | 1,203 | 1999 | $244,881 | $1,465,996 | $578,213 | $2,223,518 | $2,289,090 | Marsh loss in the vicinity of Perry Ridge has been caused by water level fluctuations and tidal scour from the GIWW as the result of breaches in the northern spoil bank. As the GIWW has widened and deepened, it has acted as a conduit for saltwater to enter the fragile surrounding marshes. To protect these marshes, a 12,000 linear-foot rock dike was constructed along the bank of the GIWW. This dike serves to protect the existing emergent wetlands, prevent further deterioration from erosion, prevent the widening of the GIWW, and reduce salinity spikes in the project area by keeping a pool of freshwater behind the rocks. |
| Breaux Act | CS-25 (XCS-56) | Plowed Terraces Demonstration | SNT | 4 | NRCS | Theunissen, Mount | Flavin, Johns | Cam. | N/A | 2000 | $62,714 | $213,800 | $45,425 | $299,690 | $321,939 | Severely eroded marshes in the project area, adjacent to the GIWW, have resulted from excessive water level fluctuations, saltwater intrusion, and wind-generated wave action. The soils of the area appear suitable for plow-constructed earthen terraces and provide an excellent opportunity to develop and demonstrate a non-traditional procedure for constructing earthen terraces in shallow water areas. These demonstration terraces are expected to serve as wave-stilling, sediment-trapping structures that provide a base for the establishment of emergent vegetation. Vegetation will also be planted. |
| Breaux Act | CS-26 (XCS-36) | Compost Demonstration | MC | 4 | EPA | Theunissen | Flavin | Cam. | N/A | Deauth. | $57,000 | $292,785 | $75,548 | $370,594 | $425,333 | This project was authorized to evaluate the effectiveness of using tree trimmings as compostable material, using compost amended material in providing a growth medium for emergent vegetation, and determining settlement rates of the compost amended materials and tree trimmings. The project was officially deauthorized by the Breaux Act Task Force in January 2002. |

| Program | State Project Number (Federal) | Project Name | Project Type | PPL | Agency/Sponsor | Senator | Representative | Parish | Acres Benefitted | Construction Completion Date | Engineering, Design, & Landrights Cost | Construction Cost | Operation, Maintenance, & Monitoring Cost | Baseline Cost Estimate | Current Cost Estimate | Project Summary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Breaux Act | CS-27 (XCS-48) | Black Bayou Hydrologic Restoration | HR | 6 | NMFS | Theunissen | Flavin, Johns | Cam. | 3,594 | 2001 | $893,171 | $4,057,420 | $1,431,920 | $6,316,800 | $6,382,511 | The marshes in the Black Bayou project area have been subjected to hydrological changes such as reduced freshwater inflow, increased magnitude and duration of tidal fluctuations, increased salinities, higher water levels, and excessive water exchange. This project included the construction of spoil banks, weirs, plugs, and culverts which were designed to allow freshwater from the GIWW into the wetlands and to create a hydrologic head that increases freshwater retention time and reduces saltwater intrusion and tidal action in the wetlands. Vegetation was also planted to decrease erosion and increase the establishment of emergent marsh. |
| Breaux Act | CS-28 (XCS-48 (SA-1)) | Sabine Refuge Marsh Creation, Increment 1 | MC | 8 | USFWS/ USACE | Theunissen | Flavin | Cam. | 993 | 2002 | $612,140 | $6,577,618 | $210,552 | $5,920,248 | $7,400,310 | This project involved the construction of approximately 27,000 feet of earthen partitions in shallow open water areas to serve as material retention dikes for five marsh creation cells. Dredged spoil slurry obtained from operations and maintenance dredging of the Calcasieu Ship Channel will be deposited in the containment cells during USACE maintenance dredging events. The first cycle was completed in January 2002. |
| Breaux Act | CS-29 (CS-16) | Black Bayou Culvert Hydrologic Restoration | HR | 9 | NRCS | Theunissen, Hoyt | Flavin | Cam. | 540 | Pending | $1,055,973 | $317,354 | $309,233 | $5,900,387 | $4,543,550 | This project was authorized to provide an avenue to remove excess water, which has contributed to marsh loss and shoreline erosion, from the Lakes Subbasin. This project's components include five 10 by 10-foot concrete box culverts with sluice gates to be installed in Black Bayou, and relocating Louisiana Hwy 384 over the culverts. Operation of the structure will be in coordination with Calcasieu Lock and the Schooner Bayou and Catfish Point water control structures. |
| Breaux Act | CS-30 (PCS-26ii) | GIWW - Perry Ridge West Bank Stabilization | SP MC | 9 | NRCS | Mount | Johns | Cal. | 83 | 2001 | $456,016 | $1,743,523 | $38,907 | $3,742,451 | $3,238,446 | This project was authorized to install rip-rap along the northern bank of the GIWW in an area which was recently dredged to 30 feet to allow for the use of double barge traffic. This dredging has intensified bank erosion and has resulted in a breach of the bank, impacting interior wetlands. |
| Breaux Act | CS-31 | Holly Beach Sand Management Project | SP | 11 | NRCS | Theunissen | Flavin | Cam. | 330 | 2002 | $1,177,000 | $17,444,500 | $631,005 | $19,252,492 | $19,252,500 | The purpose of the project is to protect existing coastal wetlands by restoring and maintaining the integrity and functionality of the remaining chenier/beach ridge. This will be accomplished through beach renourishment and monitoring of the shoreline response, and possible augmentation and/or enhancement of existing breakwaters. This project was authorized as a 9 list project complex project, Holly Beach Project, CS-01. |
| Breaux Act | CS-32 | East Sabine Lake Hydrologic Restoration | HR | 10 | NRCS/U SFWS | Theunissen | Flavin | Cam. | 393 | Pending | $1,715,664 | N/A | $66,145 | $1,425,447 | $1,781,809 | This project will utilize water control structures, shoreline protection, terraces, and vegetation plantings to restore the historical hydrologic regime to approximately 36,623 acres of the Sabine National Wildlife Refuge. Specific goals include reducing elevated salinities within fresh and intermediate marshes; reducing tidal scour; reducing erosion on the eastern shore of Sabine Lake; reducing the turbidity of open water areas; providing more marsh edge; and restoring and protecting marsh. |
| Breaux Act | ME-04 (XME-21) | Freshwater Bayou Wetland Protection | HR SP | 2 | NRCS | Theunissen | Frith | Ver. | 1,593 | 1998 | $285,397 | $1,019,875 | $1,643,923 | $2,770,093 | $2,949,194 | This project was constructed in two phases. Phase I was completed in 1995 and consisted of a rock dike to protect the west bank of Freshwater Bayou Canal from shoreline erosion. Phase II of the project was completed in 1998 and included the construction of several water control structures to improve the capability of the interior wetlands to mediate the effects of increased salinity and higher water level fluctuations, on vegetation cover. |

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| Breaux Act | ME-08 (ME-08) | Dewitt Rollover Vegetative Plantings Demonstration | VP | 1 | NRCS | Theunissen | Frith | Ver. | N/A | 1994 Deauth. | $36,582 | $51,460 | $3,722 | $191,003 | $91,764 | This demonstration project was authorized to investigate the ability of vegetation plantings of smooth cordgrass (*Spartina alterniflora* ) to colonize a newly accreted mudflat, which will enhance sediment trapping and establish a buffer of vegetation to protect the beach from erosion. The vegetation was planted in a 1.5-mile-long strip on the Gulf of Mexico shoreline. After planting in 1994, the shoreline erosion rate remained consistent with the long-term range of erosion rates for this area, but no plants remained 10 months after planting. The project was officially deauthorized by the Breaux Act Task Force in February 1996 because no plants remained. |
| Breaux Act | ME-09 (ME-09) | Cameron Prairie National Wildlife Refuge Shoreline Protection | SP | 1 | USFWS | Theunissen | Flavin | Cam. | 247 | 1994 | $61,112 | $851,775 | $314,236 | $1,177,668 | $1,227,123 | A rock dike was constructed to protect approximately two miles of eroded levee separating a 640-acre area of freshwater marsh from the high turbidities and erosive forces of the GIWW. |
| Breaux Act | ME-11 (PME-15) | Humble Canal Hydrologic Restoration | HR | 8 | NRCS | Theunissen | Flavin | Ver. | 378 | 2003 | $173,529 | $460,221 | $914,679 | $1,526,136 | $1,548,429 | The objective of this project is to restore historical hydrology to the project area by constructing three 48-inch flap-gated structures, which will continue to protect the area from saltwater intrusion from the Mermentau River and allow for drainage of high water levels from the marsh to the river. |
| Breaux Act | ME-12 (PME-6) | Southwest Shore White Lake Demonstration | SP | 3 | NRCS | Theunissen | Frith, Flavin | Ver. | N/A | 1996 Deauth. | $16,777 | $20,025 | $72,001 | $126,062 | $108,803 | This project was authorized to protect 25 acres of fresh and intermediate marsh along the southwest shore of White Lake. The area is exposed to high wave energy and severe shoreline erosion. A total of 2,650 California bulrush ( *Schoenoplectus californicus* ) plants were installed in 1996, along the shoreline in three rows, and vegetation was monitored after planting. After 12 months, plant percent survival was 0.17 and erosion rates reached 11.7 feet/year. Water depth combined with high wind-generated wave energy were the likely causes of the planting's lack of success. The project was officially deauthorized by the Breaux Act Task Force in October of 1998 and is no longer monitored. |
| Breaux Act | ME-13 (XME-29) | Freshwater Bayou Bank Stabilization | SP | 5 | NRCS | Theunissen | Frith | Ver. | 511 | 1998 | $228,769 | $1,682,077 | $632,258 | $3,998,919 | $2,543,105 | The main cause of wetland loss in this project area is boat wake-induced erosion of the canal spoil banks and the fragile organic soils of the adjacent marsh along the west bank of Freshwater Bayou Canal. The subsequent impact of tidal scour and seasonal salinity spikes entering the canal exacerbates the loss of shoreline marsh in the project area. To decrease the erosion rate and slow wetland loss, a 23,193 linear-foot, continuous rock dike was installed parallel to the shoreline. |
| Breaux Act | ME-14 (XME-22) | Pecan Island Terracing | SNT | 7 | NMFS | Theunissen | Frith | Ver. | 442 | 2003 | $465,925 | $2,045,339 | $351,542 | $2,185,900 | $2,862,806 | This project will convert areas of open water back to vegetated marsh through the construction of earthen terraces in shallow water areas. |
| Breaux Act | ME-16 (PME-07a) | Freshwater Introduction South of Hwy 82 | HR MC | 9 | USFWS | Theunissen | Frith, Flavin | Ver. | 296 | Pending | $597,098 | N/A | $129,125 | $607,138 | $726,223 | This project was authorized to address saltwater intrusion and lack of freshwater and sediment input in the project area. Project components include the installation of approximately eight water control structures, breaching spoilbanks in areas near Louisiana Hwy 82 to allow water to flow across the chenier, and the removal of plugs to facilitate water flow from the Lakes Sub-basin south into the Chenier Subbasin. |
| Breaux Act | ME-17 (XME-42a) | Little Pecan Bayou Hydrologic Restoration | HR | 9 | NRCS | Theunissen | Flavin | Cam. | 144 | Pending | $1,400,600 | N/A | $155,998 | $1,245,278 | $1,556,598 | This project will provide a means to remove excess water from the Lakes Subbasin by installing a water control structure within Little Pecan Bayou, constructing a freshwater conveyance channel with two water control structures through Grand Chenier Ridge to assist in excess water removal, and excavation of a collector channel within the marsh. |

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| Breaux Act | ME-18 | Rockefeller Refuge Gulf Shoreline Stabilization | SP | 10 | NMFS | Theunissen | Flavin | Cam. | 920 | Pending | $2,393,615 | N/A | $14,863 | $1,929,888 | $2,408,478 | This project entails the construction of a continuous, nearshore rock breakwater along the Gulf of Mexico shoreline. This structure will assist in halting Gulf shoreline retreat and direct marsh loss from Beach Prong to Joseph Harbor, protecting saline marsh habitat, and enhancing fish and wildlife habitat. |
| Breaux Act | ME-19 | Grand-White Lake Land Bridge Protection | SP | 10 | USFWS | Theunissen | Flavin | Cam. | 213 | Pending | $653,018 | $3,936,864 | $1,172,370 | $9,635,124 | $5,762,252 | This project will protect freshwater wetlands by stopping the erosion of the southeastern shoreline of Grand Lake and the western shoreline of Collicon Lake through hard structure shoreline stabilization and planted earthen terraces. It will allow for vertical accretion of sediment along the eroding shorelines as well as provide for the access of aquatic organisms, water, sediment, and nutrient exchange between the protected wetlands and Grand and Collicon Lakes. |
| Breaux Act | ME-20 | South Grand Chenier Hydrologic Restoration Project | HR | 11 | USFWS | Theunissen | Flavin | Mer. | 440 | Pending | $2,869,279 | N/A | $78,746 | $2,358,420 | $2,948,025 | This project will restore the Hog Bayou watershed hydrology through the use of dredged material to create two-200 acre cells that will stop saltwater intrusion into the project area. Freshwater, sediment and nutrients from the Mermentau River will also be introduced into the project area at two separate locations. |
| Breaux Act | ME-21 | Grand Lake Shoreline Protection | SP | 11 | USACE | Theunissen | Flavin | Cam. | 495 | Pending | $1,032,157 | N/A | $16,872 | $1,049,029 | $1,049,029 | This project will protect fragile interior marshes by stopping shoreline erosion through the construction of a 39,000-foot rock breakwater. The project will also create marsh through the deposition of dredged material between the breakwater and the existing shore. |
| Breaux Act | ME-22 | South White Lake Shoreline Protection | SP | 12 | USACE | Theunissen | Frith | Ver. | 702 | Pending | $1,557,153 | N/A | $30,932 | $1,588,085 | $1,588,085 | This project will reduce erosion along the south White Lake shoreline through the construction of a 55,000 foot foreshore rock dike. Marsh accretion and submerged aquatic vegetation habitat creation is expected to occur behind the structure due to the occasional overwash of waves and the reduction of turbidity in the interior open water areas. |
| State | CS-01bc | Holly Beach | SP | N/A | N/A | Theunissen | Flavin | Cam. | 88 | 1991, 1992, 1993, 1994 | N/A | N/A | N/A | N/A | $8,437,000 | The objective of this project is to protect the marsh north of the Gulf of Mexico shoreline by expanding shoreline protection in phases from Ocean View, Louisiana to the east near Calcasieu Pass. A total of 34 breakwaters were constructed in 1991, 21 breakwaters were constructed in 1992, 21 breakwaters were constructed in 1993, and nine breakwaters were constructed in 1994 between Calcasieu Pass and Holly Beach, Louisiana. Eighteen of the existing breakwaters were raised and/or extended in 2003 utilizing marine mattress foundations and armor stone. |
| State | CS-02 | Rycade Canal | MM | N/A | N/A | Theunissen | Flavin | Cam. | 1,200 | 1994 | N/A | N/A | N/A | N/A | $516,474 | The project is designed to stabilize salinities and water levels in the project area by reducing water flows through Rycade Canal and Black Lake. |
| State | CS-04a-1 | Cameron-Creole Structure Automation | HR | N/A | N/A | Theunissen | Flavin | Cam. | N/A | 1999 | N/A | N/A | N/A | N/A | $700,000 | This project consists of automating three existing water control structures along the east shore of Calcasieu Lake. These structures are remotely located and are difficult to manipulate. Automation of these structures will improve management capabilities in the Sabine National Wildlife Refuge. |
| State | ME-01 | Pecan Island | FD | N/A | N/A | Theunissen | Frith | Ver. | 84 | 1992 | N/A | N/A | N/A | N/A | $487,152 | The purpose of this project is to introduce freshwater from the north to counteract the saltwater intrusion from the south. The project consists of two water control structures and approximately 5,700 linear feet of earthen embankment needed to channel water from White Lake to the south marshes. |
| State | | Blind Lake | SP | N/A | N/A | Theunissen | Flavin | Cam. | N/A | 1989 | N/A | N/A | N/A | N/A | $173,433 | The purpose of this project was to prevent the Gulf Intracoastal Waterway from breaching into Blind Lake. The project consisted of placing 2,339 linear feet of limestone breakwater along the south side of the GIWW adjacent to Blind Lake. The second phase of this project included planting giant cutgrass (*Zizaniopsis miliacea* ) along the inside of the breakwater to enhance the accretion process. |

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| State | | Brannon Ditch | SP | N/A | N/A | Mount | Johns | Cal. | 480 | 1991 | N/A | N/A | N/A | N/A | $12,440 | This project included the construction of wooden breakwater fences along 2,200 feet of the GIWW across from Brannon Ditch in Calcasieu Parish. This area has experienced shoreline erosion in excess of 25 feet/year. The breakwaters will reduce wave action from boats and the current from Brannon Ditch during periods of high discharge. Smooth cordgrass (*Spartina alterniflora* ) was also planted behind the breakwaters in order to enhance accretion and increase the stability of this site. |
| State | | Sabine Shellbank Stabilization | SP | N/A | N/A | Theunissen | Flavin | Cam. | 10 | 1990 | N/A | N/A | N/A | N/A | $66,000 | The purpose of this project was to provide natural shoreline protection by using tidal currents to deposit clam shell on the shoreline. The benefits of this design over the use of permanent structures are lower cost, less disturbance of the natural habitat during construction, and allowing natural distribution of sediment and organisms without impediment. |
| State | | Sabine Terraces | SNT | N/A | N/A | Theunissen | Flavin | Cam. | 110 | 1991 | N/A | N/A | N/A | N/A | $190,047 | A total of 128 earthen terraces were constructed in a checkerboard pattern and planted with smooth cordgrass (*Spartina alterniflora* ) in open water areas of the Sabine National Wildlife Refuge. This will increase the length of marsh-water interface, re-establish emergent marsh vegetation, reduce marsh fringe retreat by reducing wind-generated wave energy, increase overall primary productivity, and promote the deposition of suspended sediment. |
| PCWRP | | Cameron Creole | SP | N/A | N/A | Theunissen | Flavin | Cam. | 8 | 1990 | N/A | N/A | N/A | N/A | $69,900 | Brush fences were constructed to trap sediment and act as a barrier to slow saltwater intrusion in the interior marsh. Fences were originally constructed and filled in 1990 and maintenance was performed in 1992, 1994, 1997, and 2003. |
| PCWRP | | Kelso Bayou | SP | N/A | N/A | Theunissen | Flavin | Cam. | 1 | 1991 | N/A | N/A | N/A | N/A | $24,245 | Brush fences were constructed to re-establish the eroded shoreline and promote sediment deposition along Kelso Bayou in Cameron Parish, Louisiana. Fences were originally constructed and filled in 1991 and maintenance was performed in 1993, 1996, 1999, and 2003. |
| PCWRP | | Portie Lakes | SP | N/A | N/A | Theunissen | Flavin | Cam. | 2 | 1992 | N/A | N/A | N/A | N/A | $32,500 | Brush fences were constructed to decrease erosion by trapping sediment along the shoreline and interior marsh adjacent to Portie Lake. Fences were originally constructed and filled in 1992 and maintenance was performed in 1996, 1998, 1999, and 2003. |
| PCWRP | | Ellender Bridge | SP | N/A | N/A | Mount | Johns | Cal. | 2 | 1992 | N/A | N/A | N/A | N/A | $43,561 | Brush fence were constructed to protect marsh that was exposed to the GIWW. Fences were originally constructed and filled in 1992 and maintenance was performed in 1993, 1995, 1996, 1999, and 2003. |
| PCWRP | | Black Lake | SP | N/A | N/A | Theunissen | Flavin | Cam. | 2 | 1993 | N/A | N/A | N/A | N/A | $52,500 | Brush fences were constructed to decrease wind fetch and prevent continued erosion of the Black Lake shoreline by wind-generated waves. Fences were originally constructed and filled in 1993 and maintenance was performed in 1994, 1995, 1996, 1998, 2000, and 2003. |
| PCWRP | | Goose Lake | SP | N/A | N/A | Mount | Johns | Cal. | 1 | 1994 | N/A | N/A | N/A | N/A | $14,495 | Brush fences were constructed along the GIWW at Goose Lake to slow the shoreline erosion at this intersection. Fences were originally constructed and filled in 1994 and maintenance was performed in 1995 and 2003. |
| PCWRP | | Collicon Lake | SP | N/A | N/A | Theunissen | Flavin | Cam. | 9 | 1996, 2003 | N/A | N/A | N/A | N/A | $9,500 | Vegetation was planted along the shoreline of Collicon Lake to slow the shoreline erosion, promote sediment accumulation, and enhance fish habitat. |
| PCWRP | | Turner Bay | SP | N/A | N/A | Theunissen | Flavin | Cal. | 2 | 1996 | N/A | N/A | N/A | N/A | $87,500 | Brush fences were constructed to protect the interior shoreline of Turner Bay. Fences were originally constructed and filled in 1996 and maintenance was performed in 1997, 1998, 1999, 2000, and 2003. |
| PCWRP | | Cameron Creole #2 | SP | N/A | N/A | Theunissen | Flavin | Cam. | 3 | 1998 | N/A | N/A | N/A | N/A | $46,500 | Brush fences were constructed to slow wave action and prevent continued shoreline erosion and erosion of the interior marsh. Fences were originally constructed and filled in 1998 and maintenance was performed in 1998, 1999, 2001and 2003. |

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| PCWRP | | Prien Lake | SP | N/A | N/A | Theunissen | Flavin | Cal. | 1 | 2001 | N/A | N/A | N/A | N/A | $22,500 | Approximately 700 feet of brush fence were built along the shoreline of Prien Lake, located just south of Lake Charles, to re-establish the original shoreline. Fences were originally constructed and filled in 2001and maintenance was performed in 2003. |
| Vegetation | | Grand Lake | VP | N/A | N/A | Theunissen | Flavin | Cam. | 12 | 1986, 1987, 2001 | N/A | N/A | N/A | N/A | $7,468 | A total of 2,520 smooth cordgrass (*Spartina alterniflora* ) plants and 5,000 giant cutgrass (*Zizaniopsis miliacea* ) plants were used to create a stand of emergent vegetation that will protect the shoreline from erosion and trap available sediment. |
| Vegetation | | Brown Lake | VP | N/A | N/A | Theunissen | Flavin | Cam. | 154 | 1987, 1989, 1992, 1995 | N/A | N/A | N/A | N/A | $9,100 | A total of 37,000 smooth cordgrass (*Spartina alterniflora* ) plants and 1,400 seashore paspalum (*Paspalum vaginatum* ) plants were used to vegetate a marsh creation project area that utilized spoil disposal. |
| Vegetation | | Rollover Bayou | VP | N/A | N/A | Theunissen | Frith | Ver. | 23 | 1998 | N/A | N/A | N/A | N/A | $4,408 | A total of 2,060 smooth cordgrass (*Spartina alterniflora* ) plants were used to create a stand of emergent vegetation that will provide a living barrier against wave-induced erosion and trap available sediment. |
| Vegetation | | Sabine NWR | VP | N/A | N/A | Theunissen | Flavin | Cam. | 69 | 1988 | N/A | N/A | N/A | N/A | $39,076 | A total of 15,000 smooth cordgrass (*Spartina alterniflora* ) plants were used within the Sabine National Wildlife Refuge to provide a barrier against erosion. |
| Vegetation | | Mallard Bay | VP | N/A | N/A | Theunissen | Flavin | Cam. | 10 | 1988, 1989 | N/A | N/A | N/A | N/A | $5,387 | A total of 1,600 giant cutgrass (*Zizaniopsis miliacea* ) plants and 250 California bulrush (*Schoenoplectus californicus* ) plants were used to create a stand of emergent vegetation that will provide a living barrier against wave-induced erosion and trap available sediment. |
| Vegetation | | Black Lake | VP | N/A | N/A | Theunissen | Flavin | Cam. | 36 | 1988, 1992 | N/A | N/A | N/A | N/A | $32,500 | A total of 13,000 smooth cordgrass (*Spartina alterniflora* ) plants were used to create a stand of emergent vegetation. This will provide a living barrier against wave-induced erosion and trap available sediment. |
| Vegetation | | Lacassine | VP | N/A | N/A | Theunissen | Flavin | Cam. | 14 | 1989, 1990 | N/A | N/A | N/A | N/A | $22,200 | A total of 1,500 giant cutgrass (*Zizaniopsis miliacea* ) plants and 10,000 bald cypress (*Taxodium distichum* ) trees were used to protect an island in Lacassine National Wildlife Refuge, located northwest of Grand Lake and adjacent to the GIWW. |
| Vegetation | | Sabine Terraces | VP | N/A | N/A | Theunissen | Flavin | Cam. | 48 | 1990 | N/A | N/A | N/A | N/A | $58,760 | A total of 20,800 smooth cordgrass (*Spartina alterniflora* ) plants were used on 128 earthen terraces in order to stabilize the earthen terraces and create new marsh. |
| Vegetation | | Blind Lake | VP | N/A | N/A | Theunissen | Flavin | Cam. | 5 | 1990 | N/A | N/A | N/A | N/A | $2,400 | A total of 400 giant cutgrass (*Zizaniopsis miliacea* ) plants were used to create a stand of emergent vegetation that will provide a living barrier against wave-induced erosion and trap available sediment. |
| Vegetation | | Mud Lake | VP | N/A | N/A | Theunissen | Flavin | Cam. | 322 | 1991, 1992, 1994, 1996 | N/A | N/A | N/A | N/A | $225,906 | A total of 47,400 smooth cordgrass (*Spartina alterniflora* ) plants were used in order to re-establish stands of emergent vegetation in the interior marshes, where erosion has negatively affected marsh expanse. |
| Vegetation | | Brannon Ditch | VP | N/A | N/A | Mount | Johns | Cal. | 11 | 1991 | N/A | N/A | N/A | N/A | $12,543 | A total of 4,200 smooth cordgrass (*Spartina alterniflora* ) plants and 100 roseau cane (*Phragmites australis* ) plants were used in an area of sediment that accreted behind the state-funded shoreline protection project (Brannon Ditch) to create a stand of emergent vegetation. This vegetation will provide a living barrier against wave-induced erosion and trap available sediment. |
| Vegetation | | White Lake | VP | N/A | N/A | Theunissen | Frith | Ver. | 8 | 1991, 1993 | N/A | N/A | N/A | N/A | $5,156 | A total of 1,825 giant cutgrass (*Zizaniopsis miliacea* ) plants were used to provide a vegetation buffer against wave-induced erosion. |

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| Vegetation | | Pecan Island | VP | N/A | N/A | Theunissen | Frith | Ver. | 29 | 1992, 1996 | N/A | N/A | N/A | N/A | $17,470 | A total of 4,000 seashore paspalum (*Paspalum vaginatum* ) plants and 910 California bulrush (*Schoenoplectus californicus* ) plants were used in order to create a living fence which will reduce wind-generated wave action, reduce turbidity, encourage growth of submerged aquatic vegetation, trap sediment, and increase food production for wildlife. |
| Vegetation | | Cameron Creole | VP | N/A | N/A | Theunissen | Flavin | Cam. | 28 | 1992, 2001 | N/A | N/A | N/A | N/A | $36,716 | A total of 12,000 smooth cordgrass (*Spartina alterniflora* ) plants were used to create a stand of emergent vegetation that will provide a living barrier against wave-induced shoreline erosion and trap available sediment. |
| Vegetation | | Walker GIWW | VP | N/A | N/A | Mount | Johns | Cal. | 9 | 1992 | N/A | N/A | N/A | N/A | $5,424 | A total of 800 smooth cordgrass (*Spartina alterniflora* ) plants were used to provide a vegetation buffer against wave-induced erosion. |
| Vegetation | | Doland Lease | VP | N/A | N/A | Theunissen | Flavin | Cam. | 4 | 1992 | N/A | N/A | N/A | N/A | $3,771 | A total of 1,195 California bulrush (*Schoenoplectus californicus* ) plants were used in order to create a stand of emergent vegetation that will provide a living barrier against wave-induced erosion and trap available sediment. |
| Vegetation | | Little Pecan Bayou | VP | N/A | N/A | Theunissen | Flavin | Cam. | 23 | 1994 | N/A | N/A | N/A | N/A | $13,560 | A total of 2,000 smooth cordgrass (*Spartina alterniflora* ) plants were used to re-establish stands of emergent vegetation in the interior marsh, where erosion has negatively affected marsh expanse. |
| Vegetation | | Shell Western | VP | N/A | N/A | Theunissen | Flavin | Cam. | 23 | 1994 | N/A | N/A | N/A | N/A | $13,831 | A total of 2,040 California bulrush (*Schoenoplectus californicus* ) plants were used to create a living fence which will reduce wind-generated wave action, reduce turbidity, encourage growth of submerged aquatic vegetation, trap sediment, and increase food production for wildlife. |
| Vegetation | | Tebo Point | VP | N/A | N/A | Theunissen | Flavin | Cam. | 33 | 1994, 1995, 1997 | N/A | N/A | N/A | N/A | $18,577 | A total of 2,740 California bulrush (*Schoenoplectus californicus* ) plants were used to create a stand of emergent vegetation that will provide a living barrier against wave-induced shoreline erosion and trap available sediment. |
| Vegetation | | Boudreaux Lake | VP | N/A | N/A | Theunissen | Flavin | Cam. | 23 | 1994 | N/A | N/A | N/A | N/A | $13,560 | A total of 2,000 California bulrush (*Schoenoplectus californicus* ) plants were used to create a living fence which will reduce wind-generated wave action, reduce turbidity, encourage growth of submerged aquatic vegetation, trap sediment, and increase food production for wildlife. |
| Vegetation | | Sweet Lake | VP | N/A | N/A | Theunissen | Flavin | Cam. | 18 | 1995, 1997 | N/A | N/A | N/A | N/A | $9,899 | A total of 2,460 California bulrush (*Schoenoplectus californicus* ) plants were used to create a living fence which will reduce wind-generated wave action, reduce turbidity, encourage growth of submerged aquatic vegetation, trap sediment, and increase food production for wildlife. |
| Vegetation | | Vermilion Corp #1 | VP | N/A | N/A | Theunissen | Frith | Ver. | 24 | 1995 | N/A | N/A | N/A | N/A | $7,160 | A total of 1,056 California bulrush (*Schoenoplectus californicus* ) plants were used to create a living fence which will reduce wind-generated wave action, reduce turbidity, encourage growth of submerged aquatic vegetation, trap sediment, and increase food production for wildlife. |
| Vegetation | | Vermilion Corp #2 | VP | N/A | N/A | Theunissen | Frith | Ver. | 24 | 1995 | N/A | N/A | N/A | N/A | $7,160 | A total of 1,056 California bulrush (*Schoenoplectus californicus* ) plants were used to create a living fence which will reduce wind-generated wave action, reduce turbidity, encourage growth of submerged aquatic vegetation, trap sediment, and increase food production for wildlife. |
| Vegetation | | ARCO Road Marsh | VP | N/A | N/A | Theunissen | Flavin | Cam. | 8 | 1995 | N/A | N/A | N/A | N/A | $3,675 | A total of 542 California bulrush (*Schoenoplectus californicus* ) plants were used to create a living fence which will reduce wind-generated wave action, reduce turbidity, encourage growth of submerged aquatic vegetation, trap sediment, and increase food production for wildlife. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vegetation | | Black Bayou Marsh | VP | N/A | N/A | Theunissen | Flavin | Cam. | 47 | 1995, 1997 | N/A | N/A | N/A | N/A | $26,713 | A total of 1,940 California bulrush (*Schoenoplectus californicus* ) plants and 2,000 smooth cordgrass (*Spartina alterniflora* ) plants were used to create a living fence which will reduce wind-generated wave action, reduce turbidity, encourage growth of submerged aquatic vegetation, trap sediment, and increase food production for wildlife. |
| Vegetation | | Grosse Savanne Marsh | VP | N/A | N/A | Theunissen | Flavin | Cam. | 202 | 1995, 1997, 1998, 1999, 2000, 2001 | N/A | N/A | N/A | N/A | $130,825 | A total of 16,755 California bulrush (*Schoenoplectus californicus* ) plants were used to create a living fence which will reduce wind-generated wave action, reduce turbidity, encourage growth of submerged aquatic vegetation, trap sediment, and increase food production for wildlife. |
| Vegetation | | Sabine GIWW | VP | N/A | N/A | Mount | Johns | Cam. Cal. | 10 | 1995 | N/A | N/A | N/A | N/A | $6,102 | A total of 900 smooth cordgrass (*Spartina alterniflora* ) plants were used to create a stand of emergent vegetation that will provide a living barrier against wave-induced shoreline erosion and trap available sediment. |
| Vegetation | | Savanne Neuvelle Marsh | VP | N/A | N/A | Theunissen | Flavin | Cam. | 7 | 1995 | N/A | N/A | N/A | N/A | $3,390 | A total of 500 California bulrush (Schoenoplectus californicus) plants were used to create a living fence which will reduce wind-generated wave action, reduce turbidity, encourage growth of submerged aquatic vegetation, trap sediment, and increase food production for wildlife. |
| Vegetation | | Umbrella Bay | VP | N/A | N/A | Theunissen | Flavin | Cam. | 37 | 1995, 1998 | N/A | N/A | N/A | N/A | $20,787 | A total of 3,066 California bulrush (*Schoenoplectus californicus* ) plants were used to create a stand of emergent vegetation that will provide a living barrier against wave-induced shoreline erosion and trap available sediment. |
| Vegetation | | West Gum Cove Marsh | VP | N/A | N/A | Theunissen | Flavin | Cal. Cam. | 11 | 1995 | N/A | N/A | N/A | N/A | $5,424 | A total of 800 California bulrush (Schoenoplectus californicus) plants were used to create a living fence which will reduce wind-generated wave action, reduce turbidity, encourage growth of submerged aquatic vegetation, trap sediment, and increase food production for wildlife. |
| Vegetation | | West Hackberry Marsh | VP | N/A | N/A | Theunissen | Flavin | Cam. | 10 | 1995 | N/A | N/A | N/A | N/A | $5,085 | A total of 750 California bulrush (Schoenoplectus californicus) plants were used to create a living fence which will reduce wind-generated wave action, reduce turbidity, encourage growth of submerged aquatic vegetation, trap sediment, and increase food production for wildlife. |
| Vegetation | | Webb Gully | VP | N/A | N/A | Mount | Johns | Cal. | 11 | 1995 | N/A | N/A | N/A | N/A | $5,560 | A total of 820 California bulrush (Schoenoplectus californicus) plants were used to create a living fence which will reduce wind-generated wave action, reduce turbidity, encourage growth of submerged aquatic vegetation, trap sediment, and increase food production for wildlife. |
| Vegetation | | Welfare Bridge Marsh | VP | N/A | N/A | Theunissen | Flavin | Cam. | 11 | 1995 | N/A | N/A | N/A | N/A | $5,424 | A total of 800 California bulrush (Schoenoplectus californicus) plants were used to create a living fence which will reduce wind-generated wave action, reduce turbidity, encourage growth of submerged aquatic vegetation, trap sediment, and increase food production for wildlife. |
| Vegetation | | Goose Lake | VP | N/A | N/A | Mount | Johns | Cal. | 22 | 1997 | N/A | N/A | N/A | N/A | $12,679 | A total of 1,120 smooth cordgrass (*Spartina alterniflora* ) plants and 750 California bulrush (*Schoenoplectus californicus* ) plants were used to protect the levee of the GIWW from eroding further, to slow water movement in the interior marsh, and to prevent the loss of marsh sediment. |
| Vegetation | | Collicon Lake | VP | N/A | N/A | Theunissen | Flavin | Cam. | 95 | 1997, 1999 | N/A | N/A | N/A | N/A | $56,206 | A total of 8,290 California bulrush (*Schoenoplectus californicus* ) plants were used to create a stand of emergent vegetation that will provide a living barrier against wave-induced shoreline erosion and trap available sediment. |
| Vegetation | | Platform #1 | VP | N/A | N/A | Theunissen | Frith | Ver. | 25 | 1997 | N/A | N/A | N/A | N/A | $14,916 | A total of 2,200 California bulrush (*Schoenoplectus californicus* ) plants were used to create a stand of emergent vegetation that will provide a living barrier against wave-induced shoreline erosion and trap available sediment. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vegetation | | Black Bayou Cutoff | VP | N/A | N/A | Theunissen, Mounts | Flavin, Johns | Cal. Cam. | 13 | 1997 | N/A | N/A | N/A | N/A | $7,797 | A total of 1,150 smooth cordgrass (Spartina alterniflora) plants were used to re-vegetate the old banks of the bayou. This re-vegetation process will provide a natural passive hydrologic baffle that will slow tidal exchange and provide a seed source for natural revegetation of emergent vegetation. |
| Vegetation | | West Alkali Ditch | VP | N/A | N/A | Mount | Johns | Cal. | 32 | 1997, 1999 | N/A | N/A | N/A | N/A | $18,984 | A total of 2,800 smooth cordgrass (*Spartina alterniflora* ) plants were used to create a stand of emergent vegetation that will provide a living barrier against wave-induced shoreline erosion and trap available sediment. |
| Vegetation | | Marseillaise Bayou Marsh | VP | N/A | N/A | Theunissen | Flavin | Cam. | 50 | 1997, 1998 | N/A | N/A | N/A | N/A | $29,290 | A total of 4,320 California bulrush (*Schoenoplectus californicus* ) plants were used to create a stand of emergent vegetation that will provide a living barrier against wave-induced shoreline erosion and to re-establish areas of emergent vegetation in a large area of open, shallow water. |
| Vegetation | | Platform #2 | VP | N/A | N/A | Theunissen | Frith | Ver. | 21 | 1998 | N/A | N/A | N/A | N/A | $12,204 | A total of 1,800 California bulrush (*Schoenoplectus californicus* ) plants were used to create a stand of emergent vegetation that will reduce wave energy in a large open area of eroded marsh. |
| Vegetation | | Vermilion Corp #3 | VP | N/A | N/A | Theunissen | Frith | Ver. | 2 | 1998 | N/A | N/A | N/A | N/A | $1,356 | A total of 200 California bulrush (*Schoenoplectus californicus* ) plants were used to create a stand of emergent vegetation that will reduce the erosion along the backside of a protection levee that is preventing high salinities from entering a freshwater marsh. |
| Vegetation | | Prien Lake Marsh | VP | N/A | N/A | Theunissen | Flavin | Cal. | 14 | 1998 | N/A | N/A | N/A | N/A | $8,136 | A total of 1,200 smooth cordgrass (*Spartina alterniflora* ) plants were used to create a stand of emergent vegetation that will provide a living barrier against wave-induced shoreline erosion and to re-establish areas of emergent vegetation in a large area of open, shallow water. |
| Vegetation | | Cotton Well Road | VP | N/A | N/A | Theunissen | Flavin | Cam. | 25 | 1999 | N/A | N/A | N/A | N/A | $14,916 | A total of 2,200 smooth cordgrass (Spartina alterniflora) plants were used to provide a living fence that will reduce fetch, reduce water movement, and provide a sediment source in order to accelerate the revegetation of this eroded marsh. |
| Vegetation | | Turner's Bay | VP | N/A | N/A | Mount | Johns | Cal. | 14 | 1999 | N/A | N/A | N/A | N/A | $8,136 | A total of 1,200 smooth cordgrass (*Spartina alterniflora* ) plants were used to provide a living barrier against wave-induced shoreline erosion and to trap available sediment. |
| Vegetation | | Kelso Bayou | VP | N/A | N/A | Theunissen | Flavin | Cam. | 3 | 1999 | N/A | N/A | N/A | N/A | $2,034 | A total of 300 smooth cordgrass (*Spartina alterniflora* ) plants were used to provide a living barrier against wave-induced shoreline erosion and to trap available sediment. |
| Vegetation | | Deepwater Cutgrass Demonstration | VP | N/A | N/A | Theunissen | Flavin | Cam. | 14 | 2000 | N/A | N/A | N/A | N/A | $8,136 | A total of 1,200 giant cutgrass (*Zizaniopsis miliacea* ) plants were used to determine if cutgrass can successfully be planted in open and deep (18-24 inches) waters, to create emergent vegetation, and to create a living barrier against wind and wave erosion. |
| Vegetation | | Mermentau River | VP | N/A | N/A | Theunissen | Flavin | Cam. | 27 | 2000 | N/A | N/A | N/A | N/A | $15,730 | A total of 2,320 smooth cordgrass (*Spartina alterniflora* ) plants were used to protect and slow erosion of newly rebuilt and critically eroding sections of levee. |
| Vegetation | | X-mas Tree Fence Demonstration | VP | N/A | N/A | Theunissen | Flavin | Cam. | 2 | 2000 | N/A | N/A | N/A | N/A | $1,243 | A total of 300 roseau cane (*Phragmites australis* ) plants were used to establish living vegetation within a section of brush fence. This vegetation would assist in sediment trapping, and serve as a wind break. If successful, this would eliminate the need for yearly maintenance. |
| Vegetation | | California Bulrush Sonde Demonstration | VP | N/A | N/A | Theunissen | Flavin | Cam. | 12 | 2000 | N/A | N/A | N/A | N/A | $6,780 | A total of 1,000 California bulrush (*Schoenoplectus californicus* ) plants were used to monitor the effects of variations in salinity and flood duration on growth and vigor in plants. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vegetation | | GIWW Cutgrass Demonstration | VP | N/A | N/A | Theunissen | Flavin | Cam. | 9 | 2000 | N/A | N/A | N/A | N/A | $5,424 | A total of 800 giant cutgrass (*Zizaniopsis miliacea* ) plants were used to determine the suitability of planting giant cutgrass in various soil types, and to establish emergent vegetation in an actively eroding area. This will aid in wave reduction and sediment trapping. |
| Vegetation | | West Perry Ridge | VP | N/A | N/A | Mount | Johns | Cal. | 34 | 2000 | N/A | N/A | N/A | N/A | $20,340 | A total of 3,000 California bulrush (*Schoenoplectus californicus* ) plants were used to provide a seed source for natural regeneration of emergent vegetation and to provide a natural, living barrier of emergent vegetation. This will protect against wind fetch and aid in decreasing water turbidity. |
| Vegetation | | Gum Cove Ferry GIWW | VP | N/A | N/A | Mount | Johns | Cal. | 12 | 2000 | N/A | N/A | N/A | N/A | $6,780 | A total of 1,000 smooth cordgrass (*Spartina alterniflora* ) plants were used to provide a natural living barrier against wave-induced shoreline erosion on the south bank of the GIWW. |
| Vegetation | | Smooth Cordgrass Maintenance Demonstration | VP | N/A | N/A | Theunissen | Flavin | Cam. | N/A | 2001 | N/A | N/A | N/A | N/A | $1,539 | This project, located just east of Black Bayou, was initiated to determine the effectiveness of fertilizing smooth cordgrass (*Spartina alterniflora* ) on constricted terraces which are not exhibiting vigorous growth. Approximately 30,750 feet of terraces were fertilized with three different fertilizing regimes. |
| Vegetation | | Jim Erbelding Beach | VP | N/A | N/A | Mount | Flavin | Cam. | 4 | 2001 | N/A | N/A | N/A | N/A | $2,089 | A total of 350 stems of bitter panicum (*Panicum amarum* ) were planted to stabilize dunes located on the east side of Jim Erbelding Road. This project was designed to test the effectiveness of trapping and accumulating sand with the sole use of vegetation. |
| Vegetation | | Superior Canal/Grand Lake | VP | N/A | N/A | Theunissen | Flavin | Cam. | 11 | 2001 | N/A | N/A | N/A | N/A | $7,479 | A total of 1,000 giant cutgrass (*Zizaniopsis miliacea* ) plants were placed to decrease shoreline erosion along Grand Lake shoreline, near the Superior Canal |
| Vegetation | | California Bulrush Sonde Demonstration 2 | VP | N/A | N/A | Theunissen | Flavin | Cam. | 7 | 2001 | N/A | N/A | N/A | N/A | $5,751 | A total of 660 California bulrush (*Schoenoplectus californicus* ) plants were placed near the Highway 384 (CS-21) project area to determine the tolerance of bulrush in high salinity marshes. |
| Vegetation | | M.O. Miller | VP | N/A | N/A | Theunissen | Flavin | Cam. | 46 | 2001 | N/A | N/A | N/A | N/A | $21,266 | A total of 4,000 smooth cordgrass (*Spartina alterniflora* ) plants were placed just south of Grand Chenier along existing infrastructure such as roads, levees, and canals. This project was constructed to reduce shoreline erosion, trap available sediment, and provide additional habitat for both fish and wildlife. |
| Vegetation | | GIWW Pontoon Bridge | VP | N/A | N/A | Theunissen | Flavin | Cam. | 11 | 2001 | N/A | N/A | N/A | N/A | $7,023 | A total of 1,000 giant cutgrass (*Zizaniopsis miliacea* ) plants were placed along the GIWW shoreline, south of the pontoon bridge on Highway 384. This project was constructed to determine the specific habitat requirements of giant cutgrass and its tolerance of deep water, loamy soils, and high wave energies. |
| Vegetation | | Choupique Bayou | VP | N/A | N/A | Mount | Johns | Cam. | 2 | 2001 | N/A | N/A | N/A | N/A | $1,277 | A total of 150 smooth cordgrass (*Spartina alterniflora* ) plants were placed along Bayou Choupique to reduce bank erosion, trap available sediment, provide wildlife and fisheries habitat, and to provide a seed source for natural regeneration in an area with little vegetation. |
| Vegetation | | DU Terrace Demo | VP | N/A | N/A | Theunissen | Flavin | Cam. | 107 | 2002 | N/A | N/A | N/A | N/A | $70,000 | A total of 5,500 smooth cordgrass (*Spartina alterniflora* ) plugs and a total of 6,000 smooth cordgrass trade gallon containers were placed on newly built dragline terraces. The effectiveness of trade gallon containers on 5 foot spacing versus bare root plugs on 3 foot spacing will be compared. Which form of fertilizer application, if any, is effective in increasing growth rate of smooth cordgrass will be also determined; a total of 46,500 linear feet were planted. |
| Vegetation | | Grosse Savanne Mar. #7 | VP | N/A | N/A | Theunissen | Flavin | Cam. | 11 | 2002 | N/A | N/A | N/A | N/A | $8,000 | A large open water area of eroded marsh was planted with 1,000 trade gallon containers of California bulrush (*Schoenoplectus californicus* ) to create stands of emergent vegetation that will provide a living barrier against wave action, help improve water clarity, establish areas of emergent vegetation in a large area of open, shallow water, and provide a seed source for natural regeneration of emergent vegetation; 5,000 linear feet were planted. |

| Program | State Project Number (Federal) | Project Name | Project Type | PPL | Agency/Sponsor | Senator | Representative | Parish | Acres Benefitted | Construction Completion Date | Engineering, Design, & Landrights Cost | Construction Cost | Operation, Maintenance, & Monitoring Cost | Baseline Cost Estimate | Current Cost Estimate | Project Summary |
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| Vegetation | | Trident Dock | VP | N/A | N/A | Theunissen | Flavin | Cam. | 6 | 2002 | N/A | N/A | N/A | N/A | $4,400 | A total of 550 trade gallon containers of smooth cordgrass (*Spartina alterniflora* ) were planted in an extremely high-wave-energy area to demonstrate its ability to withstand extremely strong wave energies, to establish emergent vegetation in an actively eroding area, to aid in wave reduction and sediment trapping, and to provide wildlife and fisheries habitat; 2,750 linear feet were planted. |
| Vegetation | | GIWW - Pontoon Bridge | VP | N/A | N/A | Theunissen | Smith | Cam. | 11 | 2002 | N/A | N/A | N/A | N/A | $8,000 | A total of 1,000 trade gallon containers of giant cutgrass (*Zizaniopsis miliacea* ) were planted in deeper-water areas (1.5 - 2 ft) with loamy soils. This was done to determine the suitability of planting giant cutgrass in deeper water areas with loamy soils and significant wave energy. Other objectives are to establish emergent vegetation in an actively eroding area, to aid in wave reduction and sediment trapping, and to provide wildlife and fisheries habitat; 5,000 linear feet were planted. |
| Vegetation | | Calcasieu Ship Channel SW | VP | N/A | N/A | Theunissen | Flavin | Cam. | 23 | 2003 | N/A | N/A | N/A | N/A | $16,000 | Approximately 2,000 trade gallon containers of smooth cordgrass (*Spartina alterniflora* ) were planted in the Calcasieu Ship Channel to demonstrate the ability of the vegetation to stabilize shorelines in extremely high wave energy sites. In addition comparisons concerning the effectiveness of single versus double row plantings will be observed. |
| Vegetation | | Christmas Tree Fence Demo #2 | VP | N/A | N/A | Theunissen | Flavin | Cam. | 2 | 2003 | N/A | N/A | N/A | N/A | $1,000 | A total of 100 trade gallon containers of roseau cane (*Phragmites australis* ) were planted in brush fences to serve as a wind break and assist in sediment trapping. If successful this project would eliminate the need for yearly refilling with Christmas trees. |
| Vegetation | | Marseillaise Bayou Marsh #3 | VP | N/A | N/A | Theunissen | Flavin | Cam. | 23 | 2003 | N/A | N/A | N/A | N/A | $16,000 | A total of 2000 trade gallon containers of California bulrush (*Schoenoplectus californicus* ) were planted on the north end of Little Chenier Road to create a stand of emergent vegetation that will provide a living barrier against wave erosion. |
| Vegetation | | Sabine Lake Shoreline | VP | N/A | N/A | Theunissen | Flavin | Cam. | 17 | 2003 | N/A | N/A | N/A | N/A | $4,000 | Approximately 500 trade gallon containers of smooth cordgrass (*Spartina alterniflora* ) were planted on the Sabine Lake shoreline to prevent shoreline erosion and introduce seed for natural regeneration. |
| Vegetation | | Catfish Lake | VP | N/A | N/A | Theunissen | Flavin | Cam. | 23 | 2003 | N/A | N/A | N/A | N/A | $16,000 | A total of 2,000 units of California bulrush (*Schoenoplectus californicus* ) were planted to create a stand of emergent vegetation that will act as a wave break to protect the shoreline and trap available sediments. |
| Vegetation | | South Fork Black Bayou | VP | N/A | N/A | Theunissen | Flavin | Cam. | 5 | 2003 | N/A | N/A | N/A | N/A | $3,200 | A total of 200 trade gallon containers of giant cutgrass (*Zizaniopsis miliacea* ) and 200 trade gallon containers of California bulrush (*Schoenoplectus californicus* ) were planted to slow erosion on the shoreline of the GIWW and to slow the water exchange in small adjacent ponds. |
| Vegetation | | Grand Chenier Highway | VP | N/A | N/A | Theunissen | Flavin | Cam. | 11 | 2003 | N/A | N/A | N/A | N/A | $8,000 | A total of 1,000 trade gallon containers of smooth cordgrass (*Spartina alterniflora* ) were planted south of Hwy. 82 to protect the remaining infrastructure and establish a seed source for natural regeneration. |
| Vegetation | | Moss Lake | VP | N/A | N/A | Mount | Johns | Cal. | 3 | 2003 | N/A | N/A | N/A | N/A | $2,400 | A total of 300 trade gallon containers of smooth cordgrass (*Spartina alterniflora* ) were planted on the southwest bank of Moss Lake to slow erosion in a rapidly deteriorating marsh. |
| Vegetation | | Lacassine GIWW | VP | N/A | N/A | Theunissen | Flavin | Cam. | 11 | 2003 | N/A | N/A | N/A | N/A | $8,000 | Approximately 500 trade gallon containers of smooth cordgrass (*Spartina alterniflora* ) and giant cutgrass (*Zizaniopsis miliacea* ) were planted to determine the effectiveness of the two species to reduce erosion in low salinity areas. |

| Program | State Project Number (Federal) | Project Name | Project Type | PPL | Agency/Sponsor | Senator | Representative | Parish | Acres Benefitted | Construction Completion Date | Engineering, Design, & Landrights Cost | Construction Cost | Operation, Maintenance, & Monitoring Cost | Baseline Cost Estimate | Current Cost Estimate | Project Summary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vegetation | | M.O. Miller 2-Micorrhyzal Fungi Demo | VP | N/A | N/A | Theunissen | Flavin | Cam. | 69 | 2003 | N/A | N/A | N/A | N/A | $42,664 | A total of 2,000 trade gallon containers and 6,666 plugs of smooth cordgrass (*Spartina alterniflora* ) will be planted along a levee in Grand Chenier. The project results will be used to evaluate the effectiveness of fertilizers and micorrhyzal fungi in certain environments. |
| Vegetation | | Mud Lake Peninsula | VP | N/A | N/A | Theunissen | Erdey | Cam. | 27 | 2002 | N/A | N/A | N/A | N/A | $9,360 | This demonstration project involved the planting of 780 plugs of smooth cordgrass (*Spartina alterniflora* ), 780 plugs of marshhay cordgrass (*Spartina patens* ), and 780 plugs of salt grass (*Distichlis spicata* ) in a dead area of marsh to determine which species would be best able to re-vegetate this marsh. The ultimate purpose is to re-establish vegetation in areas that are completely bare of any vegetation; a total of 11,700 linear feet were planted. |
| Section 204/1135 | | Brown Lake | DM MC | N/A | N/A | Theunissen | Flavin | Cam. | 315 | 1999 | N/A | N/A | N/A | N/A | $1,132,435 | Approximately 1.6 million cubic yards of dredged material was pumped to create 315 acres of land at an elevation conducive to marsh creation in the Brown Lake area near the Calcasieu River, 16 miles south of Lake Charles, Louisiana. |
| Section 204/1135 | | Calcasieu River & Pass Phase I | DM MC | N/A | N/A | Theunissen | Flavin | Cam. | 1,070 | 1992 | N/A | N/A | N/A | N/A | $1,560,804 | This Section 204 project provides for the disposal of dredged material removed from the area between mile 7.5 and 11.5 of the Calcasieu Ship Channel. A total of 4 million cubic yards of material were deposited in three phases within the Sabine National Wildlife refuge at an elevation conducive to marsh creation. |
| Section 204/1135 | | Calcasieu River & Pass Phase II | DM MC | N/A | N/A | Theunissen | Flavin | Cam. | 1,070 | 1996 | N/A | N/A | N/A | N/A | $1,560,804 | This Section 204 project provides for the disposal of dredged material removed from the area between mile 7.5 and 11.5 of the Calcasieu Ship Channel. A total of 4 million cubic yards of material were deposited in three phases within the Sabine National Wildlife refuge at an elevation conducive to marsh creation. |
| Section 204/1135 | | Calcasieu River & Pass Phase III | DM MC | N/A | N/A | Theunissen | Flavin | Cam. | 1,070 | 1999 | N/A | N/A | N/A | N/A | $1,560,804 | This Section 204 project provides for the disposal of dredged material removed from the area between mile 7.5 and 11.5 of the Calcasieu Ship Channel. A total of 4 million cubic yards of material were deposited in three phases within the Sabine National Wildlife refuge at an elevation conducive to marsh creation. |

Program: Breaux Act=Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA); State=Restoration projects funded primarily by the State of Louisiana through the Coastal Restoration Division; PCWRP=Parish Coastal Wetlands Restoration Program (Christmas Tree Program); Vegetation=DNR/NRCS/SWCC Vegetation Planting Program; Section 204/1135= Water Resource Development Act Sections 204 and 1135 beneficial use of dredged material projects; WRDA=Water Resources Development Act; Mitigation=mitigation projects implemented by the Coastal Restoration Division; Dedicated Dredging Program= State project LA-01 (see Table 5).

Project Type: HR=Hydrologic Restoration; DM=Beneficial Use of Dredged Material; MM=Marsh Management; MC=Marsh Creation; SP=Shoreline Protection; FD=Freshwater Diversion; VP=Vegetation Planting; SNT=Sediment and Nutrient Trapping; OM=Outfall Management; BI=Barrier Island; SD=Sediment Diversion.

PPL: Priority Project List (as authorized each year by the Breaux Act Task Force).

Agency/Sponsor: EPA=Environmental Protection Agency; NMFS=National Marine Fisheries Service; NRCS=Natural Resources Conservation Service; NWRC=National Wetlands Research Center; USFWS=U.S. Fish and Wildlife Service; USACE=U.S. Army Corps of Engineers.

Parish: Asc.=Ascension, Asu.=Assumption, Cam.=Cameron, Ibe.=Iberia, Jef.=Jefferson, Laf.=Lafourche, Orl.=Orleans, Plaq.=Plaquemines, StB.=St. Bernard, StC.=St. Charles, StJo.=St. John the Baptist, StM.=St. Mary, StT.=St. Tammany, Tan.=Tangipahoa, Ter.=Terrebonne, Ver.=Vermilion.

Anticipated Acres Benefitted: N/A for Breaux Act demonstration and deauthorized projects.

Baseline Cost Estimates and Current Cost Estimates for Breaux Act projects are from the USACE. Costs for other restoration programs are from DNR's Contract and Budget Section. Baseline Cost and Current Cost Estimate both include contingency funds. Beginning with Breaux Act PPL 10, project costs are for Phase I only. Vegetation program project costs are estimated based on plant size and quantity.

N/A=Not Applicable.

**Table 5.** Coastwide restoration projects and programs.

| Program | State Project Number (Federal) | Project Name | Project Type | PPL | Agency/Sponsor | Senator | Representative | Parish | Acres Benefitted | Construction Completion Date | Engineering, Design, & Landrights Cost | Construction Cost | Operation, Maintenance, & Monitoring Cost | Baseline Cost Estimate | Current Cost Estimate | Project Summary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Breaux Act | LA-02 (CW-7) | Nutria Harvest for Wetland Restoration (Demonstration) | N/A | 6 | USFWS | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | $2,140,000 | $2,140,000 | This project will enable the Louisiana Department of Wildlife and Fisheries to establish an economic incentive program to trap and control nutria, which are contributing to coastal wetland loss, by promoting the consumption of nutria meat. |
| Breaux Act | LA-03b | Coastwide Nutria Control Program | N/A | 11 | NRCS | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | $12,945,696 | $13,012,998 | The goal of the project is to eliminate or significantly reduce damage to coastal wetlands resulting from nutria herbivory. The implementation of an incentive payment program, beginning with the 2002-2003 trapping season, will compensate licensed trappers $4 for each nutria tail delivered to a collection center. In 2003, a total of 308,160 nutria tails, worth over 1.2 million dollars in incentive payments, were collected from 342 participants. |
| Breaux Act | LA-05 | Floating Marsh Creation Demonstration Project | N/A | 12 | NRCS | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | $1,080,891 | $1,080,891 | The goal of this project is to develop and test unique and previously untested technologies for creating floating marsh for potential use in fresh and intermediate zones. This project is a demo project that will be used to test the feasibility of buoyant vegetated mats/artificial islands to convert open water marsh areas and canals into fresh and intermediate marsh zones. |
| Other | | Coastal Wetlands Public Outreach | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | $350,000 | In cooperation with LDNR's Public Information Office and the Breaux Act Public Outreach Coordinator, the CRD has actively participated in educating the public about Louisiana's rapidly eroding coastal wetlands, the many impacts this has on the state and nation, and what has been done and is being done to curtail the loss of this irreplaceable natural resource. The dissemination of printed and video materials, website maintenance, a traveling Save LA Wetlands exhibit, and participation in numerous conferences, public events, and schools constitute our primary outreach efforts. The CRD has contributed $50,000 annually to public outreach since FY1996-97. |
| Other | | NRCS Biomass Production Program | VP | N/A | NRCS | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | $80,000 | $80,000 | The NRCS-LDNR/CRD Biomass Program is a multiyear programmatic initiative to accelerate the collection, testing, and release of important coastal wetland restoration plants. The Biomass Program began in 1999 in conjunction with the LDNR/CRD Small-Dredge Program with emphasis on plant performance and dedicated dredged sediment. The Biomass Program has expanded to include plant collections, field trials, and new planting techniques for severely impacted coastal wetlands, such as those recently experienced in the 2000 Brown Marsh die-back. Currently, NRCS through its Plant Materials Program has collected, tested, and maintained over 200 ecotypes of smooth cordgrass (*Spartina alterniflora* ). In addition, the program is accelerating work with marshhay cordgrass (*Spartina patens* ), gulf cordgrass (*Spartina spartinae* ) and a number of potentially important coastal woody species. This program is an important coastal restoration initiative that is advancing coastal wetland plant technology development and transfer. |

| Program | State Project Number (Federal) | Project Name | Project Type | PPL | Agency/Sponsor | Senator | Representative | Parish | Acres Benefitted | Construction Completion Date | Engineering, Design, & Landrights Cost | Construction Cost | Operation, Maintenance, & Monitoring Cost | Baseline Cost Estimate | Current Cost Estimate | Project Summary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Other | | NWRC Biomass Production Program | VP | N/A | NWRC | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | $384,500 | $1,007,600 | This multi-year cooperative agreement will study productivity of endemic wetland plants, with the goal of identifying specific environmental conditions for maximum growth of a number of varieties (i.e., cultivars) within four plant species. The information obtained will facilitate matching plant species and varieties to expected environmental conditions at restoration sites, thereby increasing the likelihood of successful revegetation efforts. The project was initiated in June 1998, and field data collection was completed in April 2003. |

Program: Breaux Act=Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA); State=Restoration projects funded primarily by the State of Louisiana through the Coastal Restoration Division; PCWRP=Parish Coastal Wetlands Restoration Program (Christmas Tree Program); Vegetation=DNR/NRCS/SWCC Vegetation Planting Program; Section 204/1135= Water Resource Development Act Sections 204 and 1135 beneficial use of dredged material projects; WRDA=Water Resources Development Act; Mitigation=mitigation projects implemented by the Coastal Restoration Division; Dedicated Dredging Program= State project LA-01 (see Table 5).

Project Type: HR=Hydrologic Restoration; DM=Beneficial Use of Dredged Material; MM=Marsh Management; MC=Marsh Creation; SP=Shoreline Protection; FD=Freshwater Diversion; VP=Vegetation Planting; SNT=Sediment and Nutrient Trapping; OM=Outfall Management; BI=Barrier Island; SD=Sediment Diversion.

PPL: Priority Project List (as authorized each year by the Breaux Act Task Force).

Agency/Sponsor: EPA=Environmental Protection Agency; NMFS=National Marine Fisheries Service; NRCS=Natural Resources Conservation Service; NWRC=National Wetlands Research Center; USFWS=U.S. Fish and Wildlife Service; USACE=U.S. Army Corps of Engineers.

Parish: Asc.=Ascension, Asu.=Assumption, Cam.=Cameron, Ibe.=Iberia, Jef.=Jefferson, Laf.=Lafourche, Orl.=Orleans, Plaq.=Plaquemines, StB.=St. Bernard, StC.=St. Charles, StJo.=St. John the Baptist, StM.=St. Mary, StT.=St. Tammany, Tan.=Tangipahoa, Ter.=Terrebonne, Ver.=Vermilion.

Anticipated Acres Benefitted: N/A for Breaux Act demonstration and deauthorized projects.

Baseline Cost Estimates and Current Cost Estimates for Breaux Act projects are from the USACE. Costs for other restoration programs are from DNR's Contract and Budget Section. Baseline Cost and Current Cost Estimate both include contingency funds. Beginning with Breaux Act PPL 10, project costs are for Phase I only. Vegetation program project costs are estimated based on plant size and quantity.

N/A=Not Applicable.

**Table 6.** Inactive state projects*.

| Project Number | Project Name | Parish |
|---|---|---|
| BA-03-b | Naomi (LaReussite) Diversion Enlargement of Capacity | Jefferson/ Plaquemines |
| BA-04-b | West Pointe a la Hache Diversion Enlargement | Plaquemines |
| BA-06 | U.S. Highway 90 to GIWW Wetland Outfall Management | Plaquemines |
| BA-07 | Couba Island-Restore Canal Closure | St. Charles |
| BA-08 | Lake Cataouatche Shore Protection | St. Charles |
| BA-09 | Salavador WMA Gulf Canal Project | St. Charles |
| BA-11/12 | Tiger/Red Pass Diversion and Outfall Management and Grand/Spanish Pass Diversion | Plaquemines |
| BA-13 | Hero Canal Diversion | Plaquemines |
| BA-14 | Little Lake Marsh Management | Jefferson |
| BA-17-a | City Price Diversion - Home Place | Plaquemines |
| BA-17-b | City Price Diversion - Happy Jack | Plaquemines |
| BS-01-a | Bohemia Diversion Structure - Operation of Existing Structure | Plaquemines |
| BS-01-b | Bohemia Diversion Structure Outfall Management | Plaquemines |
| BS-04-b | White's Ditch Diversion Siphon Enlargement | Plaquemines |
| BS-05 | Bayou LaMoque Diversion Outfall Management | Plaquemines |
| CS-04-b | Cameron-Creole Watershed Freshwater Introduction from GIWW | Cameron |
| CS-05-a | Sabine Freshwater Introduction | Cameron |
| CS-06 | Black Lake South Shore Protection | Cameron |
| CS-07 | Black Lake West Shore Protection | Cameron |
| CS-08 | Black Lake North Marsh Management | Cameron |
| CS-10 | Grand Lake Ridge Marsh Management | Cameron |
| CS-11-a | Sweet Lake/GIWW Bank Restoration (Phase I) | Cameron |
| CS-12 | Black Bayou Ridge Freshwater Introduction | Cameron |
| CS-13 | Back Ridge Freshwater Introduction | Cameron |
| CS-14 | Tripod Bayou Control Structure | Cameron |
| CS-15 | Boudreaux/Broussard Marsh Protection | Cameron |
| CS-16 | Black Bayou Culverts | Cameron |
| ME-02 | Hog Bayou Wetland Restoration and Enhancement | Cameron |
| ME-05 | White Lake Shore Protection | Vermilion |
| ME-06 | Big Burn Marsh Management | Cameron |
| ME-07 | Deep Lake Marsh Protection | Vermilion |
| ME-10 | Sawmill Canal Water Management (PD) | Cameron |
| MR-02 | Pass a Loutre Sediment Fencing | Plaquemines |
| MR-04 | Tiger Pass Wetland Creation(PD) | Plaquemines |
| MR-05 | Pass a Loutre Sediment Mining (PD) | Plaquemines |
| PO-01-b | Violet Siphon Diversion Enlargement | St. Bernard |
| PO-01-c | Violet Siphon Diversion Outfall Management | St. Bernard |
| PO-02-b | Alligator Pointe Shore Protection | Orleans |
| PO-03-a | LaBranche Wetland Complete Management Plan | St. Charles |
| PO-05-a | SE Lake Maurepas Wetland - Reduce Ponding of Water | St. John |
| PO-05-b | SE Lake Maurepas Wetland - Small Diversion of Miss. River Water | St. John |
| PO-07 | North Shore Wetland Marsh Restoration | St. Tammany |
| PO-11 | Cutoff Bayou Marsh Management | Orleans |

| Project Number | Project Name | Parish |
|---|---|---|
| PO-13 | Tangipahoa/Ponchartrain Shore Protection | Tangipahoa |
| PO-14 | Green Point/Goose Point Marsh Restoration | St. Tammany |
| PO-15 | Alligator Point Marsh Restoration | Orleans |
| TE-05-a | Grand Bayou Wetland Protection and Enhancement | Terrebonne |
| TE-08 | Bayou Pelton Wetland Protection | Terrebonne |
| TE-09 | Bully Camp Marsh Management | Lafourche |
| TE-11 | Isle Dernieres Cut Closure | Terrebonne |
| TE-12 | Bird Island Restoration | Terrebonne |
| TE-13 | Trinity Bayou Pilot Project | Terrebonne |
| TE-16 | St. Louis Wetland Restoration | Terrebonne |
| TE-21 | Falgout Canal South Wetland Creation (PD) | Terrebonne |
| TV-01-b | Shark Island/Weeks Bay Protection | Iberia |
| TV-05-1 | Marsh Island Canal Backfilling - Increment 1 | Iberia |
| TV-07 | Marsh Island Sediment Fencing - Restoration | Iberia |
| TV-08 | Redfish Point Shore Protection | Vermilion |
| TV-10 | Weeks Bay Shore Restoration | Iberia |

* Projects for which no funding exists.

# CONCLUSIONS

Since 1989, the Coastal Restoration Division/Coastal Engineering Division and its partners have been engaged in an effort to restore, preserve, and enhance Louisiana's coastal wetlands, which are disappearing at a rate of 24 square miles per year. To date, the CRD/CED has authorized 471 restoration projects throughout the coastal zone which are intended to ameliorate the state's wetland loss. As of December 2003, the CRD/CED had fully implemented 67 Breaux Act projects, 50 state projects, 27 federal projects, and installed over 7 miles of Christmas tree fences and 494 miles of vegetation plantings. Despite these efforts, land loss remains a significant problem in Louisiana.

Restoration project types range from large freshwater diversion projects, which divert a portion of a river's flow, sediment, and nutrients, into entire basins, to small vegetation projects, which involve planting salt- and flood-tolerant marsh plants to stabilize eroding soils.

Among those projects already constructed, many have proven to be successful. Examples include beneficial use of dredged material and marsh creation projects, which have created vegetated marsh habitat in areas that previously contained deteriorated wetlands or open water. Sediment diversion projects have also been successful in creating marsh in the form of crevasse-splays in areas that were once shallow open water. Data collected from these projects are not only used to evaluate the effectiveness of individual restoration projects, but also to guide the planning and design of future projects.

The CRD/CED and its partners have worked tirelessly to determine the most efficient and productive manner to address Louisiana's catastrophic land loss problem. Recent cooperative initiatives like the Louisiana Coastal Area Feasibility Study, the Governors Commission on Coastal Restoration and Conservation, the project Ecological Review process, and the Adaptive Management Review are aimed at improving the ability to design and implement effective coastal restoration projects. Also, the fledgling America's Wetland campaign will educate the nation and solicit national support for saving Louisiana's vanishing coast. Furthermore, technological advances have enabled the public and scientific professionals to acquire information and data on all restoration projects through the CRD/CED GIS web page. These most recent developments, and the continued dedication of scientists, engineers, landowners, and the public will ensure that Louisiana's coast will not disappear without a fight.

Knowledge is a powerful tool in the conservation of natural resources, not only for wetland scientists and project engineers, but also for concerned citizens. By remaining aware and informed of coastal problems and restoration efforts, individuals can help preserve Louisiana's wetlands.

Show your support by promoting wetland restoration efforts, working with non-governmental coastal organizations, attending local meetings, and conserving wetland resources by following fishing and hunting regulations. Help by participating in beach clean-ups, environmental education programs, and in LDNR's Christmas tree program either by donating your tree after the holiday season or by volunteering your time to repair and create Christmas tree fences. Through concern and participation, citizens can play a role in the success of wetland restoration programs and can personally contribute toward the goal of saving a national treasure.

Please visit our website at www.saveLAwetlands.org for more information regarding LDNR restoration projects, as well as environmental data from over 4,200 monitoring stations located throughout the Louisiana coast. For any other information or questions, call 1-888-459-6107, or write to the Louisiana Department of Natural Resources, Coastal Restoration Division, P.O. Box 44027, Capitol Station, Baton Rouge, Louisiana 70804-4027.

**Louisiana Department of Natural Resources**
**1-888-459-6107**

**www.saveLAwetlands.org**